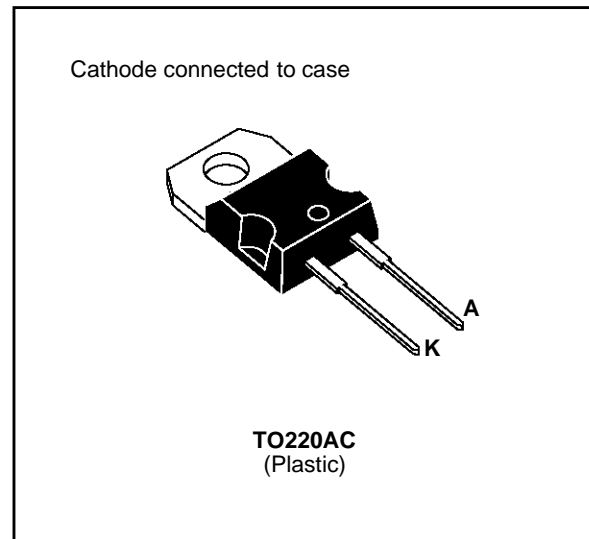


FAST RECOVERY RECTIFIER DIODES

- VERY LOW REVERSE RECOVERY TIME
- VERY LOW SWITCHING LOSSES
- LOW NOISE TURN-OFF SWITCHING



SUITABLE APPLICATIONS

- FREE WHEELING DIODE IN CONVERTERS AND MOTOR CONTROL CIRCUITS
- RECTIFIER IN S.M.P.S

ABSOLUTE MAXIMUM RATINGS (limiting values)

Symbol	Parameter		Value	Unit
I_{FRM}	Repetitive Peak Forward Current	$t_p \leq 10\mu s$	130	A
$I_F (RMS)$	RMS Forward Current		16	A
$I_F (AV)$	Average Forward Current	$T_{case} = 120^\circ C$ $\delta = 0.5$	8	A
I_{FSM}	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P	Power Dissipation	$T_{case} = 100^\circ C$	20	W
T_{stg} T_j	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	$^\circ C$

Symbol	Parameter	BYT 08P-			Unit
		20	300	400	
V_{RRM}	Repetitive Peak Reverse Voltage	200	300	400	V
V_{RSM}	Non Repetitive Peak Reverse Voltage	220	330	440	V

THERMAL RESISTANCE

Symbol	Parameter	Value	Unit
$R_{th(j-c)}$	Junction-case	2.5	$^\circ C/W$

ELECTRICAL CHARACTERISTICS

STATIC CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I _R	T _j = 25°C	V _R = V _{RRM}			15	μA
	T _j = 100°C				2.5	mA
V _F	T _j = 25°C	I _F = 8A			1.5	V
	T _j = 100°C				1.4	

RECOVERY CHARACTERISTICS

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t _{rr}	T _j = 25°C	I _F = 1A	di _F /dt = - 15A/μs			75	ns
		I _F = 0.5A	I _R = 1A			I _{rr} = 0.25A	

TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t _{IRM}	di _F /dt = - 32A/μs	V _{CC} = 200 V I _F = 8A L _p ≤ 0.05μH T _j = 100°C See Figure 11			75	ns
	di _F /dt = - 64A/μs			50		
I _{RM}	di _F /dt = - 32A/μs				2.2	A
	di _F /dt = - 64A/μs			2.8		

TURN-OFF OVERVOLTAGE COEFFICIENT - (With Series Inductance)

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
$C = \frac{V_{RP}}{V_{CC}}$	T _j = 100°C	V _{CC} = 120V	I _F = I _{F(AV)} See note		3.3		
	di _F /dt = - 8A/μs	L _p = 9μH	See figure 12				

Note: Applicable to BYT 08 P-400 only

To evaluate the conduction losses use the following equations:

$$V_F = 1.1 + 0.024 I_F \quad P = 1.1 \times I_{F(AV)} + 0.024 I_F^2(RMS)$$

Figure 1. Low frequency power losses versus average current

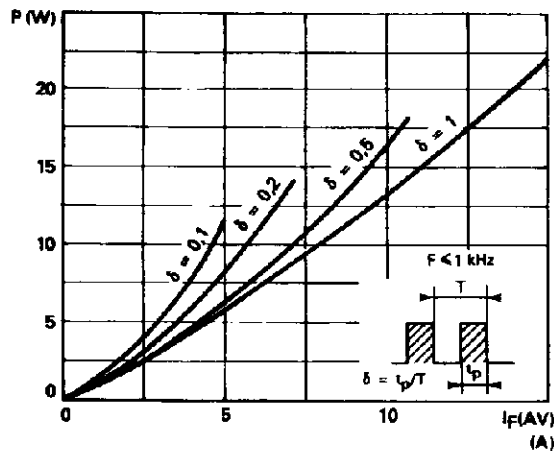


Figure 2. Peak current versus form factor

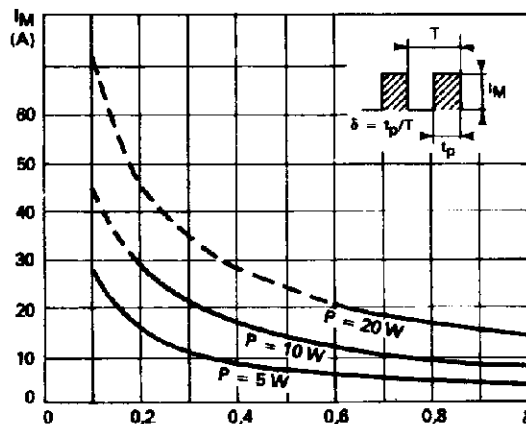


Figure 3. Non repetitive peak surge current versus overload duration

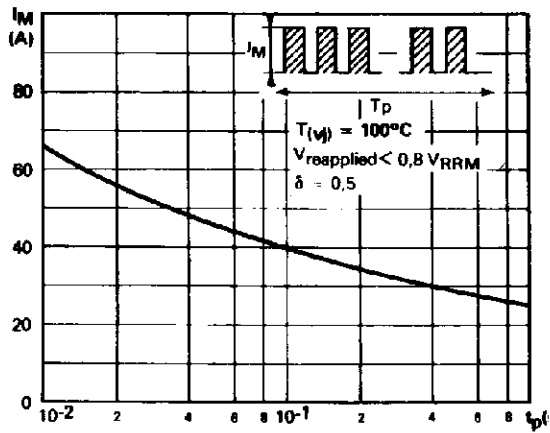


Figure 4. Thermal impedance versus pulse width

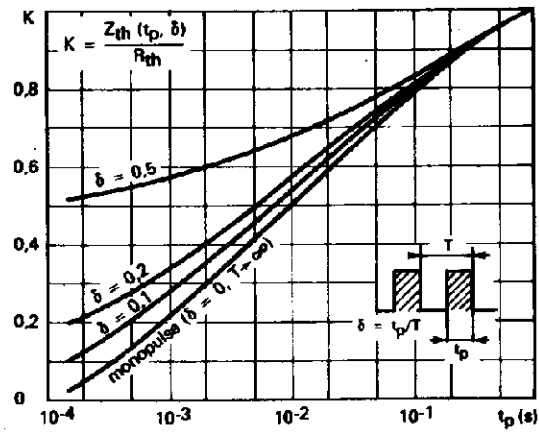


Figure 5. Voltage drop versus forward current

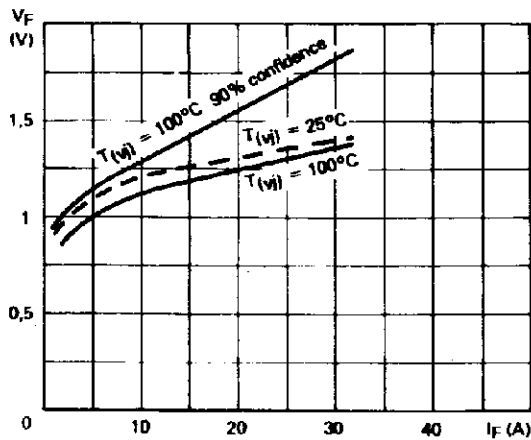


Figure 6. Recovery charge versus di_F/dt.

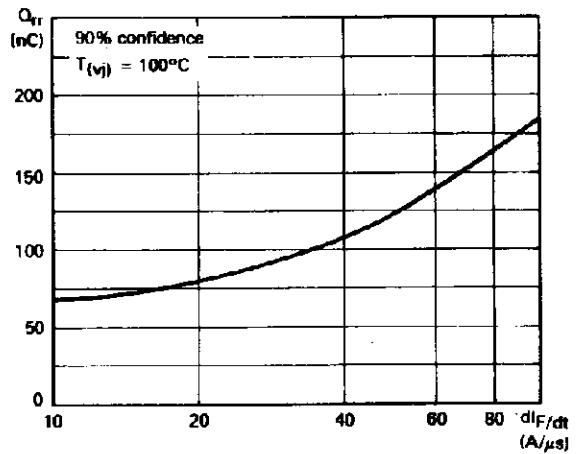


Figure 7. Recovery time versus di_F/dt.

