

# TX-28/25XD3F Service Manual

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## Service Support

Service and repair of this product is supported by Panasonic's LUCI interface.

This interface provides a link between the TV and a standard PC to allow a number of diagnostic and control functions to be performed.

For more details contact your local Panasonic company.

  
BACK

EXIT

Video / Audio

Control

  
BACK

B - PCB

E - PCB

Y - PCB

  
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E - Schematic

N - Schematic

P - Schematic

Y - Schematic

  
BACK

# Service Manual



## Colour Television TX–28XD3F TX–25XD3F EURO–2M Chassis

### SPECIFICATIONS

(Information in brackets {} refer to TX–25XD3F)

<b>Power Source :</b>	220–240V AC, 50Hz
<b>Power Consumption :</b>	96W, {94W}
<b>Standby Power Consumption :</b>	1W
<b>Aerial Impedance :</b>	75Ω unbalanced, Coaxial Type
<b>Receiving System :</b>	PAL–BG, H, PAL 60, SECAM BG, L/L' MNTSC, NTSC (AV Only)
<b>Receiving Channels :</b>	
VHF E2 – E12	VHF H1 – H2 (ITALY)
VHF A – H (ITALY)	UHF E21 – E69
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)
<b>Intermediate Frequency :</b>	
Video	38.9 MHz, 34 MHz
Sound	33.4 MHz, 33.16 MHz, 32.4 MHz, 33.05 MHz, 40.4 MHz
Colour	34.47 MHz, 34.5 MHz, 34.65 MHz
<b>Video / Audio Terminals :</b>	
<b>AUDIO MONITOR OUT</b>	Audio(RCA x 2) 500mVrms, 1kΩ
AV1 IN	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 10kΩ RGB (21 pin)
AV1 OUT	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 1kΩ
AV2 IN	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 10kΩ S–Video IN Y : 1 Vp–p 75Ω (21 pin) C : 0.3 Vp–p 75Ω
AV2 OUT	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 1kΩ
AV3 IN	Audio (RCA x 2) 500mV rms, 10kΩ Video (RCA x 1) 1 Vp–p 75Ω
<b>High Voltage :</b>	28kV ± 1kV
<b>Picture Tube :</b>	A66ECF50X32 66 cm {A59ECF50X32 59 cm}
<b>Audio Output :</b>	
Speaker	20W (Music Power) 8 Ω Impedance
Headphones	8 Ω Impedance
<b>Accessories supplied :</b>	Remote Control 2 x R6 (UM3) Batteries
<b>Dimensions :</b>	
Height :	596.5 mm {550 mm}
Width :	778 mm {730 mm}
Depth :	481.5 mm {479 mm}
<b>Net Weight :</b>	34kg {31kg}

Specifications are subject to change without notice.  
Weight and dimensions shown are approximate.

### CARACTÉRISTIQUES

(Les informations entre parenthèses {} concernent le TX – 25XD3F)

<b>Alimentation :</b>	220–240V AC, 50Hz
<b>Consommation :</b>	96W, {94W}
<b>Standby Consommation :</b>	1W
<b>Impédance d'antenne :</b>	75Ω asymétrique sur prise coaxiale
<b>Système de réception :</b>	PAL–BG, H, PAL 60, SECAM BG, L/L' MNTSC, NTSC (Entrée AV seulement)
<b>Canaux de réception :</b>	
VHF E2 – E12	VHF H1 – H2 (ITALY)
VHF A – H (ITALY)	UHF E21 – E69
CATV (S01 – S05)	CATV S1 – S10 (M1 – M10)
CATV S11 – S20 (U1 – U10)	CATV S21 – S41 (HYPERBAND)
<b>Fréquence Intermédiaire :</b>	
Video	38.9 MHz, 34 MHz
Sound	33.4 MHz, 33.16 MHz, 32.4 MHz, 33.05 MHz, 40.4 MHz
Colour	34.47 MHz, 34.5 MHz, 34.65 MHz
<b>Les bornes vidéo/audio :</b>	
<b>AUDIO MONITOR SORTIE</b>	Audio(RCA x 2) 500mVrms, 1kΩ
Entrée AV1 (21 broches)	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 10kΩ RGB (21 pin)
Sortie AV1 (21 broches)	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 1kΩ
Entrée AV2 (21 broches)	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 10kΩ S–Video IN Y : 1 Vp–p 75Ω (21 pin) C : 0.3 Vp–p 75Ω
Sortie AV2 (21 broches)	Video (21 pin) 1V p–p 75Ω Audio (21 pin) 500mV rms 1kΩ
Entrée AV3	Audio (RCA x 2) 500mV rms, 10kΩ Video (RCA x 1) 1 Vp–p 75Ω
<b>Tension d'anode :</b>	28kV ± 1kV
<b>Tube image :</b>	A66ECF50X32 66 cm {A59ECF50X32 59 cm}
<b>Sortie Audio :</b>	20W (Music Power) 8 Ω Impédance
Casque d'écoute	8 Ω Impédance
<b>Accessories fournis :</b>	Télécommande R6 (UM3) Piles x 2
<b>Dimensions :</b>	
Hauteur :	596.5 mm {550 mm}
Largeur :	778 mm {730 mm}
Profondeur :	481.5 mm {479 mm}
<b>Poids (NET) :</b>	34kg {31kg}

Les caractéristiques techniques sont susceptibles de modification sans Préavis.  
Le poids et les dimensions indiqués sont approximatifs.

# Panasonic

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## SAFETY PRECAUTIONS

### GENERAL GUIDE LINES

1. It is advisable to insert an isolation transformer in the AC supply before servicing a hot chassis.
2. When servicing, observe the original lead dress in the high voltage circuits. If a short circuit is found, replace all parts which have been overheated or damaged by the short circuit.
3. After servicing, see that all the protective devices such as insulation barriers, insulation papers, shields and isolation R-C combinations are correctly installed.
4. When the receiver is not being used for a long period of time, unplug the power cord from the AC outlet.
5. Potentials as high as 29kV are present when this receiver is in operation. Operation of the receiver without the rear cover involves the danger of a shock hazard from the receiver power supply. Servicing should not be attempted by anyone who is not familiar with the precautions necessary when working on high voltage equipment. Always discharge the anode of the picture to the chassis before handling the tube.
6. After servicing make the following leakage current checks to prevent the customer from being exposed to shock hazards.

### LEAKAGE CURRENT COLD CHECK

1. Unplug the AC cord and connect a jumper between the two prongs of the plug.
2. Turn on the receiver's power switch.
3. Measure the resistance value with an ohmmeter, between the jumpered AC plug and each exposed metallic cabinet part on the receiver, such as screw heads, aerials, connectors, control shafts etc. When the exposed metallic part has a return path to the chassis the reading should be between 4M ohm and 20M ohm. When the exposed metal does not have a return path to the chassis the reading must be infinite.

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## PRECAUTIONS DE SECURITE

### CONSEILS GENERAUX

1. Avant d'effectuer toute révision d'un châssis sous tension il est recommandé d'installer un transformateur d'isolation.
2. Il est important, lors des réparations, de conserver la position initial de tous les fils et faisceaux, surtout dans le circuit de la haute tension. Remplacer toutes les pièces affectées par la chaleur dégagée lors d'un court-circuit.
3. Après les réparations, s'assurer que toutes les pièces protectrices telles que barrières ou papiers isolants, blindages et réseaux d'isolation R-C soient convenablement placées.
4. Il est préférable de débrancher le fil d'alimentation si la télé-couleur ne doit pas être utilisée pendant un certain temps.
5. Une tension élevée, de l'ordre de 29kV, est présente en plusieurs endroits lorsque l'appareil est en circuit. Il y a danger de chocs électriques lorsque le contact est établi en absence du panneau arrière. Toute personne qui tente de réparer cet appareil doit d'abord être consciente des précautions à observer avant de travailler sur un circuit à haute tension. Toujours décharger l'anode du tube cathodique au châssis avant de manipuler.
6. Après tout réparation, on doit effectuer les tests de courant de fuite dans le but d'éviter tout choc.

### VERIFICATION DES COURANTS DE FUITE SANS ALIMENTATION

1. Débrancher le fil d'alimentation et installer un fil STRAP entre les deux broches de la fiche.
2. Placer l'interrupteur comme pour établir le contact sur l'appareil.
3. Mesurer la résistance entre les branches de la fiche d'alimentation et les pièces métalliques visibles telles que têtes de vis, antennes, arbre des commandes, support des poignées, etc. Certaines de ces pièces sont en contact avec le châssis et la résistance mesurée devrait se situer entre 4MΩ, et 20MΩ. La résistance des pièces qui ne sont pas en contact avec le châssis doit être infinie.

## LEAKAGE CURRENT HOT CHECK

1. Plug the AC cord directly into the AC outlet. Do not use an isolation transformer for this check.
2. Connect a 2kΩ 10W resistor in series with an exposed metallic part on the receiver and an earth such as a water pipe.
3. Use an AC voltmeter with high impedance to measure the potential across the resistor.
4. Check each exposed Metallic part and check the voltage at each point.
5. Reverse the AC plug at the outlet and repeat each of the above measurements.
6. The potential at any point should not exceed 1.4 Vrms. In case a measurement is outside the limits specified, there is a possibility of a shock hazard, and the receiver should be repaired and rechecked before it is returned to the customer.

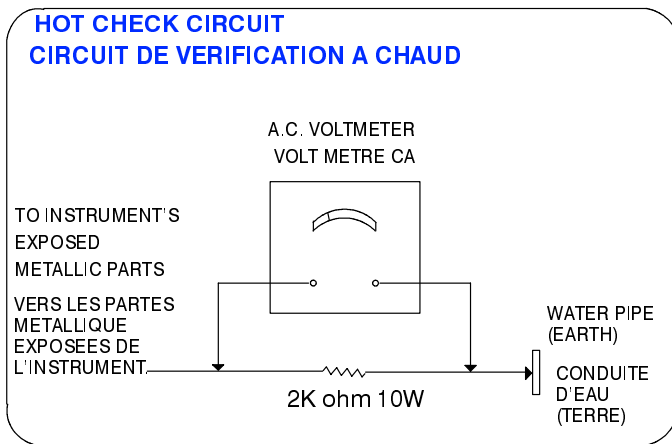


Fig.1

## X-RADIATION WARNING

1. The potential sources of X-Radiation in TV sets are the high voltage section and the picture tube.
2. When using a picture tube test jig for service ensure that the jig is capable of handling 29kV without causing X-Radiation.

### NOTE : It is important to use an accurate periodically calibrated high voltage meter

1. Set the brightness to minimum.
2. Measure the high voltage. The meter should indicate 28kV ± 1kV if the meter indication is out of tolerance, immediate service and correction is required to prevent the possibility of premature component failure.
3. To prevent any X-Radiation possibility, it is essential to use the specified tube.

## VERIFICATION A CHAUD DU COURANT DE FUITE

1. Brancher le cordon secteur directement à une prise secteur. Ne pas utiliser de transformateur d'isolation pour cette vérification.
2. Raccorder une résistance de 2kΩ, 10W, en série avec une partie métallique exposée du récepteur et une terre comme une conduite d'eau.
3. Utiliser un voltmètre CA, de type à impédance élevée, pour mesurer le potentiel à travers la résistance.
4. Vérifier toutes les parties métalliques exposées et mesurer la tension à chaque point.
5. Retourner la fiche CA dans la prise secteur et répéter toutes les mesures ci-dessus.
6. Le potentiel à tous les points ne doit pas dépasser 1.4 volt RMS. AU cas où une mesure est supérieure à cette limite spécifiée, il y a un risque de décharge électrique et le récepteur doit être réparé et revérifié avant d'être rendu au client.

## IRRADIATION AUX RAYONS X ATTENTION:

1. Les parties de la haute tension et du tube-cathodique d'une télé-couleur sont des sources possible d'émissions de rayons X.
2. Si un tube cathodique témoin est utilisé pour la réparation, s'assurer que son assemblage pourra supporter 29kV sans émettre de radiations.

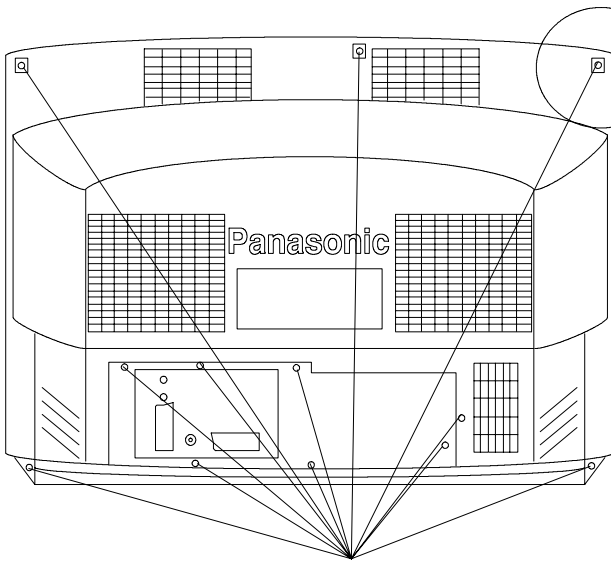
### REMARQUE : Il est important que le multimètre à haute tension utilisé soit étalonné périodiquement.

1. Tourner entièrement vers la gauche la commande de lumière.
2. Mesurer la haute tension à l'aide du multimètre approprié. La valeur nominale est de 28kV ± 1kV. Si la lecture est hors des tolérances, une réparation immédiate s'impose afin de prévenir toute panne prématurée.
3. Il est essentiel d'utiliser le tube cathodique d'origine pour prévenir toute émission de rayons X.

## SERVICE HINTS

### HOW TO REMOVE THE REAR COVER

1. Remove the 12 screws (A) as shown in **Fig.2/Fig.3.**



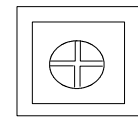
SCREWS A  
VIS (A)

**Fig. 2.**

## SUGGESTIONS DE DEPANNAGE

### COMMENT RETIRER LE PENNEAU ARRIERE

1. Retirer les 12 vis (A) comme sur la **Fig.2. / Fig.3.**

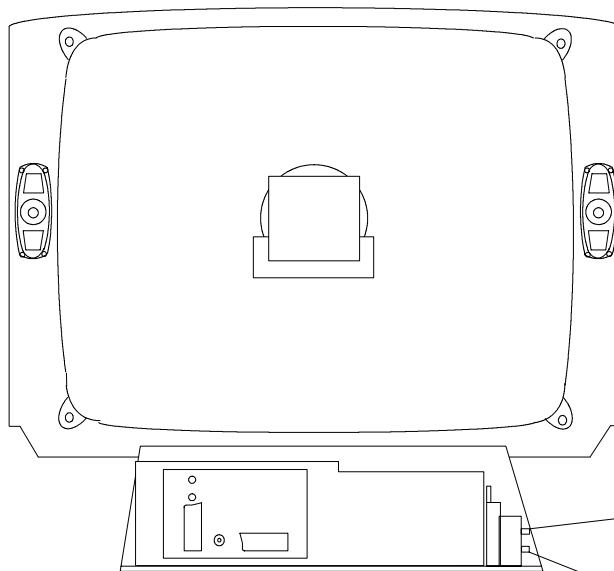


SCREW  
VIS

**Fig. 3.**

## LOCATION OF CONTROLS

## EMPLACEMENT DES COMMANDES



E.P.C.B.

**Fig. 4.**

FOCUS  
CONCENTRATION

SCREEN



## SERVICE MODE

The remote control is used for entering and storing adjustments, with the exception of cut-off adjustments which must always be done prior to service adjustment. Perform adjustments in accordance with screen display. The display on the screen also specifies the CCU variants as well as the approx. setting values. The adjustment sequence for the service mode is indicated below.

1. Set the Bass to maximum position, set the Treble to minimum position, press the Reveal button on the remote control and at the same time press the Volume down on the customer controls at the front of the TV, this will place the TV into the Service Mode.
2. Press the RED / GREEN buttons to step down / up through the functions.
3. Press the YELLOW / BLUE buttons to alter the function values.
4. Press the STORE button on the preset panel after each adjustment has been made to store the required values.
5. To exit the Service Mode press the Normalisation button.

**NOTE:** This TV also has the option of using a Memory Pack which enables you to copy the preset TV channels and analogue levels into the Memory Pack and then upload them onto another EURO-2M TV set.

## USING THE MEMORY PACK

### TV to Memory Pack process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:—

Program  
External>>TV

3. Press the blue button on the remote control. The screen will show:—

Program  
TV>>External

4. Press the STORE button on the TV. The screen will show:—

Storing

5. All the tuning information stored inside the TV will now be transferred to the Memory Pack. This process will take 2-3 minutes to complete and when finished the screen will show:—

OK!

### Memory Pack to TV Process

1. Plug the memory pack into the lower of the two 21 pin terminals at the back of the TV and switch the TV on. If the TV has only one 21 pin connector then this will be able to accept the memory pack.
2. Go into the Service Mode as explained above. The screen will show:—

Program  
External>>TV

3. Press the STORE button on the TV. The screen will show:—

Loading

4. All the tuning information stored inside the Memory Pack will now be transferred to the TV. This process will take 2-3 minutes to complete and when finished the screen will show:—

OK!

5. The tuning information from the Memory Pack has now been copied into the TV
6. To exit from the Service Mode switch off the TV.
7. The process has now been completed and the Memory Pack can now be removed.

## Errors

If an error occurs while using the Memory Pack the TV will detect this and the screen will show:—

Program  
Error!

If this happens then switch off the TV and repeat the process that was being used. If the errors continue to occur then check the connectors between the TV and the memory pack and check the 9V battery inside the memory pack.

# RÉGLAGES

La télécommande sert à entrer et stocker les données des réglages. Sauf pour le cut-off qui doit être réalisé en priorité. Les réglages s'affichent sur l'écran, ainsi que les spécificités nominales du CCU.

1. Régler par la télécommande le niveau de **grave** au **maximum**, **aigu** au **minimum**. Simultanément appuyer sur: **Volume-** du tiroir en face avant et le bouton **Reveal** de la télécommande.
2. Appuyer sur la touche **ROUGE** ou **VERTE** pour sélectionner la fonction désirée.
3. Appuyer sur la touche **JAUNE** ou **BLEUE** pour modifier les valeurs des réglages.
4. Mettre en mémoire après chaque réglage, en appuyant sur la touche **STORE**.
5. Pour sortir de la position SERVICE MODE arrêter le TV

**REMARQUE** : Le Memory Pack permet de copier la configuration du TV, (Chaines, Niveaux analogiques) et de la transférer, via le bloc-Mémoire vers un autre TV EURO-2M.

