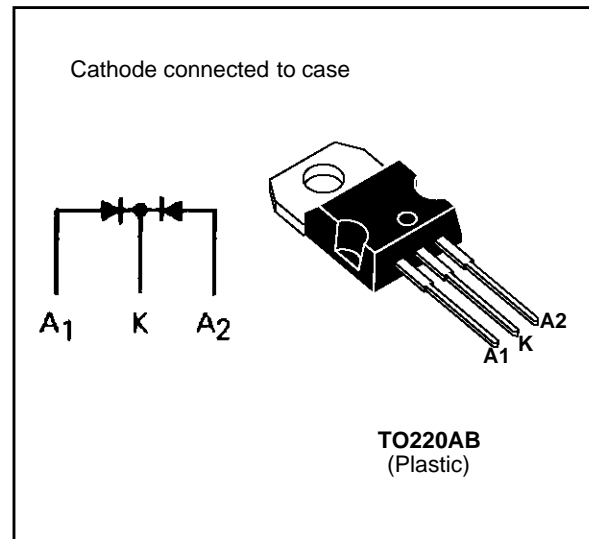
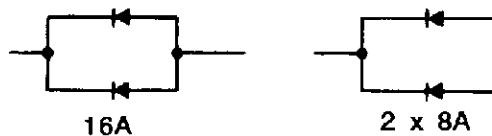


## FAST RECOVERY RECTIFIER DIODES

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

### SUITABLE APPLICATIONS

- The BYT 16 P can be used:



### 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		30	A
$I_F (AV)$	Average Forward Current	$T_{case} = 100^\circ C$ $\delta = 0.5$	16	A
$I_{FSM}$	Surge non Repetitive Forward Current	$t_p = 10ms$ Sinusoidal	100	A
P	Power Dissipation	$T_{case} = 100^\circ C$	25	W
$T_{stg}$ $T_j$	Storage and Junction Temperature Range		- 40 to + 150 - 40 to + 150	°C

Symbol	Parameter	BYT 16P-			Unit
		200	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	Test Conditions	Value	Unit
$R_{th(j-c)}$	Junction-case	3.75 2	°C/W
$R_{th(c)}$	Coupling	0.25	°C/W

**ELECTRICAL CHARACTERISTICS**

**STATIC CHARACTERISTICS**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
I <sub>R</sub>	T <sub>j</sub> = 25°C	V <sub>R</sub> = V <sub>RRM</sub>			15	μA
	T <sub>j</sub> = 100°C				2.5	mA
V <sub>F</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 8A			1.5	V
	T <sub>j</sub> = 100°C				1.4	

**RECOVERY CHARACTERISTICS**

Symbol	Test Conditions			Min.	Typ.	Max.	Unit
t <sub>rr</sub>	T <sub>j</sub> = 25°C	I <sub>F</sub> = 1A	di <sub>F</sub> /dt = - 15A/μs	V <sub>R</sub> = 30V		75	ns
		I <sub>F</sub> = 0.5A	I <sub>R</sub> = 1A		I <sub>rr</sub> = 0.25A		

**TURN-OFF SWITCHING CHARACTERISTICS (Without Series Inductance)**

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t <sub>IRM</sub>	di <sub>F</sub> /dt = - 32A/μs	V <sub>CC</sub> = 200 V I <sub>F</sub> = 8A L <sub>p</sub> ≤ 0.05μH T <sub>j</sub> = 100°C See figure 11			75	ns
	di <sub>F</sub> /dt = - 64A/μs			50		
I <sub>RM</sub>	di <sub>F</sub> /dt = - 32A/μs				2.2	A
	di <sub>F</sub> /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 <sub>j</sub> = 100°C di <sub>F</sub> /dt = - 8A/μs	V <sub>CC</sub> = 120V L <sub>p</sub> = 9μH	I <sub>F</sub> = I <sub>F(AV)</sub> See note See figure 12		3.3		

Note : Applicable to BYT 16P-400 only

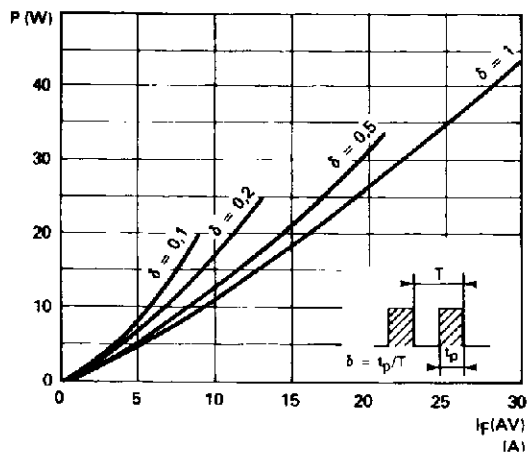
To evaluate the conduction losses use the following equations:

V<sub>F</sub> = 1.1 + 0.024 I<sub>F</sub>

P = 1.1 x I<sub>F(AV)</sub> + 0.024 I<sub>F(RMS)</sub><sup>2</sup> (1 leg)

P = 1.1 x I<sub>F(AV)</sub> + 0.012 I<sub>F(RMS)</sub><sup>2</sup> (2 legs)