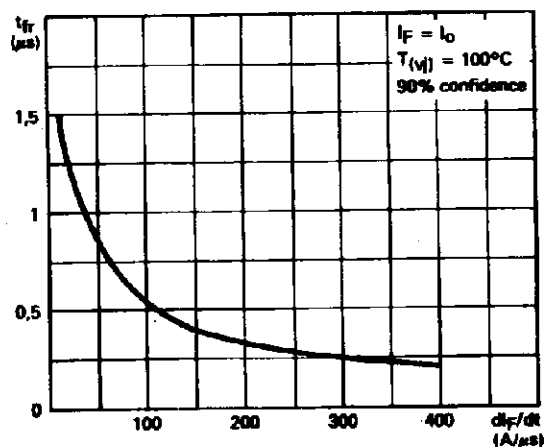


Figure 8. Peak reverse current versus di_F/dt.

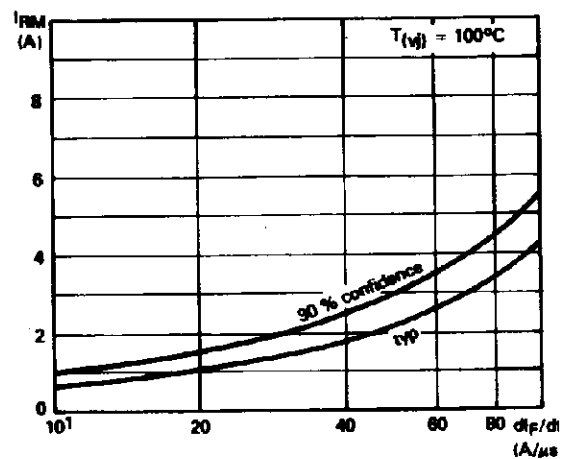


Figure 9. Peak forward voltage versus di_F/dt .

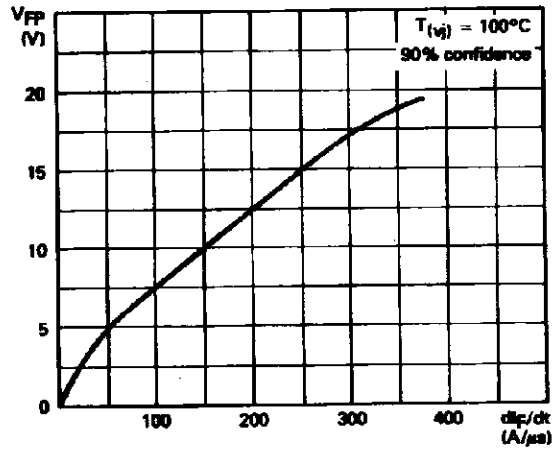


Figure 10. Dynamic parameters versus junction temperature.

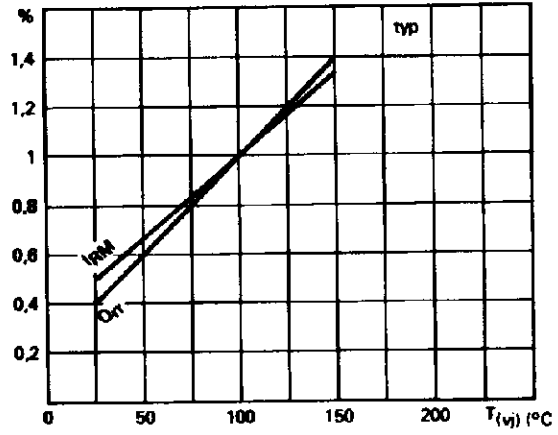


Figure 11. Turn-off switching characteristics (without series inductance).