## Processus de transfert "téléviseur vers bloc-mémoire"

1. La partie arrière du téléviseur comporte deux connecteurs à 21 broches : brancher le bloc-mémoire dans le connecteur inférieur (AV2), puis mettre le téléviseur en marche ("ON"). Si le téléviseur ne comporte qu'un seul connecteur à 21 broches, celui-ci pourra alors servir à reccorder le bloc-mémoire.
2. Passer en Mode Service (voir ci-dessus). L'écran affichera:

Program  
External >> TV

3. Appuyer sur la bouton BLEU de la télécommande. L'écran du téléviseur présente le message suivant:

Program  
TV >> External

4. Appuyer sur la bouton de mémorisation (STORE) du téléviseur et l'écran présentera la message suivant:

Storing

5. Toutes les informations de syntonisation enregistrées par le téléviseur seront maintenant transférées vers le bloc-mémoire. Cette opération ne prend que 2 à 3 minutes. Lorsqu'elle est terminée, l'écran du téléviseur présentera message suivant:

OK!

## Processus de transfert "bloc-mémoire vers téléviseur"

1. La partie arrière du téléviseur comporte deux connecteurs à 21 broches : brancher le bloc-mémoire dans le connecteur inférieur (AV2), puis mettre le téléviseur en marche ("ON"). Si le téléviseur ne comporte qu'un seul connecteur à 21 broches, celui-ci pourra alors servir à reccorder le bloc mémoire.
2. Passer en Mode Service (voir ci-dessus). L'écran affichera:

Program  
External >> TV

3. Appuyer sur la bouton de mémorisation (STORE) du téléviseur et l'écran présentera la message suivant:

Loading

4. Toutes les informations de syntonisation enregistrées par le téléviseur seront maintenant transférées vers le bloc-mémoire. Cette opération ne prend que 2 à 3 minutes. Lorsqu'elle est terminée, l'écran du téléviseur présentera message suivant:

OK!

5. Les informations de syntonisation du téléviseur du bloc-mémoire ont maintenant été copiées dans le téléviseur.
6. Pour sortir du mode d'exploitation SERVICE, mettre le téléviseur hors circuit ("OFF").
7. Une fois l'opération terminée, enlever le bloc-mémoire.

## Erreurs

Le téléviseur détectera toutes les erreurs susceptibles de se produire éventuellement pendant l'utilisation du bloc-mémoire. L'écran présentera alors le message suivant:

Program  
Error!

Dans ce cas, mettre le téléviseur hors circuit ("OFF") puis répéter l'opération qui était en cours. En cas d'erreurs répétées, vérifier les connexions entre le téléviseur et le bloc-mémoire, puis contrôler l'état de la pile 9V à l'intérieur du bloc-mémoire.



## ADJUSTMENT PROCEDURE

Item/Preparation	Adjustments
<b>+B SET-UP</b> 1. Receive a test pattern 2. Set the controls: Brightness           minimum Contrast             minimum Volume                minimum	1. Set the +B voltage up as follows: Adjust <b>R811</b> so that <b>B2</b> shows $147V \pm 1V$ 2. Confirm the following voltages. <b>B1</b> 200 $\pm$ 10V <b>B6</b> 12 $\pm$ 0.5V <b>B3</b> 27 $\pm$ 1V <b>B7</b> 5 + 0.1/-0.25V <b>B4</b> 41 $\pm$ 1V <b>B8</b> 5 $\pm$ 0.25V <b>B5</b> 15.5 $\pm$ 1V <b>U33</b> 31 $\pm$ 1V
<b>RF AGC</b> 1. Receive a test pattern. 2. Connect an oscilloscope between the tuner RF AGC and ground. 3. Set the oscilloscope gain range to 1V/div.	1. Check that the noise becomes large when the RF AGC VR <b>R126</b> is turned counterclockwise. After the check turn it clockwise. 2. Gradually turn the RF AGC VR anti-clockwise, and set the RF AGC VR to the point where the RF AGC voltage is just falling to a point where this voltage drops by 0.2V from the maximum value.
<b>CUT OFF</b> 1. Receive a test pattern. 2. Degauss the tube externally. 3. Set the TV into Service Mode 1. 4. Select Cutoff DC mode.	1. Confirm then value is 128 and select Ug2 mode noting colour with largest value. 2. Turn the screen VR until a colour reaches 20~ 30. 3. Connect an oscilloscope to the cathode with the biggest value colour. 4. Select Cutoff DC mode and adjust Cutoff pulse to $159V \pm 5V$ . 5. Disconnect the oscilloscope and adjust the screen to whichever colour reaches $70 \pm 30$ first.

## RÉGLAGES

Préparation	Réglages
<b>+B</b> 1. Appliquer une mire à carreaux N/B 2. Régler les contrôles suivants Lumière            Minimum Contraste         Minimum Volume             Minimum	1. Régler les tensions <b>+B</b> comme suit : Régler <b>R811</b> tel que la tension <b>B2</b> soit de $147V \pm 1V$ 2. Confirmer le réglage : <b>B1</b> 200 $\pm$ 10V <b>B6</b> 12 $\pm$ 0.5V <b>B3</b> 27 $\pm$ 1V <b>B7</b> 5 $\pm$ 0.1/-0.25V <b>B4</b> 41 $\pm$ 1V <b>B8</b> 5 $\pm$ 0.25V <b>B5</b> 15.5 $\pm$ 1V <b>U33</b> 31 $\pm$ 1V
<b>CAG RF</b> 1. Appliquer une mire test 2. Relier l'oscilloscope entre l'AGC RF du tuner et la masse 3. Calibrer l'oscilloscope sur 1V/div	1. Vérifier que le bruit augmente en tournant le VR <b>R126</b> CAG RF vers la gauche. Puis le tourner vers la droite. 2. Tourner graduellement VR <b>R126</b> vers la gauche jusqu'à obtenir 0.2V de moins que la tension maximum
<b>CUT OFF</b> 1. Appliquer une mire à carreaux N/B 2. Démagnétiser le tube extérieurement 3. Mettre le TV en Mode Service 1 4. Sélectionner le Mode Cutoff DC	1. Confirmer que la valeur soit 128 et sélectionner le mode Ug2 et noter la valeur de la couleur la plus élevée 2. Tourner le potentiomètre d'Ecran jusqu'à ce que la valeur d'une couleur se situe entre 20 et 30 3. Relier l'oscilloscope sur la cathode de la couleur dont la valeur est la plus élevée 4. Sélectionner le mode CUTOFF DC et régler l'impulsion de CUTOFF à $159V \pm 5V$ 5. Retirer l'oscilloscope et régler la tension d'ecran à $70 \pm 30$ sur la première couleur atteignant cette valeur

# SELF CHECK

Self check is used to automatically check the Bus lines and Hexadecimal code of the TV set.  
 To enter the Self Check mode press Volume down button, on the Preset Panel, at the same time pressing the Status button, on the Remote Control, and the screen will show: –  
 When exiting Self Check the customer settings will return to factory setup.

1	— ok	Tuner	11	— --	Dolby IC for C/R	21	— ok	P SBLED	Hex codes 6A 22 21 94 95
2	— ok	VIF	12	— ok	P S MODE	22	— ok	P OFF	
3	— ok	EEPROM	13	— ok	P TA0	23	— ok	P DEFL	
4	— --	Sound AV switch1	14	— ok	P TA1	24	— ok	P RAM	
5	— ok	Video AV switch1	15	— ok	P TA2				
6	— ok	VDP	16	— ok	P TA3				
7	— ok	TPU	17	— ok	P SDA				
8	— ok	MSP	18	— ok	P SCL1				
9	— --	Dolby Sub	19	— ok	P SCL3				
10	— --	Dolby IC for L/R	20	— ok	P SCL4				

If the CCU ports have been checked and found to be incorrect then "—" will appear in place of "OK".

# AUTO TEST

L'auto test est utilisé pour vérifier le BUS et les codes Hexadécimaux du TV.  
 Pour passer en mode test ,il faut appuyé simultanément sur : VOLUME MOINS sur le tiroir en face avant et: STATUS sur la télécommande Infra-rouge: –  
 Après un Auto Test (Self Check) le téléviseur retourne en position réglages usine.

1	— ok	Tuner	11	— --	Dolby IC for C/R	21	— ok	P SBLED	Hex codes 6A 22 21 94 95
2	— ok	VIF	12	— ok	P S MODE	22	— ok	P OFF	
3	— ok	EEPROM	13	— ok	P TA0	23	— ok	P DEFL	
4	— --	Sound AV switch1	14	— ok	P TA1	24	— ok	P RAM	
5	— ok	Video AV switch1	15	— ok	P TA2				
6	— ok	VDP	16	— ok	P TA3				
7	— ok	TPU	17	— ok	P SDA				
8	— ok	MSP	18	— ok	P SCL1				
9	— --	Dolby Sub	19	— ok	P SCL3				
10	— --	Dolby IC for L/R	20	— ok	P SCL4				

Si lors du test une fonction du ccu est incorrecte l'afficheur indiquera "—" au lieu de "OK".

## ALIGNMENT SETTINGS

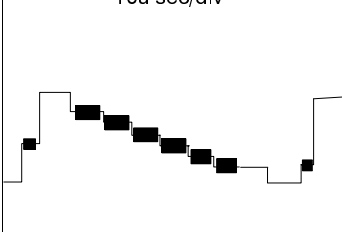
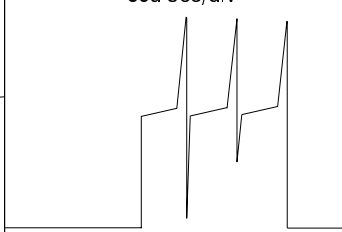
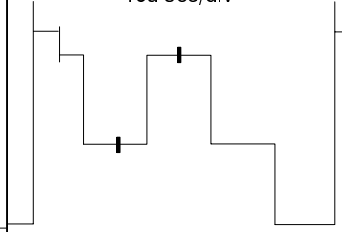
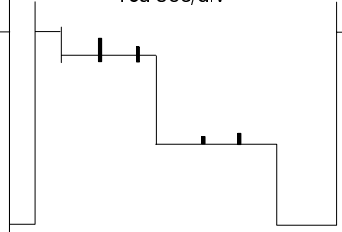
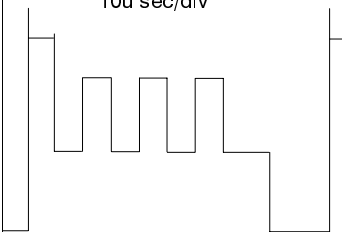
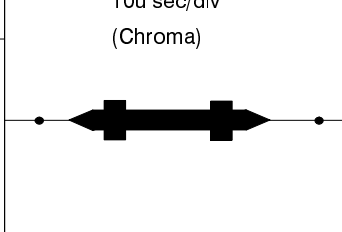
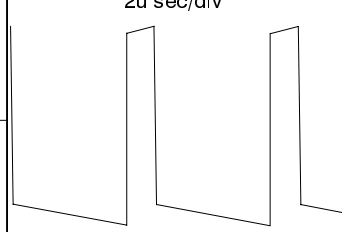
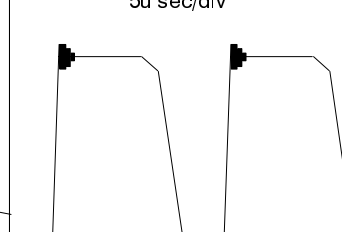
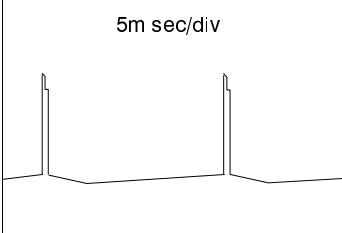
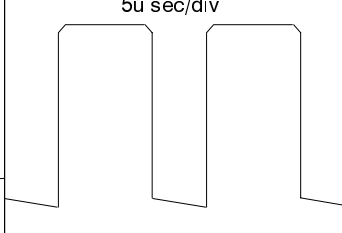
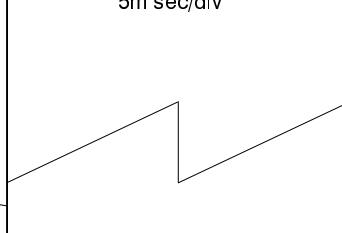
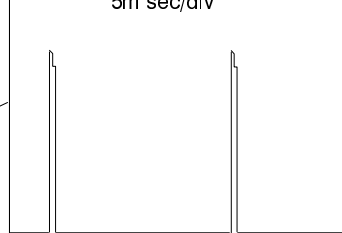
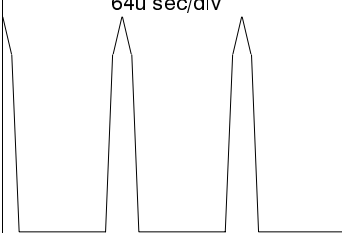
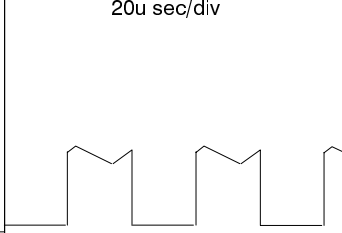
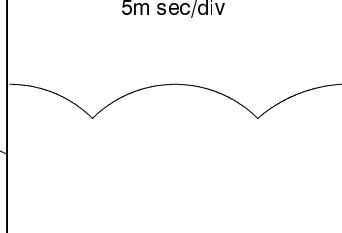
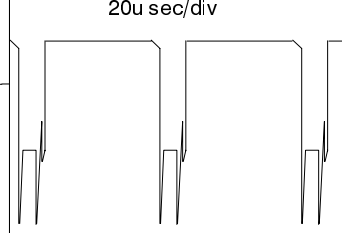
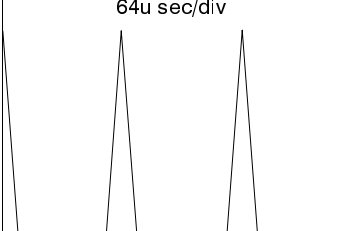
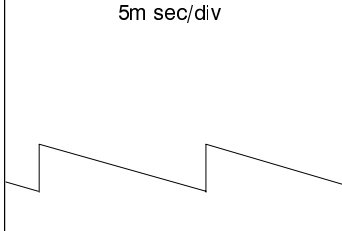
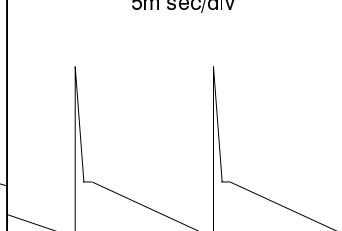
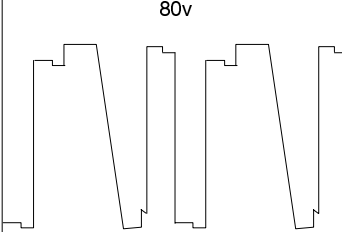
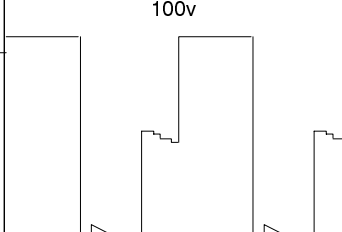
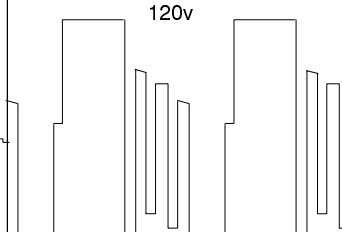
(The figures used below are nominal and used for representative purposes only)

Alignment Function		Settings / Special features
1. Vertical amplitude	V-AMP 051	Optimum setting
2. Vertical symmetry	V-SYM 013	
3. Vertical linearity	V-LIN 012	
4. Vert. D.C.	Vert. D.C. 000	No adjustment
5. V-Pos.	V. Pos. 003	Optimum setting
6. Horizontal amplitude	H-AMP -033	Optimum setting
7. Horizontal position	H-POS 049	
8. Text Position	TEXT POSITION 045	Optimum setting
9. EW-amplitude	E-W-AMP 1 -058	Optimum setting
10. EW-amplitude	E-W-AMP 2 023	Optimum setting
11. Trapezium-comp	TRAPEZ-1 -014	Optimum setting
12. Trapezium- comp	TRAPEZ-2 012	Optimum setting
13. Colour VCO	Colour VCO 015	Optimum setting
14. Cut-off DC	Cut-off DC 050	No adjustment
15. Ug2 Test	Ug 2 Test 107 021 023	Select Cutoff DC in ServiceMode and confirm the value is 128. Select Ug 2 Test noting colour with largest value, adjust on FBT until a colour reaches 20 ~ 30. Connect an oscilloscope to the cathode of the biggest value colour, select Cutoff DC mode and adjust get Cutoff pulse voltage to 159±5V. Disconnect the oscilloscope and adjust the screen to whichever colour reaches 70±30 first.
16. Cutoff	Cutoff 045 055 050	Press the GREEN button to step through the settings. Adjust for optimum.
17. White	White 224 255 237	Press the GREEN button to step through the settings. Adjust for optimum.

## RÉGLAGES (Les figures ci-dessous sont fictives et utilisées uniquement à des fins représentatives)

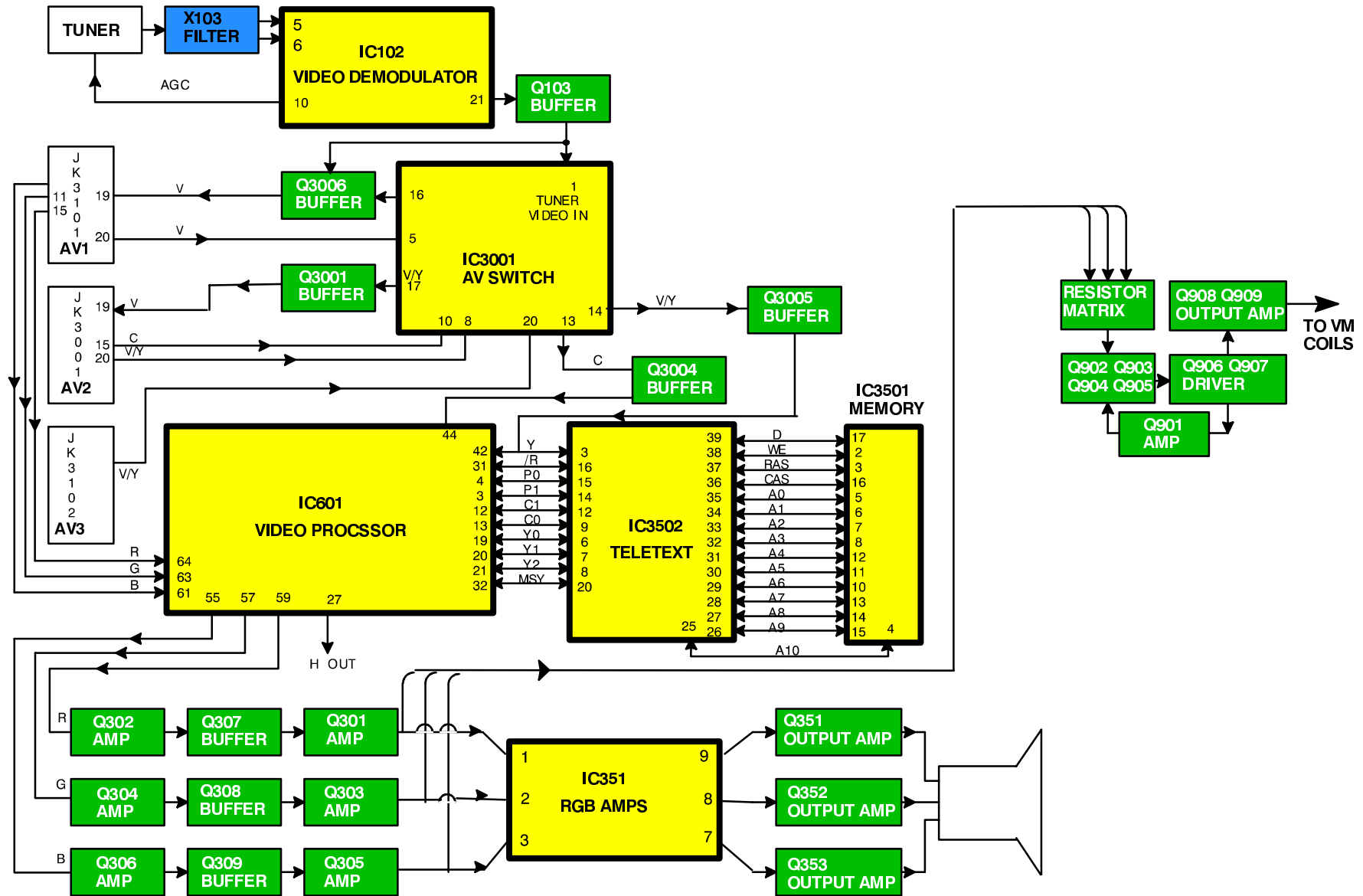
Fonctions		Réglages/Points particuliers
1. Amplitude verticale	V-AMP 051	Optimiser les réglages
2. Symétric verticale	V-SYM 013	
3. Linèarité verticale	V-LIN 012	
4. Vert. DC.	Vert. D.C., 000	Ne pas régler
5. V-Pos.	V. Pos. 003	Optimiser les réglages
6. Amplitude horizontal	H-AMP -033	Optimiser les réglages
7. Centrage horizontal	H-POS 049	
8. Text Position	TEXT POSITION 045	Optimiser les réglages
9. Amplitude E.O.	E-W-AMP 1 -058	Optimiser les réglages
10. Amplitude E.O.	E-W-AMP 2 023	Optimiser les réglages
11. Correction trapèze	TRAPEZ-1 -014	Optimiser les réglages
12. Correction trapèze	TRAPEZ-2 012	Optimiser les réglages
13. Réglage oscillateur sous porteuse	Colour VCO 015	Régler la fréquence
14. Cut-off DC	Cut-off DC 050	Ne pas régler
15. Ug2 Test	Ug 2 Test 107 021 023	Sélectionner le Mode Cutoff DC. Confirmer que la valeur soit 128 puis sélectionner le Mode Test Ug2 et noter la valeur de la couleur la plus élevée. Ajuster le réglage situé sur le FBT jusqu'à ce que la valeur d'une des couleurs se situe entre 20 et 30. Relier l'oscilloscope sur la cathode dont la valeur de la couleur est la plus élevée. Sélectionner le mode CUTOFF DC et régler l'impulsion de CUTOFF à $159V \pm 5V$ . Retirer l'oscilloscope et régler la tension d'écran à $70 \pm 30$ sur la première couleur atteignant cette valeur.
16. Cutoff	Cutoff 045 055 050	Appuyer sur la touche VERTE pour accéder aux réglages. Régler pour optimiser.
17. White	White 224 255 237	Appuyer sur la touche VERTE pour accéder aux réglages. Régler pour optimiser.

## WAVEFORM PATTERN TABLE TABLEAU DE MIRES DE FORMA D'ONDES

<p>PIN 42 I601 10u sec/div</p> 	<p>PIN 6 E8 50u sec/div</p> 	<p>PIN 5 E8 10u sec/div</p> 	<p>PIN 3 E8 10u sec/div</p> 
<p>PIN 4 E8 10u sec/div</p> 	<p>PIN 44 IC601 10u sec/div (Chroma)</p> 	<p>PIN 7 IC801 2u sec/div</p> 	<p>PIN 18 T801 5u sec/div</p> 
<p>PIN 6 IC451 5m sec/div</p> 	<p>PIN 3 IC801 5u sec/div</p> 	<p>PIN 6 IC601 5m sec/div</p> 	<p>PIN 34 IC601 5m sec/div</p> 
<p>COLLECTOR Q551 64u sec/div</p> 	<p>BASE Q503 20u sec/div</p> 	<p>PIN 7 IC701 5m sec/div</p> 	<p>BASE Q551 20u sec/div</p> 
<p>PIN 8 IC701 64u sec/div</p> 	<p>PIN 1 IC451 5m sec/div</p> 	<p>PIN 5 IC451 5m sec/div</p> 	
<p>RED DRIVE EMITTER Q351 80v</p> 	<p>GREEN DRIVE EMITTER Q352 100v</p> 	<p>BLUE DRIVE EMITTER Q353 120v</p> 	

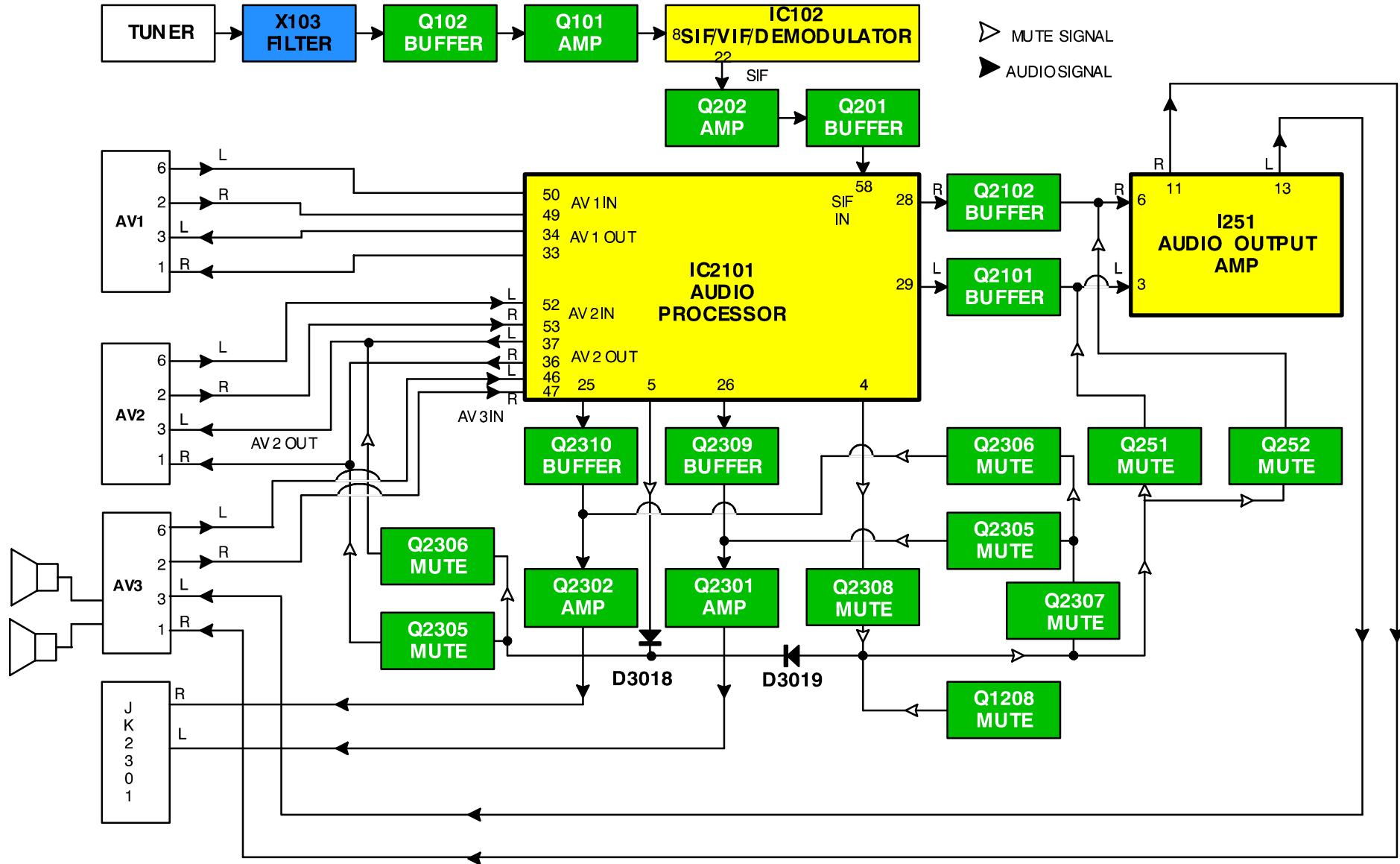
# VIDEO BLOCK DIAGRAM

# SYNOPTIQUE VIDEO



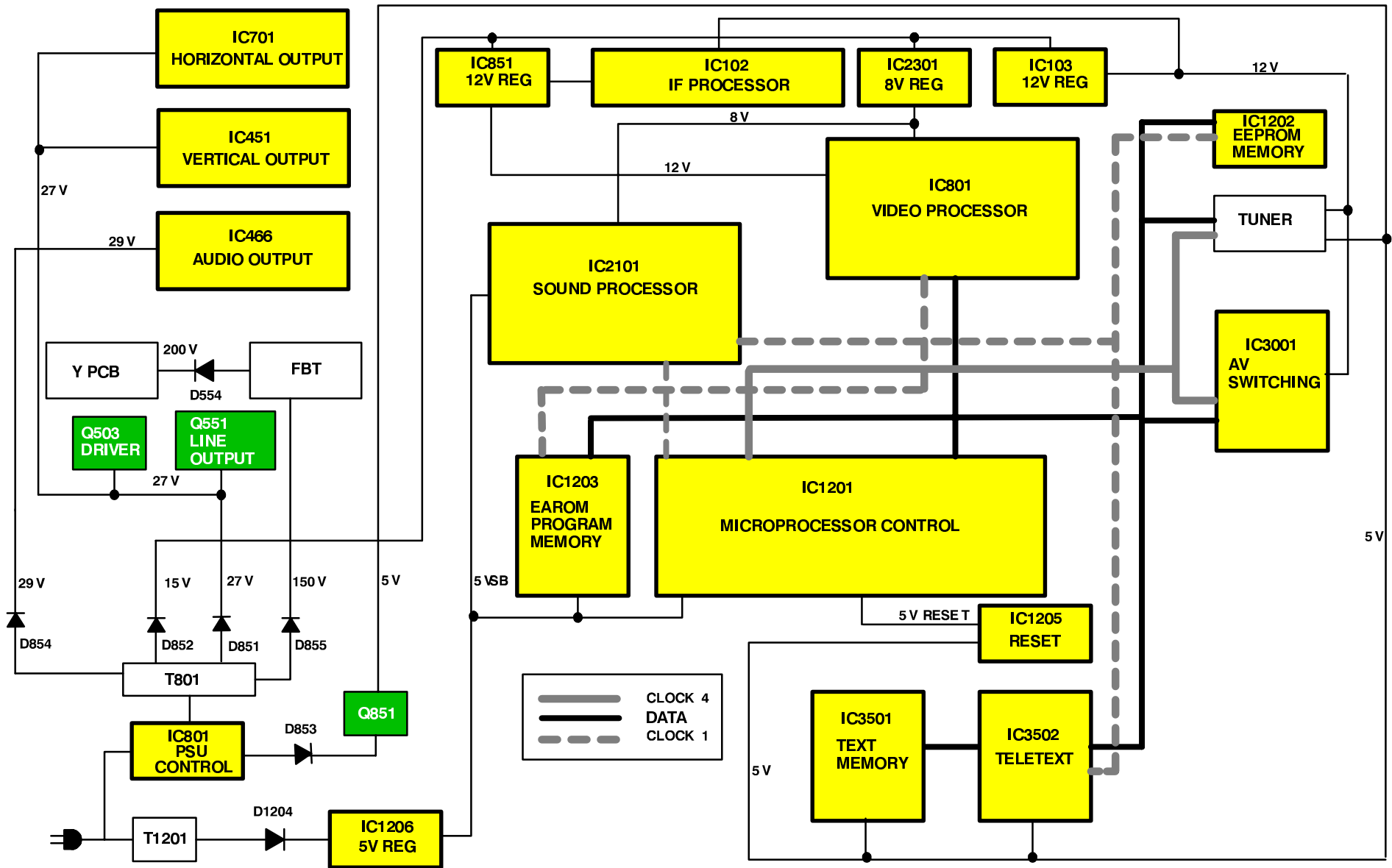
# AUDIO BLOCK DIAGRAM

# SYNOPTIQUE AUDIO





# POWER SUPPLY AND CONTROL BLOCK DIAGRAM ALIMENTATION ET SYNOPTIQUE DE COMMANDE



## PARTS LOCATION

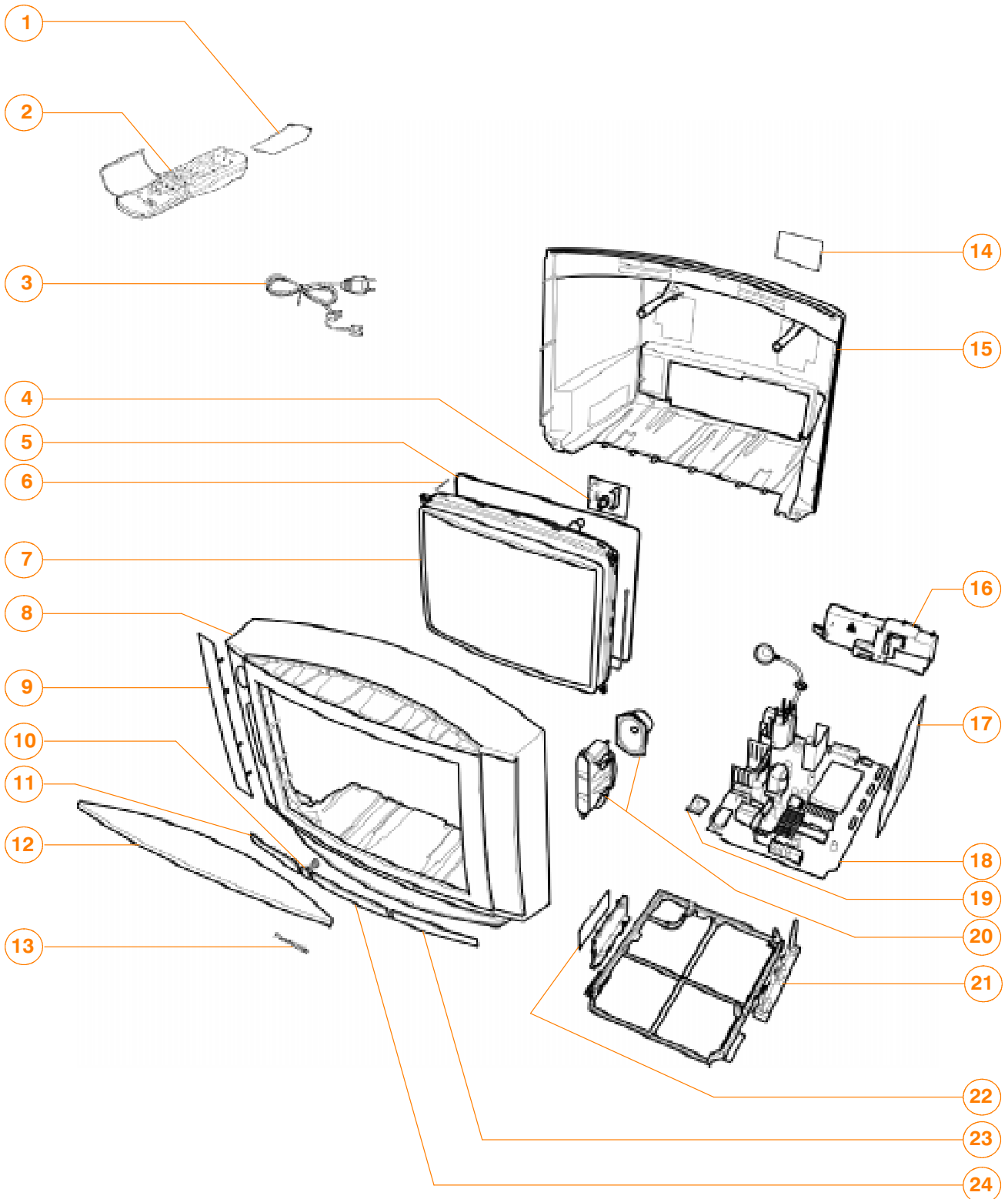
### NOTE :

The numbers on the exploded view below refer to the miscellaneous section of the Replacement Parts List.

## EMPLACEMENT DES PIÈCES

### REMARQUE :

Les numéros sur les pièces mécaniques indiquent les NO. de réf. de la liste des pièces de rechange.



## REPLACEMENT PARTS LIST

### Important Safety Notice

Components identified by ▲ mark have special characteristics important for safety. When replacing any of these components, use only manufacturer's specified parts.

## COMMON PARTS FOR MODELS TX-28XD3F AND TX-25XD3F

## LISTE DES PIÈCES DE RECHANGE

### Remarque importante pour la sécurité

Les éléments portant la indication ▲ possèdent des caractéristiques de sécurité spéciales. Lors du remplacement de l'une quelconque des ces pièces, n'utiliser que celles spécifiées par la fabricant.