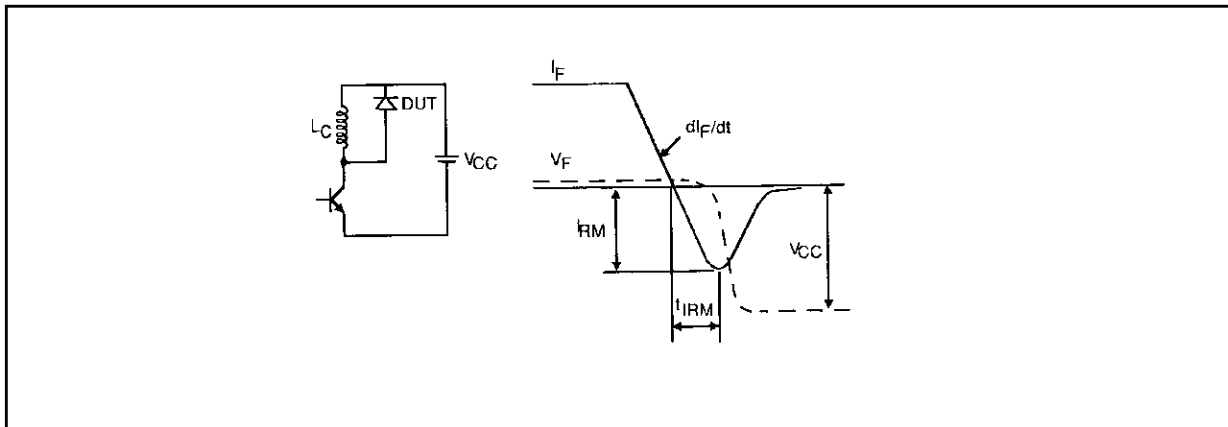
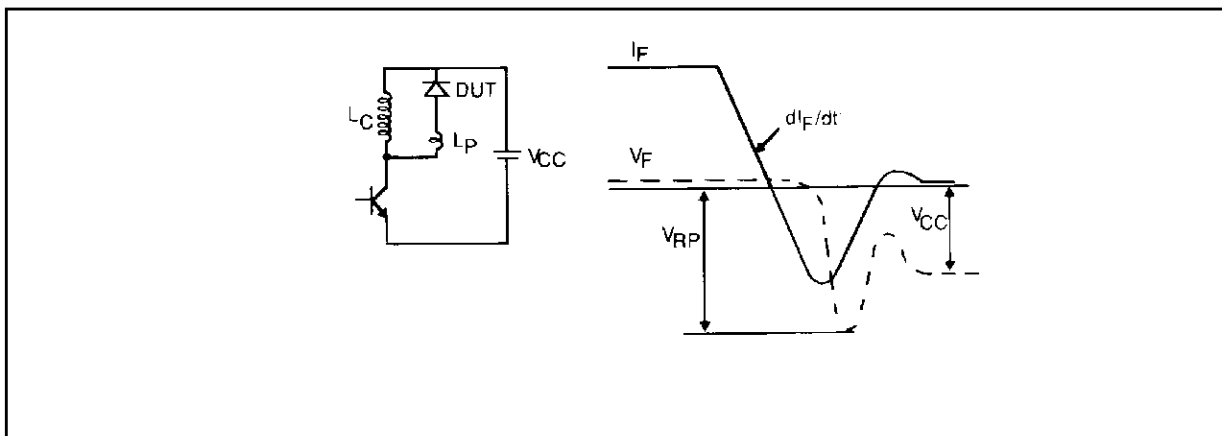
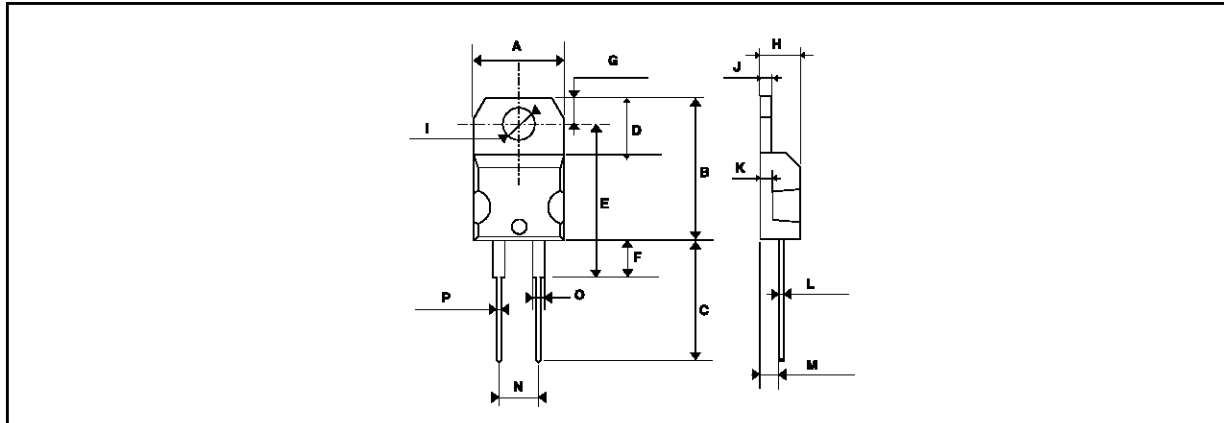


Figure 12. Turn-off switching characteristics (with series inductance).



PACKAGE MECHANICAL DATA TO220AC Plastic



REF.	DIMENSIONS			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	10.0	10.4	0.393	0.409
B	15.2	15.9	0.598	0.626
C	13	14	0.511	0.551
D	6.2	6.6	0.244	0.260
E	16.4 typ.		0.645 typ.	
F	3.5	4.2	0.137	0.165
G	2.65	2.95	0.104	0.116
H	4.4	4.6	0.173	0.181
I	3.75	3.85	0.147	0.151
J	1.23	1.32	0.048	0.051
K	1.27 typ.		0.050 typ.	
L	0.49	0.70	0.019	0.027
M	2.4	2.72	0.094	0.107
N	4.95	5.15	0.194	0.203
O	1.14	1.70	0.044	0.067
P	0.61	0.88	0.024	0.034

Cooling method: by conduction (method C)
 Marking: type number
 Weight: 2.42g
 Recommended torque value: 80cm. N
 Maximum torque value: 100cm. N

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