Ref No.	Part No.	Description
<b>MISCELLANEOUS COMPONENTS</b>		
1)	UR51EC780	BATTERY COVER (REMOTE)
2)	EUR51920	REMOTE CONTROL
3)	TSX8E0020	POWER CORD ▲
4)	TNP117070AT	Y.P.C.B. ▲
5)	*****	REFER TO DIFFERENCE LIST
6)	VP17005-32	CRT FIXING SCREW
7)	*****	REFER TO DIFFERENCE LIST
8)	*****	REFER TO DIFFERENCE LIST
9)	*****	REFER TO DIFFERENCE LIST
10)	*****	REFER TO DIFFERENCE LIST
11)	*****	REFER TO DIFFERENCE LIST
12)	*****	REFER TO DIFFERENCE LIST
13)	TBM8E1728	PANASONIC BADGE
14)	*****	REFER TO DIFFERENCE LIST
15)	*****	REFER TO DIFFERENCE LIST
16)	TKP8E1165	AV COVER
17)	TNP8EB007AB	B PCB ▲
18)	*****	REFER TO DIFFERENCE LIST
19)	TNP8EN014AA	N.P.C.B. ▲
20)	EAG1216A2	SPEAKER
21)	TMX8E010	CHASSIS BRACKET
22)	TNP8EP013AB	P.P.C.B. ▲
23)	*****	REFER TO DIFFERENCE LIST
24)	*****	REFER TO DIFFERENCE LIST
	TQB8E2300A	GERMAN INST BOOK
	TQB8E2300B	DUTCH INST BOOK
	TQB8E2300C	ITALIAN INST BOOK
	TQB8E2300D	FRENCH INST BOOK
	TQB8E2300E	SPANISH INST BOOK
	ENG29501G	TUNER
	UM-3DEP-2P	BATTERY
	TBM8E1615	PRESET LABEL
	TEK6940	LID CATCHER
	TES8E015	POWER BUTTON SPRING
	TMW8E020	LED HOLDER
	TMW8E020-1	LED HOLDER
	31221212478	FIX CLIP
	TES4537	SPRING
	F9-4-220	RELAY
	SVM100	COIL
	ERC12GK825	SOLID 0.5W 10% 8M2Ω
<b>INTEGRATED CIRCUITS</b>		
IC100	TSA5514AT/C2	A.F.C.CONTROL
IC103	L78M09MRB	9V REGULATOR
IC251	LA4280-TV	AUDIO OUTPUT
IC351	TDA6103Q-N3	R.G.B.AMPLIFIER
IC451	LA7845N	VERTICAL OUTPUT
IC601	VDP3108APPA1	VIDEO PROCESSOR
IC701	TEA2031A	HORIZONTAL OUTPUT
IC801	TDA4601	POWER SUPPLY
IC851	L78M12MRB	12V REGULATOR
IC1061	RPM-637CBRL	LED RECEIVER
IC1201	CCU30001-07	CENTRAL CONTROL UNIT
IC1205	MN1280R	RESET
IC2101	MSP3410BPPF7	AUDIO PROCESSOR

Ref No.	Part No.	Description
IC2301	AN78L08TA	8V REGULATOR
IC3001	TEA6415C	VIDEO SWITCH
IC3501	UD61256DC-08	DYNAMIC RAM
IC3502	TPU3040-20	TEXT PROCESSOR
<b>CAPACITORS</b>		
C100	ECUV1H104ZFX	S.M.CAP 50V 100nF
C101	ECUV1H104ZFX	S.M.CAP 50V 100nF
C102	ECUV1H104ZFX	S.M.CAP 50V 100nF
C103	ECUV1H104ZFX	S.M.CAP 50V 100nF
C104	ECUV1H104ZFX	S.M.CAP 50V 100nF
C107	ECUV1H104ZFX	S.M.CAP 50V 100nF
C124	ECEA1CKA470	ELECT 16V 47μF
C130	ECEA1CKA470	ELECT 16V 47μF
C135	ECUV1H103ZFX	S.M.CAP 50V 10nF
C136	ECA1CM100GB	ELECT 16V 10pF
C137	ECA1EM101GB	ELECT 25V 1μF
C138	ECUV1H103ZFX	S.M.CAP 50V 10nF
C139	ECUV1H390JCX	S.M.CAP 50V 39pF
C140	ECUV1H390JCX	S.M.CAP 50V 39pF
C141	ECUV1H103ZFX	S.M.CAP 50V 10nF
C144	ECA1HMR33GB	ELECT 50V 0.33μF
C145	ECUV1H103ZFX	S.M.CAP 50V 10nF
C146	ECUV1H104ZFX	S.M.CAP 50V 100nF
C147	ECUV1H102KBX	S.M.CAP 50V 1nF
C148	ECEA1HKAR22	ELECT 50V 0.22μF
C149	ECA1EM470GB	ELECT 25V 47pF
C150	ECUV1H103ZFX	S.M.CAP 50V 10nF
C151	ECUV1H104ZFX	S.M.CAP 50V 100nF
C154	ECA1CM221GB	ELECT 16V 220pF
C170	ECUV1H331KBX	S.M.CAP 50V 330pF
C201	ECUV1H070DCX	S.M.CAP 50V 7pF
C202	ECUV1H070DCX	S.M.CAP 50V 7pF
C203	ECUV1H470JX	S.M.CAP 50V 47pF
C204	ECUV1H560JCX	S.M.CAP 50V 56pF
C205	ECUV1H560JCX	S.M.CAP 50V 56pF
C207	ECUV1H560JCX	S.M.CAP 50V 56pF
C209	ECUV1H104ZFX	S.M.CAP 50V 100nF
C210	ECUV1H103ZFX	S.M.CAP 50V 10nF
C211	ECUV1H104ZFX	S.M.CAP 50V 100nF
C251	ECA1EM330B	ELECT 25V 33pF
C253	ECA1HM4R7GB	ELECT 50V 4.7μF
C254	222236516474	FILM 160V 470nF
C255	ECEA1EGE101	ELECT 25V 100μF
C257	ECA1HM4R7GB	ELECT 50V 4.7μF
C258	ECA1EM330B	ELECT 25V 33pF
C259	222236516474	FILM 160V 470nF
C260	ECA1VM102GE	ELECT 35V 1nF
C261	ECA1VM102GE	ELECT 35V 1nF
C262	222236516394	FILM 160V 390nF
C263	ECA1HM010GB	ELECT 50V 1pF
C264	ECEA1HGE222	ELECT 50V 2200μF
C265	222236516394	FILM 160V 390nF
C266	ECA1HM010GB	ELECT 50V 1pF
C267	ECUV1H104KBX	S.M.CAP 50V 100nF
C268	ECUV1H104KBX	S.M.CAP 50V 100nF
C271	ECUV1H561KBX	S.M.CAP 50V 560pF
C301	ECA1CM470GB	ELECT 16V 47μF
C302	ECUV1H104ZFX	S.M.CAP 50V 100nF
C303	ECUV1H104ZFX	S.M.CAP 50V 100nF

Ref No.	Part No.	Description			
C310	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C354	ECQM2104KZ	FILM	250V	100nF	
C355	ECUV1H222JCX	S.M.CAP	50V	2.2nF	
C356	ECUV1H222JCX	S.M.CAP	50V	2.2nF	
C357	ECUV1H222JCX	S.M.CAP	50V	2.2nF	
C358	222236516224	FILM	160V	220nF	
C360	ECKC3D152J	CERAMIC	2KV	1.5nF	▲
C361	ECA1HMR47GB	ELECT	50V	0.47µF	
C364	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C366	ECA1CM100GB	ELECT	16V	10pF	
C451	ECUV1H102JX	S.M.CAP	50V	1nF	
C452	ECUV1H102ZFX	S.M.CAP	50V	1nF	
C453	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C454	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C455	ECEA1VGE222	ELECT	35V	2200µF	
C456	ECEA1HGE221	ELECT	50V	220µF	
C457	ECUV1H223KBX	S.M.CAP	50V	22nF	
C458	ECQM1H273J	FILM	50V	27nF	
C459	222236516224	FILM	160V	220nF	
C460	222236516105	FILM	160V	1µF	
C462	ECEA1VGE332	ELECT	35V	3300µF	
C501	ECA1AM330GB	ELECT	10V	33pF	
C506	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C508	222236516105	FILM	160V	1µF	
C509	ECEA1HGE101	ELECT	50V	100µF	
C510	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C511	ECQM2683JZ	FILM	250V	68nF	
C551	222237544182	FILM		1.8nF	
C552	ECWH15H102H	FILM	1500V	100pF	
C554	ECWF2H514J	FILM	500V	510nF	▲
C555	ECWH12H103J	FILM	1250V	10nF	▲
C556	ECQM4333JC	FILM	400V	33nF	
C559	ECWF2H684J	FILM	500V	680nF	▲
C560	ECEA2GGE2R2	ELECT	400V	2.2µF	
C562	ECKC2H101J	CERAMIC	500V	100pF	▲
C563	ECEA2EU220	ELECT	250V	22µF	
C564	ECEA2AU2R2	ELECT	100V	2.2µF	
C565	ECQP1H273J	FILM	100V	2700µF	
C601	ECUV1H271JCX	S.M.CAP	50V	270pF	
C602	ECUV1H121JCX	S.M.CAP	50V	120pF	
C603	ECUV1H471JCX	S.M.CAP	50V	470pF	
C604	ECA0JM102GB	ELECT	6.3V	1nF	
C605	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C606	ECUV1H040CCX	S.M.CAP	50V	4pF	
C607	ECUV1H040CCX	S.M.CAP	50V	4pF	
C608	ECUV1H683ZFX	S.M.CAP	50V	68nF	
C609	ECA1CM470GB	ELECT	16V	47µF	
C610	ECUV1H683ZFX	S.M.CAP	50V	68nF	
C611	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C612	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C613	ECUV1H102JCX	S.M.CAP	50V	1nF	
C614	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C615	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C616	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C618	ECUV1H473ZFX	S.M.CAP	50V	47nF	
C619	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C620	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C621	ECA1CM100GB	ELECT	16V	10pF	
C622	ECA1CM100GB	ELECT	16V	10pF	
C623	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C624	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C625	ECEA1HNR47	ELECT	50V	0.47µF	
C626	ECA0JM102GB	ELECT	6.3V	1nF	
C627	ECUV1H100DCX	S.M.CAP	50V	10pF	
C628	ECUV1H470JCX	S.M.CAP	50V	47pF	
C629	ECUV1H101JCX	S.M.CAP	50V	100pF	
C630	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C631	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C632	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C633	ECUV1H102JCX	S.M.CAP	50V	1nF	
C636	ECUV1H101JCX	S.M.CAP	50V	100pF	
C637	ECUV1H102KBX	S.M.CAP	50V	1nF	

Ref No.	Part No.	Description			
C638	ECUV1H181JCX	S.M.CAP	50V	180pF	
C639	ECUV1H561KBX	S.M.CAP	50V	560pF	
C701	ECEA1HGE101	ELECT	50V	100µF	
C702	ECUV1H103KBX	S.M.CAP	50V	10nF	
C703	ECEA1HGE100	ELECT	50V	10µF	
C704	ECQB1H223K	FILM	50V	22nF	
C705	ECQB1H102J	FILM	50V	1nF	
C801	ECUV1H101JCX	S.M.CAP	50V	100pF	
C802	ECQE6104K	FILM	600V	100nF	▲
C803	ECUV1H560JX	S.M.CAP	50V	56pF	
C804	ECA1HM101GB	ELECT	50V	100pF	
C805	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C806	ECEA1HU101	ELECT	50V	100µF	
C807	ECEA1EGE101	ELECT	25V	100µF	
C808	ECQB1H103J	FILM	50V	10nF	
C809	ECQB1H103J	FILM	50V	10nF	
C811	ECEA1HN010	ELECT	50V	1µF	
C815	ECKC2H472J	CERAMIC	500V	4.7nF	▲
C816	ECKC3D222JB	CERAMIC	2KV	2200pF	▲
C817	ECQB1H223K	FILM	50V	22nF	
C818	ECKC2H472J	CERAMIC	500V	4.7nF	▲
C820	ECOS2GG181NG	ELECT	400V	180µF	▲
C821	ECKWNA332MECC	CERAMIC	250V	3.3nF	
C841	222233510224	FILM		0.22µF	
C851	ECKC2H681J	CERAMIC	500V	680pF	▲
C852	ECEA1HU102	ELECT	50V	1000µF	
C853	ECEA1EGE222	ELECT	25V	2200µF	
C854	ECEA1HGE102	ELECT	50V	1000µF	
C855	ECKC3D471JB	CERAMIC	2KV	470pF	▲
C856	ECEA1EGE222	ELECT	25V	2200µF	
C857	ECEA2EU101	ELECT	250V	100µF	
C858	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C859	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C860	ECA1CM471GB	ELECT	16V	470pF	
C861	ECOS2EA221AB	ELECT	250V	220µF	
C862	ECA1CM471GB	ELECT	16V	470pF	
C901	ECUV1H030CCX	S.M.CAP	50V	30pF	
C902	ECA1VM101GB	ELECT	35V	100pF	
C903	ECA1CM470GB	ELECT	16V	47µF	
C904	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C905	ECA1HM4R7GB	ELECT	50V	4.7µF	
C906	ECUV1H471KBX	S.M.CAP	50V	470pF	
C907	ECUV1H271JCX	S.M.CAP	50V	270pF	
C908	ECUV1H151JCX	S.M.CAP	50V	150pF	
C909	ECKC2H472J	CERAMIC	500V	4.7nF	▲
C910	ECKC2H472J	CERAMIC	500V	4.7nF	▲
C911	ECUV1H151JCX	S.M.CAP	50V	150pF	
C912	ECEA2CU100	ELECT	160V	10µF	
C913	ECA1HM101GB	ELECT	50V	100pF	
C914	ECA1HM101GB	ELECT	50V	100pF	
C915	ECA1CM471GB	ELECT	16V	470pF	
C916	ECEA2CU100	ELECT	160V	10µF	
C1061	ECA0JM101G	ELECT	6.3V	100pF	
C1062	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1201	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1202	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1203	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1204	ECUV1H332KBX	S.M.CAP	50V	3.3nF	
C1205	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1206	ECA1HM4R7GB	ELECT	50V	4.7µF	
C1207	ECUV1H472KBX	S.M.CAP	50V	4.7nF	
C1208	ECUV1H390JCX	S.M.CAP	50V	39pF	
C1209	ECUV1H390JCX	S.M.CAP	50V	39pF	
C1210	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1211	ECUV1H470JCX	S.M.CAP	50V	47pF	
C1212	ECA1CM470GB	ELECT	16V	47µF	
C1213	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1214	ECA1CM470GB	ELECT	16V	47µF	
C1215	ECUV1H103ZFX	S.M.CAP	50V	10nF	
C1217	ECUV1H104ZFX	S.M.CAP	50V	100nF	
C1219	ECA1CM471GB	ELECT	16V	470pF	
C1220	ECUV1H103ZFX	S.M.CAP	50V	10nF	

Ref No.	Part No.	Description		
C1221	ECA0JM102GB	ELECT	6.3V	1nF
C1222	ECUV1H104ZFX	S.M.CAP	50V	100nF
C1223	ECA1HM101GB	ELECT	50V	100pF
C1224	ECA0JM222GB	ELECT	6.3V	2.2nF
C1225	ECA0JM472GE	ELECT	6.3V	4.7nF
C1226	ECA1HM101GB	ELECT	50V	100pF
C1227	ECA1VM221B	ELECT	35V	220pF
C1228	ECA1EM101GB	ELECT	25V	1µF
C2101	ECUV1H223KBX	S.M.CAP	50V	22nF
C2102	ECUV1H391KBX	S.M.CAP	50V	390pF
C2103	ECUV1H102KBX	S.M.CAP	50V	1nF
C2104	ECUV1H102KBX	S.M.CAP	50V	1nF
C2107	ECUV1H391KBX	S.M.CAP	50V	390pF
C2108	ECA1HM101GB	ELECT	50V	100pF
C2109	ECUV1H223KBX	S.M.CAP	50V	22nF
C2110	ECA1CM100GB	ELECT	16V	10pF
C2111	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2112	ECA1CM100GB	ELECT	16V	10pF
C2113	ECUV1H102KBX	S.M.CAP	50V	1nF
C2114	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2115	ECUV1H471KBX	S.M.CAP	50V	470pF
C2116	ECA1HM3R3GB	ELECT	50V	3.3µF
C2117	ECUV1H471KBX	S.M.CAP	50V	470pF
C2118	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2119	ECA1CM100GB	ELECT	16V	10pF
C2120	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2121	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2123	ECA1CM100GB	ELECT	16V	10pF
C2124	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2125	ECUV1H010CCX	S.M.CAP	50V	1pF
C2126	ECUV1H010CCX	S.M.CAP	50V	1pF
C2127	ECA1CM100GB	ELECT	16V	10pF
C2128	ECUV1H683ZFX	S.M.CAP	50V	68nF
C2129	ECQM1H334J	FILM	50V	330nF
C2307	ECA1CM470GB	ELECT	16V	47µF
C2308	ECA1CM470GB	ELECT	16V	47µF
C2310	ECA1CM470GB	ELECT	16V	47µF
C2312	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2313	ECUV1H103KBX	S.M.CAP	50V	10nF
C2314	ECUV1H104ZFX	S.M.CAP	50V	100nF
C2315	ECUV1H103KBX	S.M.CAP	50V	10nF
C2316	ECUV1H103ZFX	S.M.CAP	50V	10nF
C2317	ECA1CM470GB	ELECT	16V	47µF
C2318	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C2319	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C2651	ECUV1H103KBX	S.M.CAP	50V	10nF
C2652	ECUV1H103KBX	S.M.CAP	50V	10nF
C3001	ECA1HMR47GB	ELECT	50V	0.47µF
C3002	ECA1HMR47GB	ELECT	50V	0.47µF
C3003	ECA1EM4R7GB	ELECT	25V	4.7µF
C3004	ECA1HM4R7GB	ELECT	50V	4.7µF
C3005	ECA1HM4R7GB	ELECT	50V	4.7µF
C3006	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3007	ECA1HM470GB	ELECT	50V	47µF
C3011	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3012	ECA1CM470GB	ELECT	16V	47µF
C3013	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3014	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3017	ECEA1CN470	ELECT	16V	47µF
C3018	ECUV1H102KBX	S.M.CAP	50V	1nF
C3019	ECUV1H102KBX	S.M.CAP	50V	1nF
C3020	ECCR1H120J	CERAMIC	50V	12pF
C3021	ECUV1H102KBX	S.M.CAP	50V	1nF
C3023	ECA1CM470GB	ELECT	16V	47µF
C3024	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3025	ECUV1H102KBX	S.M.CAP	50V	1nF
C3026	ECA1CM470GB	ELECT	16V	47µF
C3027	ECA1CM470GB	ELECT	16V	47µF
C3028	ECUV1H221JX	S.M.CAP	50V	220pF
C3029	ECUV1H221JX	S.M.CAP	50V	220pF
C3030	ECUV1H221JX	S.M.CAP	50V	220pF
C3031	ECUV1H221JX	S.M.CAP	50V	220pF

Ref No.	Part No.	Description		
C3032	ECA1HMR47GB	ELECT	50V	0.47µF
C3033	ECA1HMR47GB	ELECT	50V	0.47µF
C3034	ECUV1H221JX	S.M.CAP	50V	220pF
C3035	ECUV1H221JX	S.M.CAP	50V	220pF
C3036	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3037	ECUV1H561JCX	S.M.CAP	50V	560pF
C3038	ECA1CM470GB	ELECT	16V	47µF
C3039	ECA1CM470GB	ELECT	16V	47µF
C3040	ECA1HMR47GB	ELECT	50V	0.47µF
C3041	ECA1HMR47GB	ELECT	50V	0.47µF
C3043	ECA1HM4R7GB	ELECT	50V	4.7µF
C3045	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3049	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3050	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3051	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3052	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3053	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3054	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3055	ECUV1H222KBX	S.M.CAP	50V	2.2nF
C3056	ECUV1H101JCX	S.M.CAP	50V	100pF
C3062	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3071	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3151	ECUV1H561JCX	S.M.CAP	50V	560pF
C3152	ECUV1H561JCX	S.M.CAP	50V	560pF
C3501	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3502	ECA1HM101GB	ELECT	50V	100pF
C3503	ECUV1H103ZFX	S.M.CAP	50V	10nF
C3504	ECUV1H102JCX	S.M.CAP	50V	1nF
C3505	ECUV1H104ZFX	S.M.CAP	50V	100nF
C3506	ECA1CM470GB	ELECT	16V	47µF
C3507	ECA1CM470GB	ELECT	16V	47µF
C3508	ECUV1H473ZFX	S.M.CAP	50V	47nF
C3509	ECUV1H103ZFX	S.M.CAP	50V	10nF
C3510	ECA0JM102GB	ELECT	6.3V	1nF
C3511	ECUV1H103ZFX	S.M.CAP	50V	10nF

## DIODES

D140	MA3020TX	DIODE
D141	MA3020TX	DIODE
D251	MA2180TP	DIODE
D253	RB721Q40T77	DIODE
D254	RB721Q40T77	DIODE
D310	MA165TA5	DIODE 1SS133T-77
D311	MA29TA5	DIODE
D312	MA29TA5	DIODE
D354	ERA22-04V1	DIODE
D355	ERA22-04V1	DIODE
D356	ERA22-04V1	DIODE
D357	MA165TA5	DIODE 1SS133T-77
D358	MA165TA5	DIODE 1SS133T-77
D359	MA165TA5	DIODE 1SS133T-77
D360	MA4150	DIODE
D451	MA165TA5	DIODE 1SS133T-77
D452	MA165TA5	DIODE 1SS133T-77
D454	ERA15-02V3	DIODE
D456	MA2160BLFS	DIODE
D470	MA4020	DIODE
D501	MA165TA5	DIODE 1SS133T-77
D502	EU02	DIODE
D551	ERD07-15L7	DIODE
D552	TVSRU2AM	DIODE
D554	AU02V0	DIODE
D556	MA166TA5	DIODE
D601	MA165TA5	DIODE 1SS133T-77
D602	MA165TA5	DIODE 1SS133T-77
D604	MA165TA5	DIODE 1SS133T-77
D605	MA165TA5	DIODE 1SS133T-77
D606	MA165TA5	DIODE 1SS133T-77
D609	MA167TA5	DIODE
D701	MA165TA5	DIODE 1SS133T-77
D702	MTZJT-775.6C	DIODE

Ref No.	Part No.	Description
D707	MTZJT-775.6C	DIODE
D804	ERA15-02V3	DIODE
D805	EU02	DIODE
D806	RBV4-08	DIODE
D807	EU02	DIODE
D809	MA165TA5	DIODE 1SS133T-77
D814	MA165TA5	DIODE 1SS133T-77
D851	EU02	DIODE
D852	ERD32-02L7	DIODE
D853	FML22SLF610	DIODE
D854	RU4AMLF-M1	DIODE
D855	RU4BLF-L1	DIODE
D856	MTZJT-775.1A	DIODE
D857	MTZJ33B	DIODE
D858	MA29TA5	DIODE
D901	MA165TA5	DIODE 1SS133T-77
D902	MA165TA5	DIODE 1SS133T-77
D904	MA165TA5	DIODE 1SS133T-77
D906	RLS72TE-11	DIODE OR PMLL4148
D1203	MA170	DIODE
D1204	SLR56UR3FLF	LED
D1205	MA165TA5	DIODE 1SS133T-77
D1206	MTZJT-778.2C	DIODE
D1207	MA165TA5	DIODE 1SS133T-77
D1208	MA165TA5	DIODE 1SS133T-77
D1209	MA165TA5	DIODE 1SS133T-77
D1210	MA165TA5	DIODE 1SS133T-77
D1211	MTZJT-775.1C	DIODE
D1212	MA170	DIODE
D1213	MA165TA5	DIODE 1SS133T-77
D1214	MA170	DIODE
D1216	MTZJT-778.2C	DIODE
D2303	MA165TA5	DIODE 1SS133T-77
D2304	MTZJT-779.1C	DIODE
D3001	MTZJT-7712C	DIODE
D3003	MTZJT-778.2C	DIODE
D3004	MA4100	DIODE
D3005	MTZJT-7712C	DIODE
D3006	MTZJT-7712C	DIODE
D3007	MTZJT-7712C	DIODE
D3008	MTZJT-778.2C	DIODE
D3009	MTZJT-778.2C	DIODE
D3010	MTZJT-778.2C	DIODE
D3011	MTZJT-778.2C	DIODE
D3012	MTZJT-7712C	DIODE
D3013	MTZJT-7712C	DIODE
D3014	MTZJT-7712C	DIODE
D3015	MTZJT-7712C	DIODE
D3016	MTZJT-7712C	DIODE
D3018	MA165TA5	DIODE 1SS133T-77
D3019	MA165TA5	DIODE 1SS133T-77
D3501	MA165TA5	DIODE 1SS133T-77
<b>FUSES</b>		
F840	2153.15H	FUSE
F851	TR5-T1250	FUSE
F852	TR5-T2000	FUSE
F853	TR5-T2000	FUSE
F8401	EYF52BC	FUSE HOLDER
F8402	EYF52BC	FUSE HOLDER
<b>SOCKETS</b>		
H1202	832AG11D-ESL	I.C.SOCKET

Ref No.	Part No.	Description
<b>TERMINALS AND LINKS</b>		
JA.1	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.1	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.10	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.11	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.12	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.14	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.15	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.16	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.17	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.18	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.19	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.2	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.2	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.20	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.21	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.22	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.24	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.25	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.26	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.27	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.28	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.29	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.3	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.30	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.4	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.5	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.6	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.7	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA.8	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA.9	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA33	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA34	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JA35	ERJ8GEY0R00	S.M.CAR .125W 5% 0Ω
JA36	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB1	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB10	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB11	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB12	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB13	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB14	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB15	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB16	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB17	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB18	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB19	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB2	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB20	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB21	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB22	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB23	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB24	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB25	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB26	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB27	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB28	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB29	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB3	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB30	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB31	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB32	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB33	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB34	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB35	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB36	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB37	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB38	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB39	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB40	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
JB41	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω

Ref No.	Part No.	Description			
JB42	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB43	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB44	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB45	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB46	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB47	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB48	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB49	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB50	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB51	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB52	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB53	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB54	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB55	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB56	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB57	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB58	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB59	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB6	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB61	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB62	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB63	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB64	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB65	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB66	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB67	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB68	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB69	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB7	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB70	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB71	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB72	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB73	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB74	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB75	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB77	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB79	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB8	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB80	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB81	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JB9	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JK2301	TJB18644	AV TERMINAL			
JK3001	TJS8E007	21PIN TERMINAL			
JK3101	TJS8E007	21PIN TERMINAL			
JK3102	TJB16673	AV TERMINAL			
JSB1	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSB12	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSB13	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSB14	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSB2	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSB4	EXCELSA35T	COIL			
JSE011	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE012	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE013	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE014	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE015	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE016	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE031	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE032	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE035	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
JSE037	ERJ6GEY0R00	S.M.CARB	0.1W	5%	Ω
J104	EXCELSA35T	COIL			
J106	EXCELSA35T	COIL			
J107	EXCELSA35T	COIL			
J169	EXCELSA35T	COIL			
<b>COILS</b>					
L001	TLT100K991R	COIL			
L003	EXCELSA35T	COIL			
L100	TLT181K991R	COIL			

Ref No.	Part No.	Description			
L111	TLT101K991R	COIL			
L112	EXCELSA35T	COIL			
L113	EXCELSA35T	COIL			
L130	ELESN8R2KA	COIL			
L132	ELESN8R2KA	COIL			
L202	TLT068K991R	COIL			
L251	EXCELSA35T	COIL			
L301	TLT047K991R	COIL			
L302	EXCEMT101BT	COIL			
L303	EXCEMT101BT	COIL			
L304	EXCEMT101BT	COIL			
L352	SDL-4101	COIL			
L353	SDL-4101	COIL			
L354	SDL-4101	COIL			
L552	ELH5L437	COIL			
L553	ELC08D055	COIL			
L554	297-23293	COIL			
L601	TLT047K991R	COIL			
L602	EXCELD35V	COIL			
L603	TLT047K991R	COIL			
L604	EXCELD35V	COIL			
L606	TLT015K991R	COIL			
L607	EXCELSA35T	COIL			
L701	ELC10D006	COIL			
L801	EXCELSA24T	COIL			
L802	TLT022K991R	COIL			
L804	ELESN4R7KA	COIL			
L805	298-82858001	COIL			
L841	ELF18D490F	COIL			
L851	EXCELD35V	COIL			
L852	EXCELSA35T	COIL			
L853	ELEIE470KA	COIL			
L854	ELEIN470KA	COIL			
L855	ELEIN470KA	COIL			
L856	ELEIN470KA	COIL			
L901	EXCELSA24T	COIL			
L902	EXCELSA24T	COIL			
L1201	TLT047K991R	COIL			
L1202	TLT047K991R	COIL			
L1203	TLT047K991R	COIL			
L1204	EXCELD35V	COIL			
L2101	TLT100K991R	COIL			
L2102	TLT039K991R	COIL			
L2103	EXCELSA35T	COIL			
L2104	EXCELSA35T	COIL			
L3151	EXCEMT101BT	COIL			
L3152	EXCEMT101BT	COIL			
L3153	EXCEMT101BT	COIL			
L3154	EXCEMT101BT	COIL			
L3155	ELEBT6R8KA	COIL			
L3156	ELEBT6R8KA	COIL			
L3158	EXCELSA39V	COIL			
L3501	EXCELD35V	COIL			
L3502	EXCELD35V	COIL			
L3503	ELESN4R7KA	COIL			
L3504	EXCELSA35T	COIL			
<b>TRANSISTORS</b>					
Q201	BC847B	TRANSISTOR OR 2SD601ATX			
Q202	BC847B	TRANSISTOR OR 2SD601ATX			
Q251	2SD1328STX	TRANSISTOR			
Q252	2SD1328STX	TRANSISTOR			
Q301	BC857B	TRANSISTOR OR 2SB709ATX			
Q302	BC847B	TRANSISTOR OR 2SD601ATX			
Q303	BC857B	TRANSISTOR OR 2SB709ATX			
Q304	BC847B	TRANSISTOR OR 2SD601ATX			
Q305	BC857B	TRANSISTOR OR 2SB709ATX			
Q306	BC847B	TRANSISTOR OR 2SD601ATX			
Q307	BC847B	TRANSISTOR OR 2SD601ATX			
Q308	BC847B	TRANSISTOR OR 2SD601ATX			
Q309	BC847B	TRANSISTOR OR 2SD601ATX			



Ref No.	Part No.	Description
Q310	BC847B	TRANSISTOR OR 2SD601ATX
Q311	BC847B	TRANSISTOR OR 2SD601ATX
Q351	2SA1767	TRANSISTOR
Q352	2SA1767	TRANSISTOR
Q353	2SA1767	TRANSISTOR
Q451	BC847B	TRANSISTOR OR 2SD601ATX
Q501	BC847B	TRANSISTOR OR 2SD601ATX
Q502	BC847B	TRANSISTOR OR 2SD601ATX
Q503	2SD836—AL	TRANSISTOR
Q504	BC847B	TRANSISTOR OR 2SD601ATX
Q551	2SD1577LB	TRANSISTOR
Q552	2SC1473—RN	TRANSISTOR
Q701	BC857B	TRANSISTOR OR 2SB709ATX
Q802	S2000NLBMA	TRANSISTOR
Q851	2SD1273PLB	TRANSISTOR OR 2SD2396/JM3
Q852	TFD312SOF632	DIODE
Q901	BC847B	TRANSISTOR OR 2SD601ATX
Q902	BC847B	TRANSISTOR OR 2SD601ATX
Q903	BC847B	TRANSISTOR OR 2SD601ATX
Q904	BC857B	TRANSISTOR OR 2SB709ATX
Q905	BC847B	TRANSISTOR OR 2SD601ATX
Q906	BC847B	TRANSISTOR OR 2SD601ATX
Q907	BC857B	TRANSISTOR OR 2SB709ATX
Q908	2SB940APLB	TRANSISTOR
Q909	2SD1264APLB	TRANSISTOR
Q1202	BC847B	TRANSISTOR OR 2SD601ATX
Q1205	BC847B	TRANSISTOR OR 2SD601ATX
Q1206	BC847B	TRANSISTOR OR 2SD601ATX
Q1207	BC847B	TRANSISTOR OR 2SD601ATX
Q1208	BC857B	TRANSISTOR OR 2SB709ATX
Q1211	BC547B	TRANSISTOR
Q1212	BC847B	TRANSISTOR OR 2SD601ATX
Q1213	BC847B	TRANSISTOR OR 2SD601ATX
Q2101	BC860B	TRANSISTOR
Q2102	BC860B	TRANSISTOR
Q2301	BC857B	TRANSISTOR OR 2SB709ATX
Q2302	BC857B	TRANSISTOR OR 2SB709ATX
Q2305	2SD1328STX	TRANSISTOR
Q2306	2SD1328STX	TRANSISTOR
Q2307	BC860B	TRANSISTOR
Q2308	BC857B	TRANSISTOR OR 2SB709ATX
Q2309	BC860B	TRANSISTOR
Q2310	BC860B	TRANSISTOR
Q3001	2SC1318—S	TRANSISTOR
Q3004	BC847B	TRANSISTOR OR 2SD601ATX
Q3005	BC847B	TRANSISTOR OR 2SD601ATX
Q3006	2SC1318—S	TRANSISTOR
Q3011	BC857B	TRANSISTOR OR 2SB709ATX
Q3012	2SD1328STX	TRANSISTOR
Q3013	2SD1328STX	TRANSISTOR
<b>RESISTOR</b>		
RL1201	TSE1885—1	TRANSISTOR
R.604	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R.622	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R.925	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R.926	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R100	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R101	ERJ6GEYJ331	S.M.CARB 0.1W 5% 330Ω
R102	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R103	ERJ6GEYJ331	S.M.CARB 0.1W 5% 330Ω
R107	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R109	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R112	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R114	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R117	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R130	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R131	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R132	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R133	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω

Ref No.	Part No.	Description
R134	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R136	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R138	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R201	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R203	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R204	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R205	ERJ6GEYJ391	S.M.CARB 0.1W 5% 390Ω
R206	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R207	ERJ6GEYJ123	S.M.CARB 0.1W 5% 12KΩ
R208	ERJ6GEYJ182	S.M.CARB 0.1W 5% 1K8Ω
R210	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R251	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R252	ERJ6GEYJ272	S.M.CARB 0.1W 5% 2K7Ω
R253	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R254	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R255	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R256	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R257	ERJ6GEYJ100	S.M.CARB 0.1W 5% 10Ω
R258	ERJ6GEYJ272	S.M.CARB 0.1W 5% 2K7Ω
R259	ERJ6GEYJ100	S.M.CARB 0.1W 5% 10Ω
R260	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R261	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R262	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R265	ERD25TJ2R2	CARBON 0.25W 5% 2R2Ω
R266	ERD25TJ2R2	CARBON 0.25W 5% 2R2Ω
R267	ERF7ZK4R7	WOUND 7W 10% 4R7Ω ▲
R271	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R273	ERD25TJ273	CARBON 0.25W 5% 27KΩ
R301	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R302	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R303	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R304	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R305	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R306	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R307	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R308	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R309	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R310	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R311	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R312	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R313	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R314	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3Ω
R315	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3Ω
R316	ERJ6GEYJ332	S.M.CARB 0.1W 5% 3K3Ω
R321	ERJ6GEYJ473	S.M.CARB 0.1W 5% 47KΩ
R322	ERJ6GEYJ473	S.M.CARB 0.1W 5% 47KΩ
R323	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R324	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R351	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R352	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R353	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R354	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R355	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R356	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R357	ERG1FJ683P	METAL 1W 5% 68KΩ ▲
R358	ERG1FJ683P	METAL 1W 5% 68KΩ ▲
R359	ERG1FJ683P	METAL 1W 5% 68KΩ ▲
R363	ERD25TJ103	CARBON 0.25W 5% 10KΩ
R364	ERD25TJ103	CARBON 0.25W 5% 10KΩ
R365	ERD25TJ103	CARBON 0.25W 5% 10KΩ
R366	ERDS1TJ152	CARBON 0.5W 5% 1K5Ω
R367	ERDS1TJ152	CARBON 0.5W 5% 1K5Ω
R368	ERDS1TJ152	CARBON 0.5W 5% 1K5Ω
R369	ERD25TJ203	CARBON 0.25W 5% 20KΩ
R370	ERJ6GEYJ822	S.M.CARB 0.1W 5% 8K2Ω
R372	ERQ12AJ121	FUSIBLE 0.5W 5% 120Ω ▲
R373	ERJ6GEYJ220	S.M.CARB 0.1W 5% 22Ω
R374	ERD25TJ274	CARBON 0.25W 5% 270KΩ
R375	ERJ6GEYJ684	S.M.CARB 0.1W 5% 680KΩ
R376	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R377	ERQ1CJP4R7	FUSIBLE 1W 5% 4R7Ω ▲
R381	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ

Ref No.	Part No.	Description				
R382	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R383	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R451	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R452	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R453	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R455	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R456	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R457	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R458	ERD25TJ1R5	CARBON	0.25W	5%	1R5Ω	
R459	ERJ6GEYJ680	S.M.CARB	0.1W	5%	68Ω	
R460	ERJ6GEYJ513	S.M.CARB	0.1W	5%	51KΩ	
R461	ERDS1TJ471	CARBON	0.5W	5%	470Ω	
R462	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R463	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R464	ERW12PKR68	WIREWOUND	0.5W	10%	R68Ω	▲
R465	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R466	ERO25CKF1801	METAL	0.25W	1%	1K8Ω	▲
R467	ERO25CKF1801	METAL	0.25W	1%	1K8Ω	▲
R470	ERD25TJ512	CARBON	0.25W	5%	5K1Ω	
R471	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R472	ERDS1TJ4R7	CARBON	0.5W	5%	4R7Ω	
R501	ERJ6GEYJ331	S.M.CARB	0.1W	5%	330Ω	
R502	ERJ6GEYJ560	S.M.CARB	0.1W	5%	56Ω	
R503	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R504	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R506	ERD25TJ560	CARBON	0.25W	5%	56Ω	
R507	ERQ14AJW3R3	FUSIBLE	0.25W	5%	3R3Ω	▲
R509	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R510	ERDS1TJ152	CARBON	0.5W	5%	1K5Ω	
R511	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R512	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R513	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R514	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R551	ERW2PKR47	WIREWOUND	2W	10%	R47Ω	▲
R553	ERG1SJ152	METAL	1W	5%	1K5Ω	▲
R554	ERQ14AJW101	METAL	0.25W	5%	100Ω	▲
R558	ERDS1TJ124	CARBON	0.5W	5%	120KΩ	
R561	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R562	ERJ6GEYJ225	S.M.CARB	0.125W	5%	2M2Ω	
R563	ERJ6GEYJ225	S.M.CARB	0.125W	5%	2M2Ω	
R564	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R566	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R567	ERJ6GEYJ274	S.M.CARB	0.1W	5%	270KΩ	
R601	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R602	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R603	ERJ6GEYJ750	S.M.CARB	0.1W	5%	75Ω	
R605	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R606	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R607	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R608	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R609	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R610	ERJ6GEYJ473	S.M.CARB	0.1W	5%	47KΩ	
R611	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R612	ERJ6GEYJ123	S.M.CARB	0.1W	5%	12KΩ	
R613	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R614	ERJ6GEYJ470	S.M.CARB	0.1W	5%	47Ω	
R615	ERJ6GEYJ333	S.M.CARB	0.1W	5%	33KΩ	
R616	ERJ6GEYJ153	S.M.CARB	0.1W	5%	15KΩ	
R618	ERJ6GEYJ151	S.M.CARB	0.1W	5%	150Ω	
R619	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R623	ERJ6GEYJ821	S.M.CARB	0.1W	5%	820Ω	
R701	ERQ12AJ101	FUSIBLE	0.5W	5%	100Ω	▲
R702	ERQ12HJ8R2	METAL	0.5W	5%	8R2Ω	▲
R703	ERG2FJ821	METAL	2W	5%	820Ω	▲
R704	ERJ6GEYJ563	S.M.CARB	0.1W	5%	56KΩ	
R705	ERJ6GEYJ104	S.M.CARB	0.1W	5%	100KΩ	
R706	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R707	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω	
R708	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R709	ERJ6GEYJ393	S.M.CARB	0.1W	5%	39KΩ	
R710	ERJ6GEYJ273	S.M.CARB	0.1W	5%	27KΩ	
R711	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	

Ref No.	Part No.	Description				
R712	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R713	ERG1SJ101	METAL	1W	5%	100Ω	
R801	ERG3FJ682H	METAL	3W	5%	6K8Ω	▲
R802	ERG2FJ472	METAL	2W	5%	4K7Ω	▲
R803	ERX12SJWR47	METAL	12W	5%	R47	
R804	ERJ6GEYJ682	S.M.CARB	0.1W	5%	6K8Ω	
R805	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R807	ERO25CKF1201	METAL	0.25W	1%	1K2Ω	▲
R808	232266296706	THERMISTOR				
R809	ERO25CKF1332	METAL	0.25W	1%	13KΩ	▲
R810	ERD25TJ103	CARBON	0.25W	5%	10KΩ	
R811	EVMEASA00B33	CONTROL			3KΩ	
R812	ERDS1TJ220	CARBON	0.5W	5%	22Ω	
R813	ERD50FJ274	CARBON	0.5W	5%	270KΩ	
R814	ERF7ZK2R7	WOUND	7W	20%	2R7Ω	▲
R815	ERDS1TJ563	CARBON	0.5W	5%	56KΩ	
R817	ERG3FJ470	METAL	3W	5%	47Ω	▲
R818	ERD50FJ104	CARBON	0.5W	5%	100KΩ	
R819	ERD50FJ184	CARBON	0.5W	5%	180KΩ	
R820	ERD75TAJ825	CARBON	0.75W	5%	8M2Ω	▲
R841	ERC12ZGK335D	SOLID	0.5W	10%	3M3Ω	
R852	ERJ6GEYJ271	S.M.CARB	0.1W	5%	270Ω	
R853	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R854	ERDS1TJ474	CARBON	0.5W	5%	470KΩ	
R855	ERG2FJ223	METAL	2W	5%	22KΩ	▲
R856	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R857	ERG2SJS100H	METAL	2W	5%	10Ω	▲
R901	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R902	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R903	ERJ6GEYJ562	S.M.CARB	0.1W	5%	5K6Ω	
R904	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R905	ERJ6GEYJ681	S.M.CARB	0.1W	5%	680Ω	
R906	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R907	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R908	ERJ6GEYJ471	S.M.CARB	0.1W	5%	470Ω	
R909	ERJ6GEYJ102	S.M.CARB	0.1W	5%	1KΩ	
R910	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R911	ERJ6GEYJ152	S.M.CARB	0.1W	5%	1K5Ω	
R913	ERJ6GEYJ183	S.M.CARB	0.1W	5%	18KΩ	
R914	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R915	ERJ6GEYJ182	S.M.CARB	0.1W	5%	1K8Ω	
R916	ERJ6GEYJ221	S.M.CARB	0.1W	5%	220Ω	
R917	ERJ6GEYJ121	S.M.CARB	0.1W	5%	120Ω	
R919	ERQ14AJ390	FUSIBLE	0.25W	5%	39Ω	▲
R920	ERQ14AJ390	FUSIBLE	0.25W	5%	39Ω	▲
R921	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R922	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R923	ERD25TJ393	CARBON	0.25W	5%	39KΩ	
R924	ERDS1FJ390	CARBON	0.5W	5%	39Ω	▲
R927	ERD25TJ471	CARBON	0.25W	5%	470Ω	
R928	ERD25TJ5R6	CARBON	0.25W	5%	5R6Ω	
R929	ERDS1FJ471	CARBON	0.5W	5%	470Ω	▲
R930	ERD25TJ5R6	CARBON	0.25W	5%	5R6Ω	
R931	ERDS1FJ390	CARBON	0.5W	5%	39Ω	▲
R932	ERDS1FJ101	CARBON	0.5W	5%	100Ω	▲
R933	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R934	ERJ6GEYJ222	S.M.CARB	0.1W	5%	2K2Ω	
R935	ERQ14AJ3R9	FUSIBLE	0.25W	5%	3R9Ω	▲
R936	ERQ1CJP331	METAL	1W	5%	330Ω	▲
R937	ERQ14AJ100	METAL	0.25W	5%	10Ω	▲
R1203	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1204	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1205	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1206	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	
R1208	ERJ6GEYJ223	S.M.CARB	0.1W	5%	22KΩ	
R1209	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1210	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1212	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1213	ERJ6GEYJ103	S.M.CARB	0.1W	5%	10KΩ	
R1214	ERJ6GEYJ472	S.M.CARB	0.1W	5%	4K7Ω	
R1215	ERJ6GEYJ101	S.M.CARB	0.1W	5%	100Ω	

Ref No.	Part No.	Description
R1216	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1217	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1218	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1219	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1220	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1221	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1222	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1224	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1225	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1226	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1227	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1229	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1230	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1231	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1232	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1233	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1235	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1236	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1237	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1238	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R1239	ERJ6GEYJ392	S.M.CARB 0.1W 5% 3K9Ω
R1240	ERJ6GEYJ392	S.M.CARB 0.1W 5% 3K9Ω
R1241	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1242	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1244	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R1245	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1246	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1247	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1249	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1250	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1251	ERJ6GEYJ393	S.M.CARB 0.1W 5% 39KΩ
R1252	ERX1SJ3R3	METAL 1W 5% 3R3Ω
R1253	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R1254	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R1255	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R1256	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R1257	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1258	ERJ6GEYJ472	S.M.CARB 0.1W 5% 4K7Ω
R1260	ERDS1FJ121	CARBON 0.5W 5% 120Ω ▲
R1261	ERJ6GEYJ392	S.M.CARB 0.1W 5% 3K9Ω
R1262	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R1263	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R1264	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R1265	ERJ6GEYJ152	S.M.CARB 0.1W 5% 1K5Ω
R1266	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R1277	ERDS1TJ151	CARBON 0.5W 5% 150Ω
R1281	ERJ6GEYJ271	S.M.CARB 0.1W 5% 270Ω
R1282	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R1283	ERD25TJ750	CARBON 0.25W 5% 75Ω
R2101	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2102	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R2103	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2104	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2105	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R2106	ERJ6GEYJ183	S.M.CARB 0.1W 5% 18KΩ
R2107	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2108	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2109	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2110	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R2111	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R2301	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R2302	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R2303	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2304	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2313	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2314	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R2315	ERJ6GEYJ473	S.M.CARB 0.1W 5% 47KΩ
R2316	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R2318	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R2321	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R2322	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2323	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ

Ref No.	Part No.	Description
R2324	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2325	ERJ6GEYJ273	S.M.CARB 0.1W 5% 27KΩ
R2326	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2327	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2328	ERJ6GEYJ473	S.M.CARB 0.1W 5% 47KΩ
R2329	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R2330	ERJ6GEYJ222	S.M.CARB 0.1W 5% 2K2Ω
R2331	ERJ6GEYJ223	S.M.CARB 0.1W 5% 22KΩ
R2332	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2333	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R2334	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R2335	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R2651	ERG2FJ221	METAL 2W 5% 220Ω ▲
R2652	ERG2FJ221	METAL 2W 5% 220Ω ▲
R2653	ERDS1TJ151	CARBON 0.5W 5% 150Ω
R2654	ERDS1TJ151	CARBON 0.5W 5% 150Ω
R3001	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3002	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3003	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3004	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3005	ERJ6GEYJ470	S.M.CARB 0.1W 5% 47Ω
R3006	ERJ6GEYJ470	S.M.CARB 0.1W 5% 47Ω
R3007	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3008	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R3009	ERJ6GEYJ104	S.M.CARB 0.1W 5% 100KΩ
R3010	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R3011	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3012	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3013	ERJ6GEYJ561	S.M.CARB 0.1W 5% 560Ω
R3014	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R3015	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω
R3016	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3017	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3019	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3020	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3022	ERD2FCG560	CARBON 2W 2% 56Ω
R3024	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3025	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3026	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3027	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3029	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3030	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3032	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3034	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ
R3036	ERJ6GEYJ220	S.M.CARB 0.1W 5% 22Ω
R3037	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3038	ERD2FCG100	CARBON 2W 2% 10Ω
R3039	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3040	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3041	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3042	ERJ6GEYJ682	S.M.CARB 0.1W 5% 6K8Ω
R3043	ERD2FCG100	CARBON 2W 2% 10Ω
R3044	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3045	ERJ6GEYJ471	S.M.CARB 0.1W 5% 470Ω
R3046	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3047	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3048	ERJ6GEYJ102	S.M.CARB 0.1W 5% 1KΩ
R3049	ERJ6GEYJ680	S.M.CARB 0.1W 5% 68Ω
R3050	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3051	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3052	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3053	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3054	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3055	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3056	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3057	ERJ6GEYJ101	S.M.CARB 0.1W 5% 100Ω
R3058	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3059	ERJ6GEYJ153	S.M.CARB 0.1W 5% 15KΩ
R3060	ERJ6GEYJ470	S.M.CARB 0.1W 5% 47Ω
R3062	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3063	ERJ6GEYJ750	S.M.CARB 0.1W 5% 75Ω
R3064	ERJ6GEYJ103	S.M.CARB 0.1W 5% 10KΩ

Ref No.	Part No.	Description		
R3065	ERJ6GEYJ104	S.M.CARB	0.1W	5% 100K $\Omega$
R3066	ERJ6GEYJ104	S.M.CARB	0.1W	5% 100K $\Omega$
R3067	ERJ6GEYJ273	S.M.CARB	0.1W	5% 27K $\Omega$
R3068	ERJ6GEYJ103	S.M.CARB	0.1W	5% 10K $\Omega$
R3069	ERJ6GEYJ103	S.M.CARB	0.1W	5% 10K $\Omega$
R3070	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3071	ERJ6GEYJ470	S.M.CARB	0.1W	5% 47 $\Omega$
R3150	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3151	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3152	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3153	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3154	ERJ6GEYJ183	S.M.CARB	0.1W	5% 18K $\Omega$
R3155	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100 $\Omega$
R3156	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100 $\Omega$
R3157	ERJ6GEYJ183	S.M.CARB	0.1W	5% 18K $\Omega$
R3158	ERJ6GEYJ750	S.M.CARB	0.1W	5% 75 $\Omega$
R3502	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100 $\Omega$
R3504	ERJ6GEYJ101	S.M.CARB	0.1W	5% 100 $\Omega$
R3505	ERJ6GEY0R00	S.M.CARB	0.1W	5% 0 $\Omega$
R3508	ERJ6GEYJ183	S.M.CARB	0.1W	5% 18K $\Omega$
R3511	ERJ6GEYJ103	S.M.CARB	0.1W	5% 10K $\Omega$
R3512	ERJ6GEYJ472	S.M.CARB	0.1W	5% 4K7 $\Omega$

Ref No.	Part No.	Description	
<b>SWITCHES</b>			
S.351	0330550049	CRT SOCKET	
S801	ESB91232A	SWITCH	▲
S1201	EVQ23405R	SWITCH	
S1202	EVQ23405R	SWITCH	
S1203	EVQ23405R	SWITCH	
S1204	EVQ23405R	SWITCH	
S1205	EVQ23405R	SWITCH	
<b>TRANSFORMERS</b>			
T501	5270103200	TRANSFORMER	
T801	ETS42AP147AC	TRANSFORMER	▲
T1201	ETP35KAN61ZU	TRANSFORMER	
<b>FILTERS</b>			
X100	EFCA6R5MB3	FILTER	
X601	TSS2169-B	CRYSTAL	
X1201	TSS120M2	CRYSTAL	
X2101	4730007158	CRYSTAL	

**NOTE:**

For models with the dark walnut finish please refer to the TX-28XD3F/A and TX-25XD3F/A Difference Lists.

**NOTE:**

Pour les modèles avec finition noyer foncé, se référer à la liste des différences du TX-28XD3F/A et du TX-25XD3F/A.

**DIFFERENCES FOR MODEL TX-28XD3F**

Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
5)	TLK8E05125	DEGAUSS COIL	▲
7)	A66ECF50X32	CRT	▲
8)	TKY8E160	CABINET	▲
9)	TKP8E1169	SPEAKER NET	
10)	TBX8E040	POWER BUTTON (BLACK)	
11)	TKP8E1175	LEFT PANEL (BLACK)	
12)	TKP8E1172	TOP PANEL (BLACK)	
14)	TBM8E1663	MODEL LABEL	
15)	TKU8E00320	BACK COVER	▲
18)	TNP8EE008AH	E PC.B.	▲
23)	TKP8E1176	RIGHT PANEL (BLACK)	
24)	TKP8E1170	DOOR LID (BLACK)	
	TPC8E4586	OUTER CARTON	
	TPD8E633	TOP CUSHION	
	TPD8E634	BOTTOM CUSHION	
<b>CAPACITORS</b>			
C252	ECUV1H223K BX	S.M.CAP 50V 22nF	
C256	ECUV1H223K BX	S.M.CAP 50V 22nF	
<b>INTEGRATED CIRCUITS</b>			
IC1202	27C010-002AT	EPROM	
IC1203	X24LM0401EE	EAROM	
<b>TERMINALS AND LINKS</b>			
JSE036	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω	
JSE038	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω	
<b>RESISTOR</b>			
R272	ERF7ZK4R7	WOUND 7W 10% 4R7Ω	▲
<b>TRANSFORMERS</b>			
T551	ZTFH44011A	F.B.T.	▲

**DIFFERENCES FOR MODEL TX-28XD3F/A**

Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
5)	TLK8E05125	DEGAUSS COIL	▲
7)	A66ECF50X32	CRT	▲
8)	TKY8E160	CABINET	▲
9)	TKP8E1169	SPEAKER NET	
10)	TBX8E045	POWER BUTTON (DARK WALNUT)	
11)	TKP8E1184	LEFT PANEL (DARK WALNUT)	
12)	TKP8E1182	TOP PANEL (DARK WALNUT)	
14)	TBM8E1663	MODEL LABEL	
15)	TKU8E00320	BACK COVER	▲
18)	TNP8EE008AH	E PC.B.	▲
23)	TKP8E1186	RIGHT PANEL (DARK WALNUT)	
24)	TKP8E1180	DOOR LID (DARK WALNUT)	
	TPC8E4586	OUTER CARTON	
	TPD8E633	TOP CUSHION	
	TPD8E634	BOTTOM CUSHION	
<b>CAPACITORS</b>			
C252	ECUV1H223K BX	S.M.CAP 50V 22nF	
C256	ECUV1H223K BX	S.M.CAP 50V 22nF	
<b>INTEGRATED CIRCUITS</b>			
IC1202	27C010-002AT	EPROM	
IC1203	X24LM0401EE	EAROM	
<b>TERMINALS AND LINKS</b>			
JSE036	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω	
JSE038	ERJ6GEY0R00	S.M.CARB 0.1W 5% 0Ω	
<b>RESISTOR</b>			
R272	ERF7ZK4R7	WOUND 7W 10% 4R7Ω	▲
<b>TRANSFORMERS</b>			
T551	ZTFH44011A	F.B.T.	▲

**DIFFERENCES FOR MODEL TX-25XD3F**

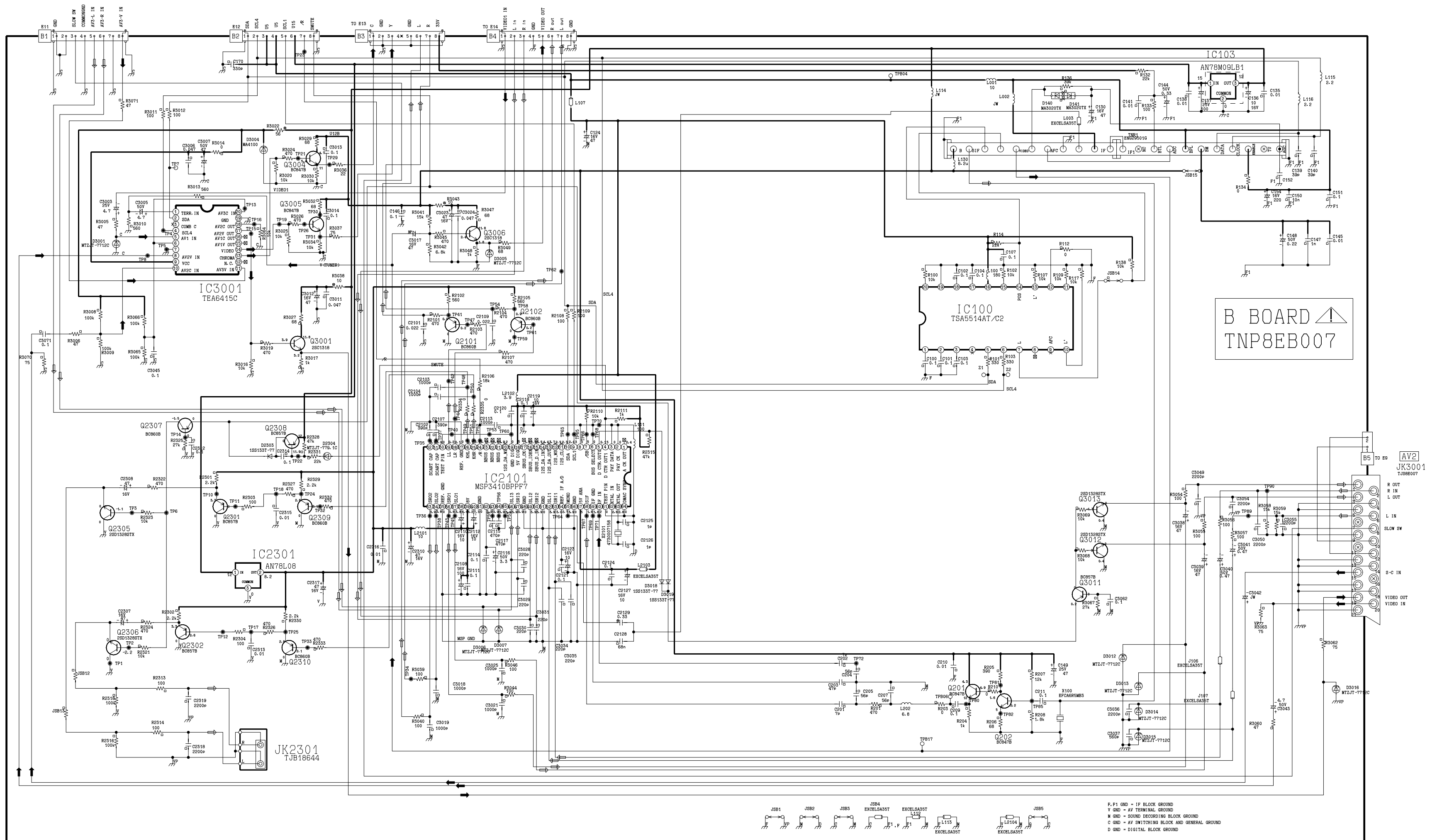
Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
5)	TLK8E05120	DEGAUSS COIL	▲
7)	A59ECF50X32	CRT	▲
8)	TKY8E150	CABINET	▲
9)	TKP8E1168	SPEAKER NET	
10)	TBX8E040	POWER BUTTON (BLACK)	
11)	TKP8E1173	LEFT PANEL (BLACK)	
12)	TKP8E1171	TOP PANEL (BLACK)	
14)	TBM8E1655	MODEL LABEL	
15)	TKU8E00310	BACK COVER	▲
18)	TNP8EE008AQ	E P.C.B.	▲
23)	TKP8E1174	RIGHT PANEL (BLACK)	
24)	TKP8E1170	DOOR LID (BLACK)	
	TPC8E4584	OUTER CARTON	
	TPD8E631	TOP CUSHION	
	TPD8E632	BOTTOM CUSHION	
<b>CAPACITORS</b>			
C252	ECUY1H563KBX	S.M.CAP	50V 56nF
C256	ECUY1H563KBX	S.M.CAP	50V 56nF
<b>INTEGRATED CIRCUITS</b>			
IC1202	27C010-002AP	EPROM	
IC1203	X24LM0401ED	EAROM	
<b>RESISTOR</b>			
R272	ERF7ZK5R6	WOUND	7W 10% 5R6Ω ▲
<b>TRANSFORMERS</b>			
T551	KFT4AA098F	F.B.T.	▲

**DIFFERENCES FOR MODEL TX-25XD3F/A**

Ref No.	Part No.	Description	
<b>MISCELLANEOUS COMPONENTS</b>			
5)	TLK8E05120	DEGAUSS COIL	▲
7)	A59ECF50X32	CRT	▲
8)	TKY8E150	CABINET	▲
9)	TKP8E1168	SPEAKER NET	
10)	TBX8E045	POWER BUTTON (DARK WALNUT)	
11)	TKP8E1192	LEFT PANEL (DARK WALNUT)	
12)	TKP8E1190	TOP PANEL (DARK WALNUT)	
14)	TBM8E1655	MODEL LABEL	
15)	TKU8E00310	BACK COVER	▲
18)	TNP8EE008AQ	E P.C.B.	▲
23)	TKP8E1194	RIGHT PANEL (DARK WALNUT)	
24)	TKP8E1180	DOOR LID (DARK WALNUT)	
	TPC8E4584	OUTER CARTON	
	TPD8E631	TOP CUSHION	
	TPD8E632	BOTTOM CUSHION	
<b>CAPACITORS</b>			
C252	ECUY1H563KBX	S.M.CAP	50V 56nF
C256	ECUY1H563KBX	S.M.CAP	50V 56nF
<b>INTEGRATED CIRCUITS</b>			
IC1202	27C010-002AP	EPROM	
IC1203	X24LM0401ED	EAROM	
<b>RESISTOR</b>			
R272	ERF7ZK5R6	WOUND	7W 10% 5R6Ω ▲
<b>TRANSFORMERS</b>			
T551	KFT4AA098F	F.B.T.	▲

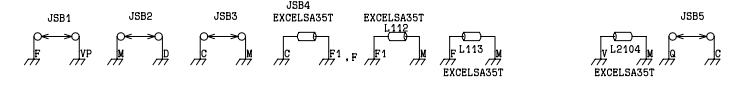






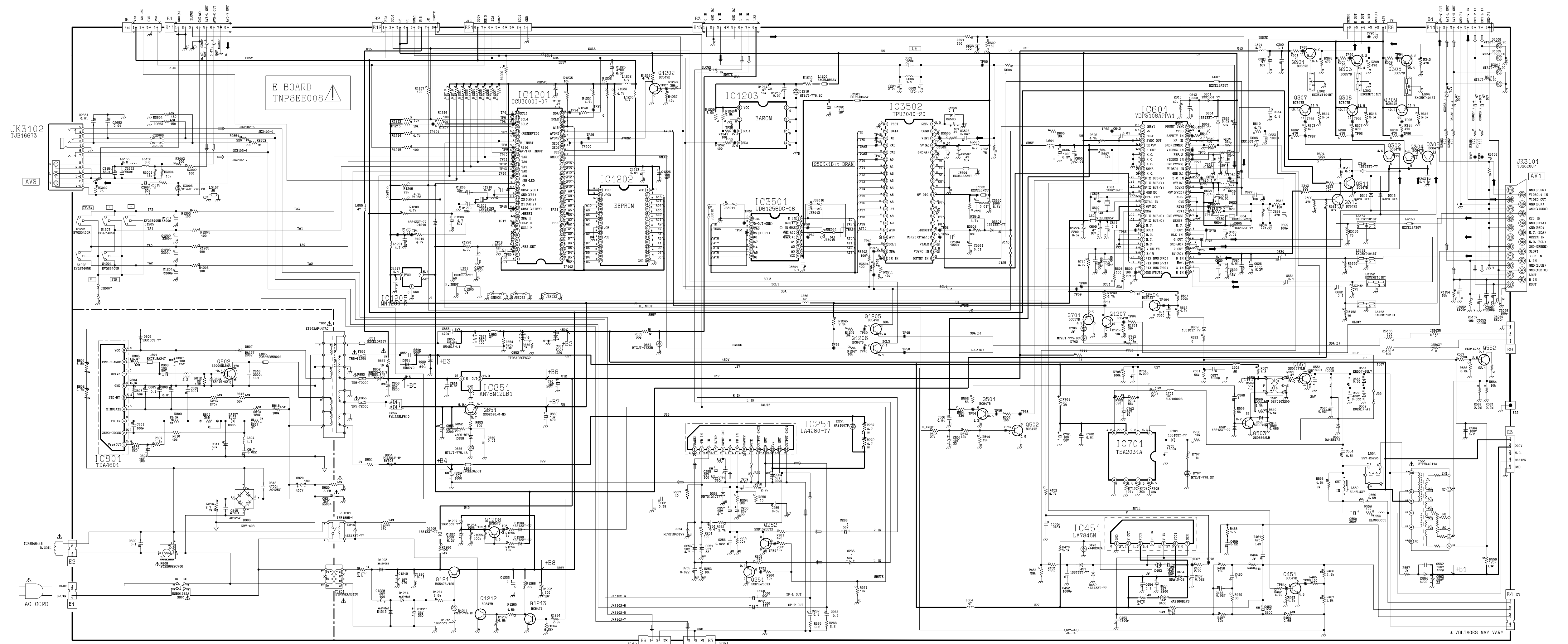
B BOARD  
TNP8EB007

AV2  
JK3001  
TJSE8007



F, P1 GND = IF BLOCK GROUND  
V GND = AV TERMINAL GROUND  
M GND = SOUND RECORDING BLOCK GROUND  
C GND = AV SWITCHING BLOCK AND GENERAL GROUND  
D GND = DIGITAL BLOCK GROUND

# TX - 28XD3F E BOARD



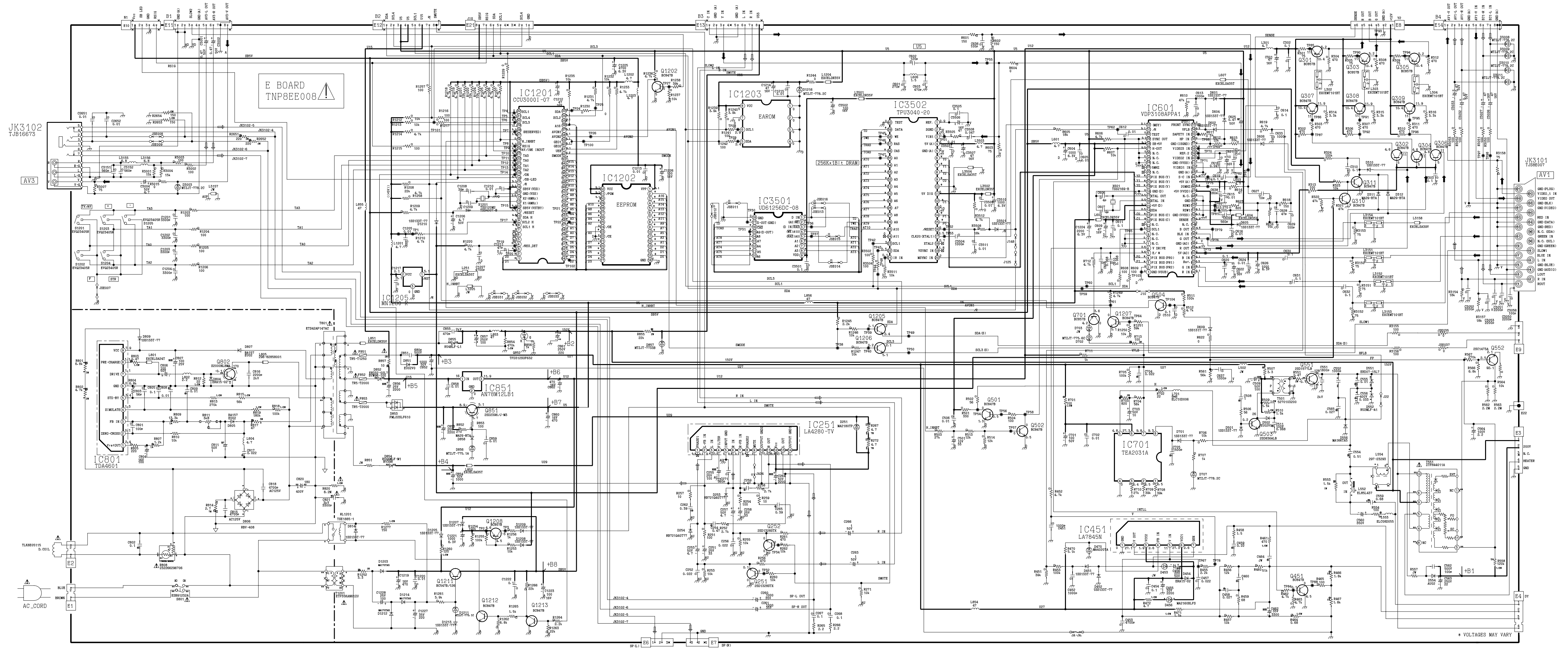
E BOARD  
TNP8EE008

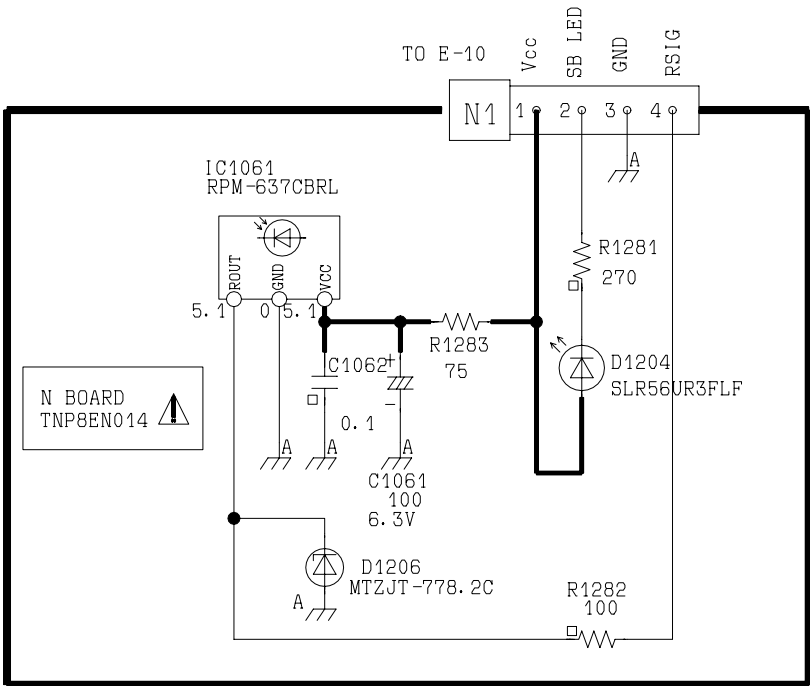
JK3102  
TJB16673

JK3104  
TJB8507

\* VOLTAGES MAY VARY

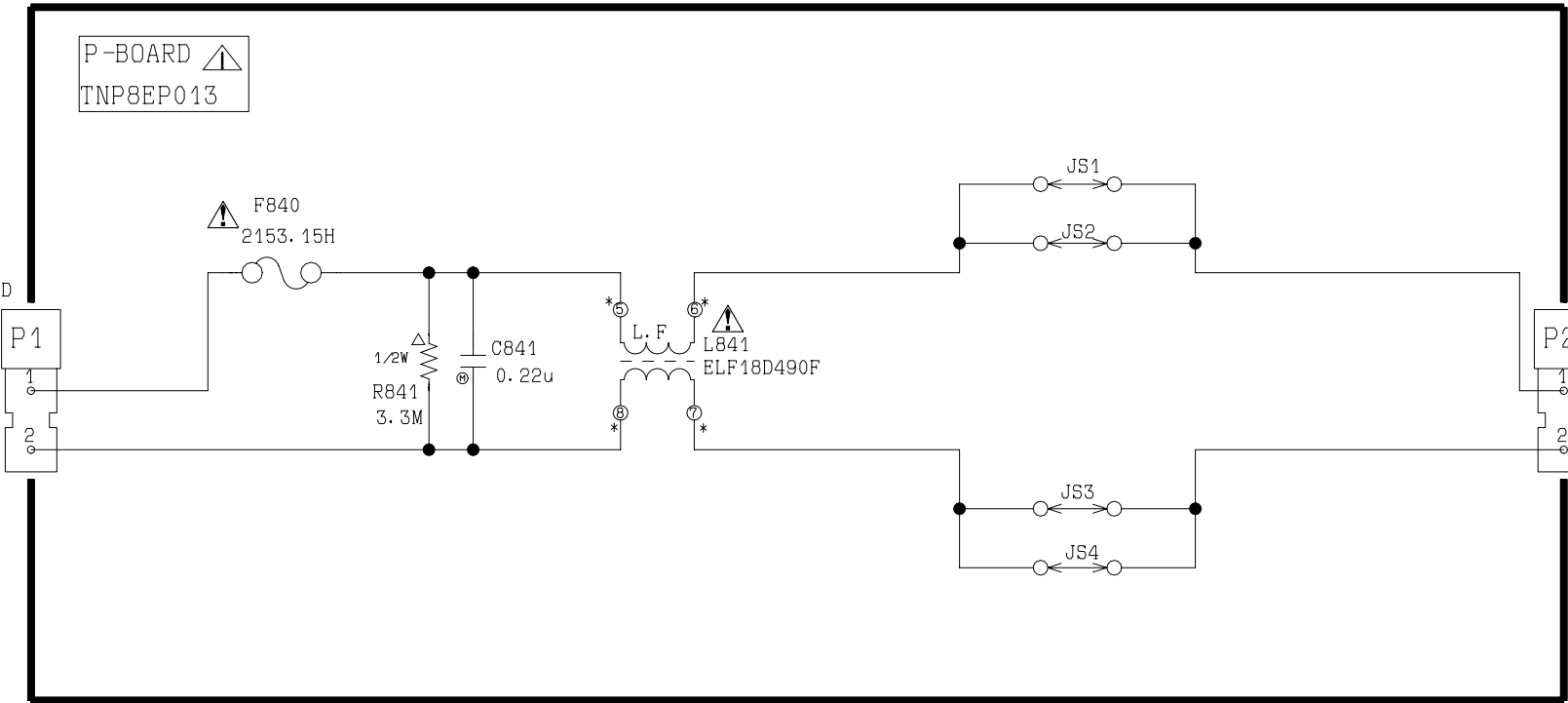
# TX - 25XD3F E BOARD

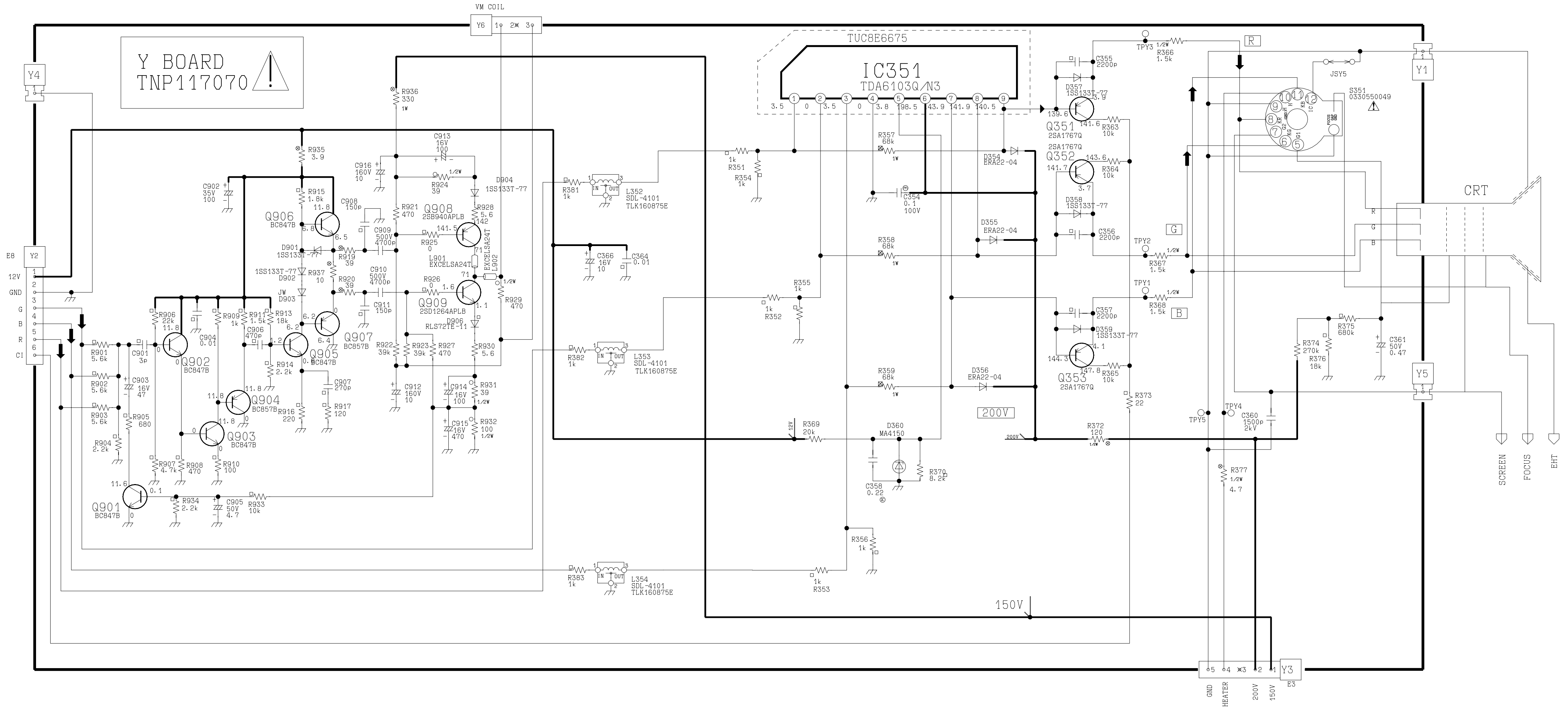


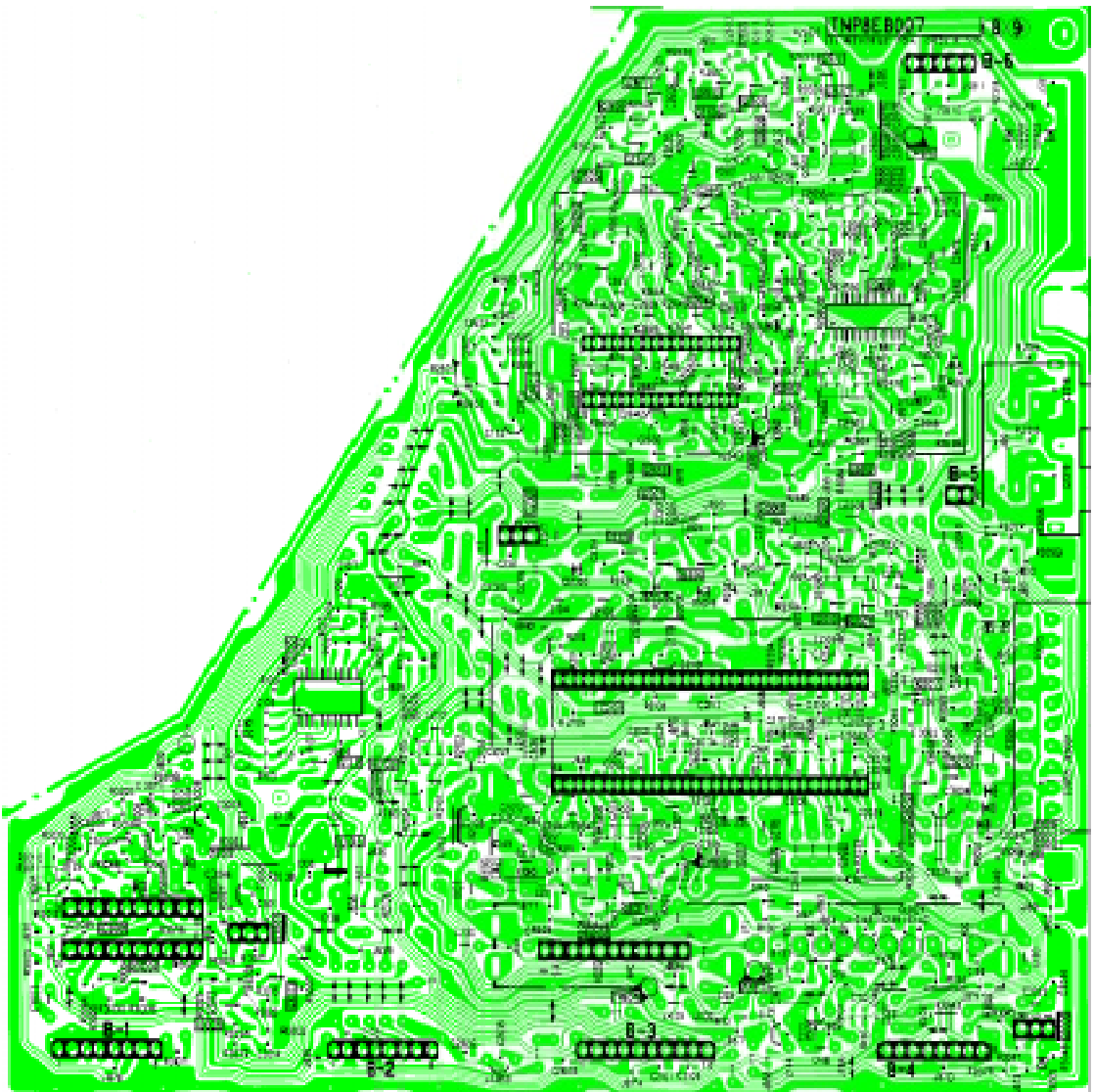


P-BOARD  
TNP8EP013

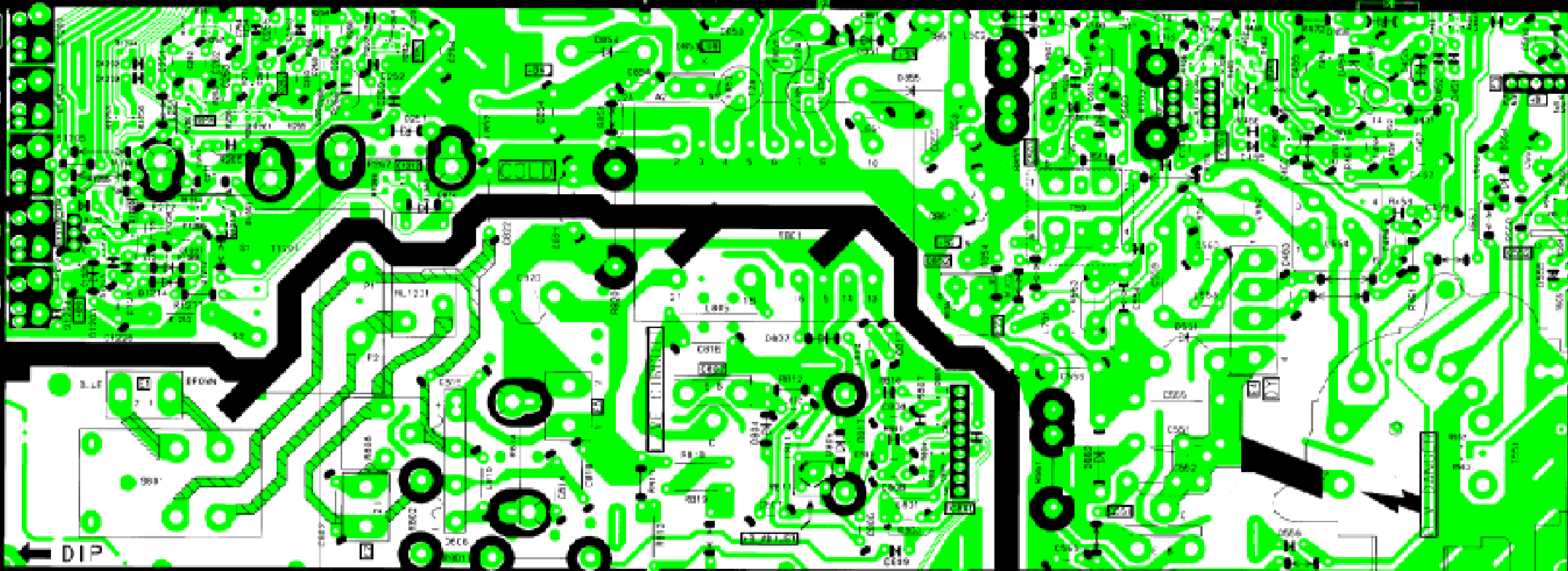
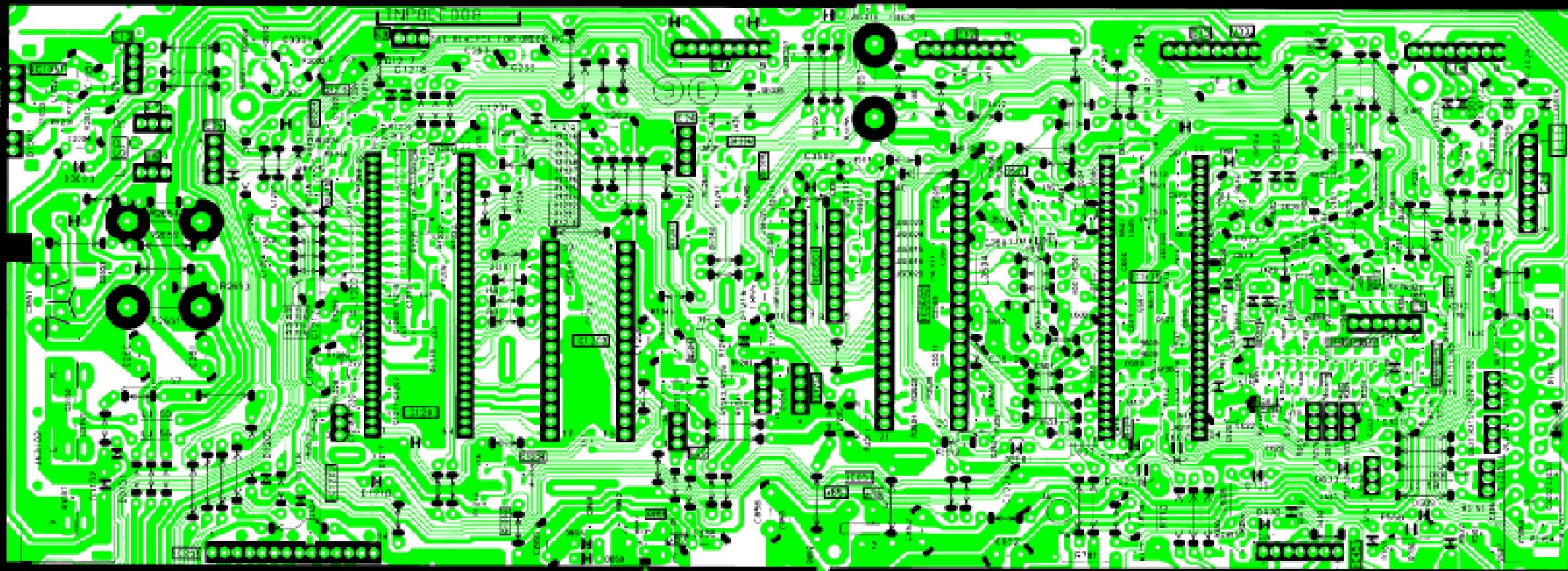
TO  
AC CORD  
220-240V  
50HZ  
BROWN  
BLUE

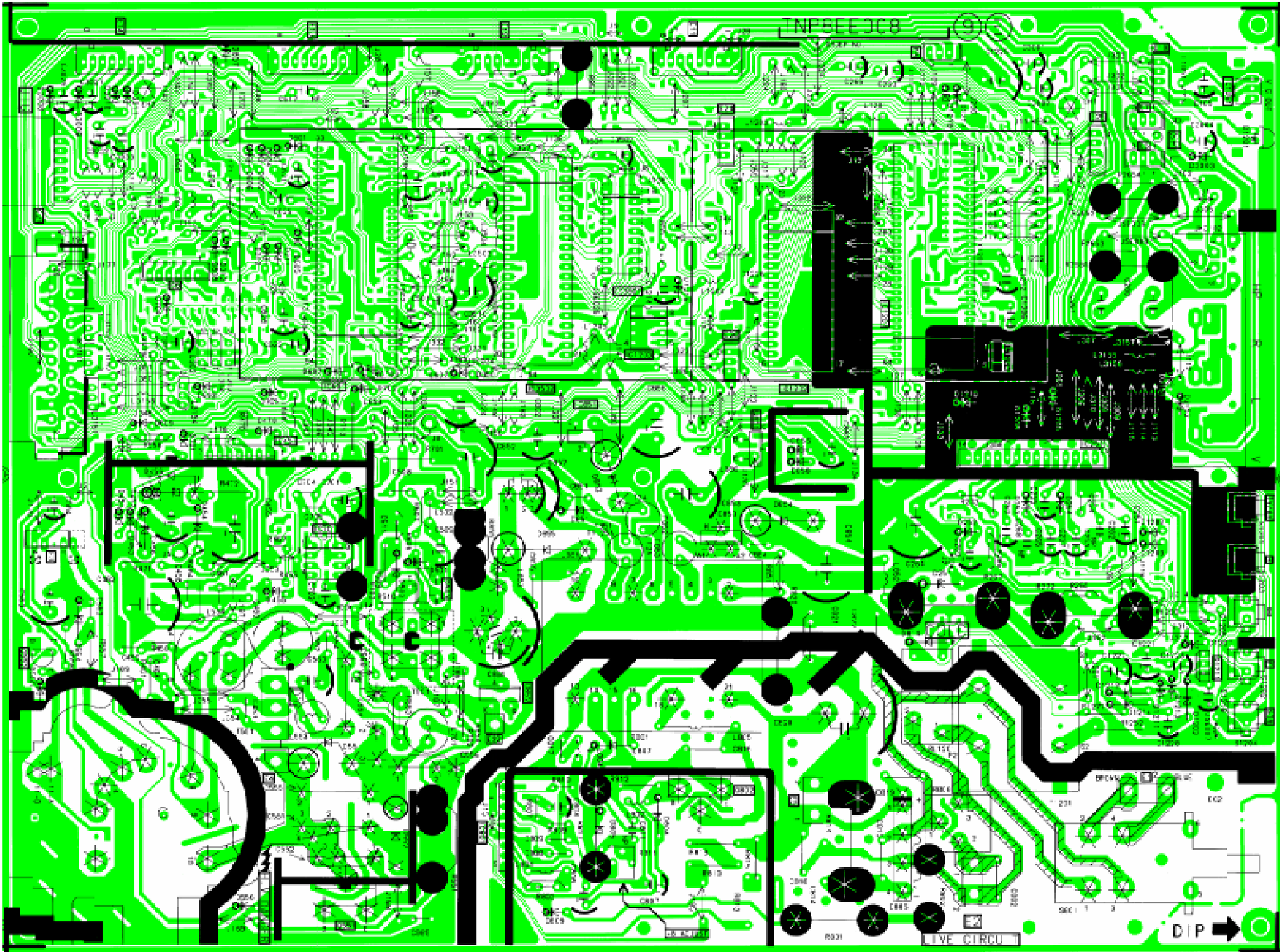


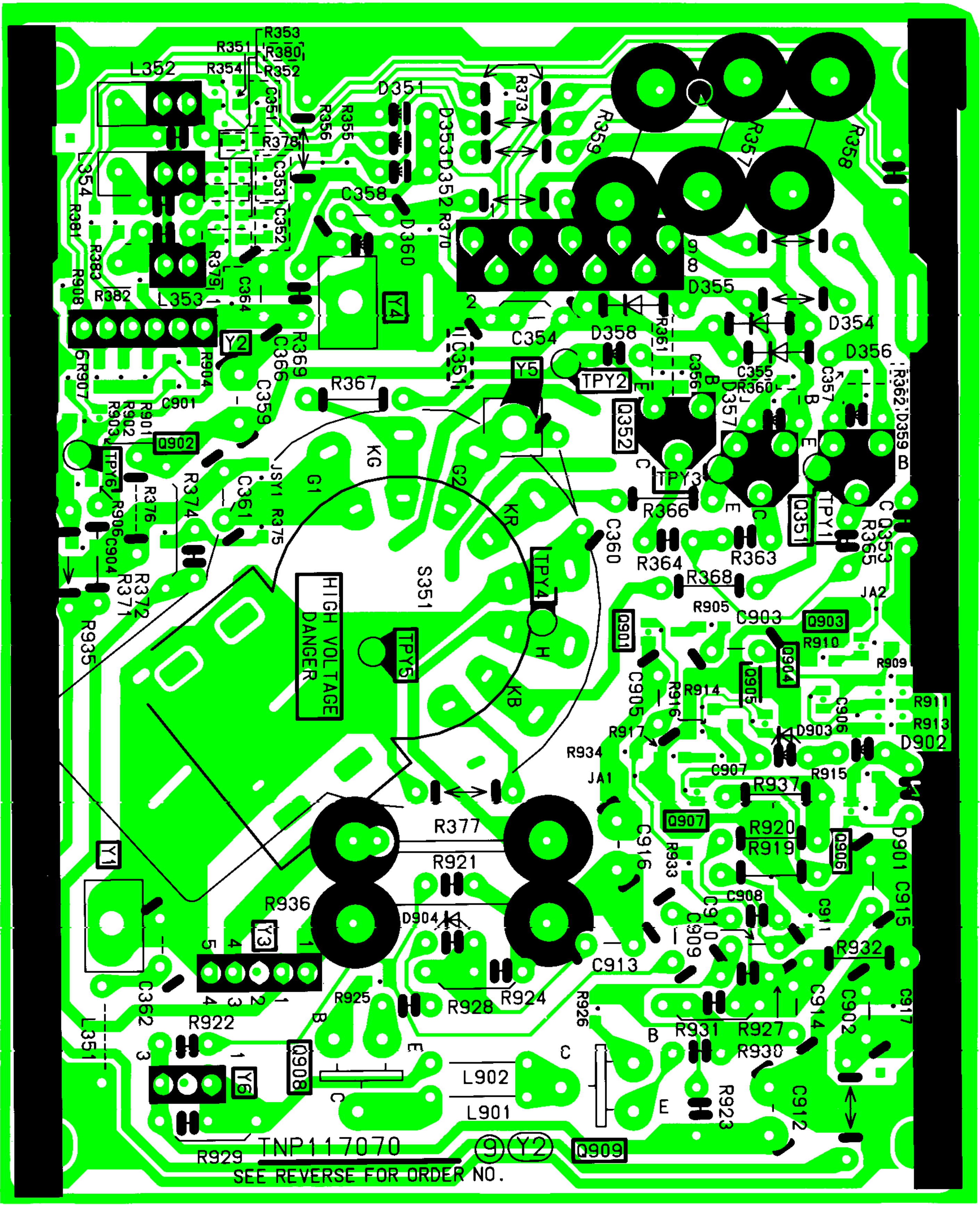












**HIGH VOLTAGE  
DANGER**

R929 TNP117070

SEE REVERSE FOR ORDER NO.

9 Y2

Q909