**Figure 1. Low frequency power losses versus average current**



**Figure 2. Peak current versus form factor**

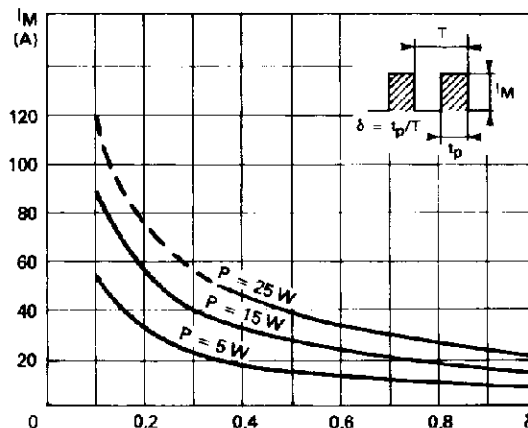


Figure 3. Non repetitive peak surge current versus overload duration

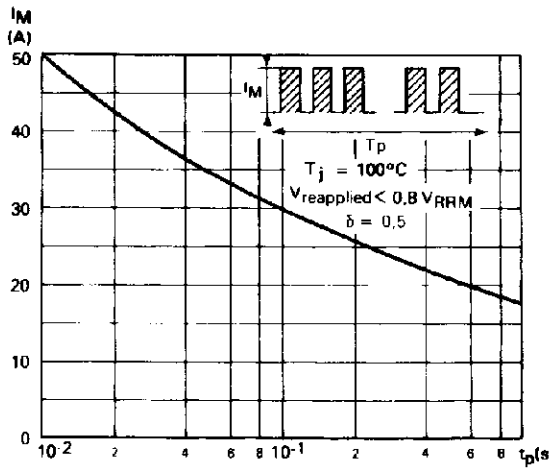


Figure 4. Thermal impedance versus pulse width

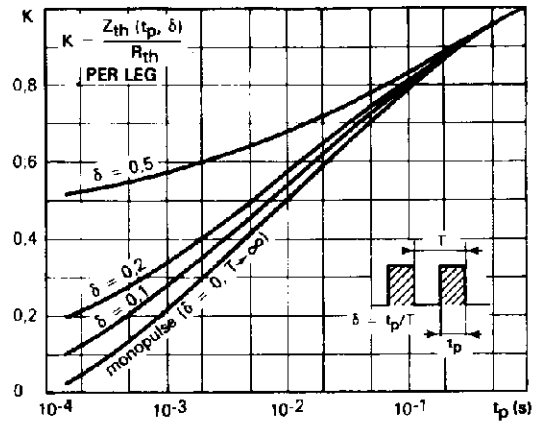


Figure 5. Voltage drop versus forward current

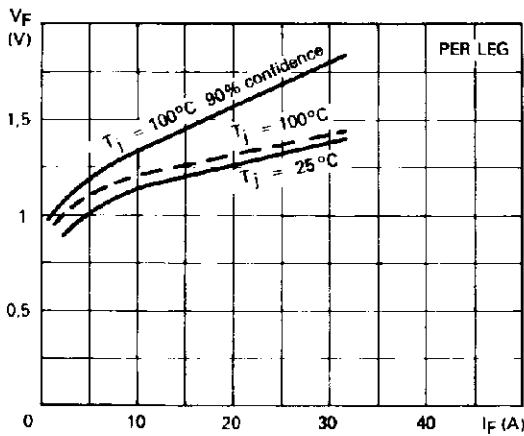


Figure 6. Recovery charge versus di\_F/dt

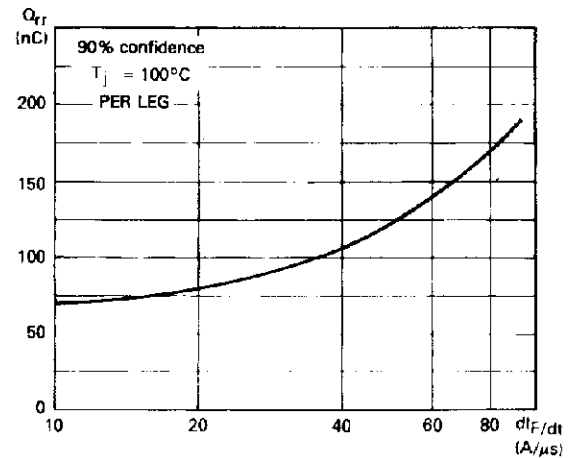


Figure 7. Recovery time versus di\_F/dt

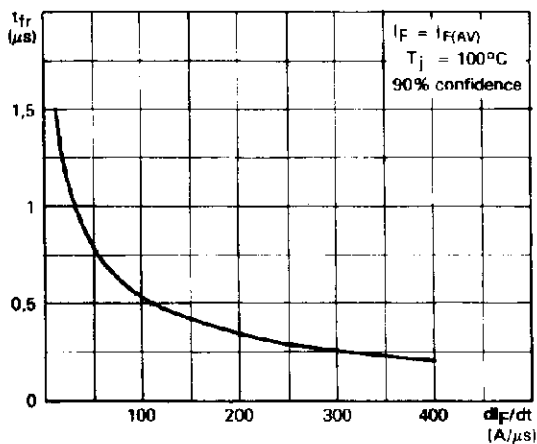


Figure 8. Peak reverse current versus di\_F/dt

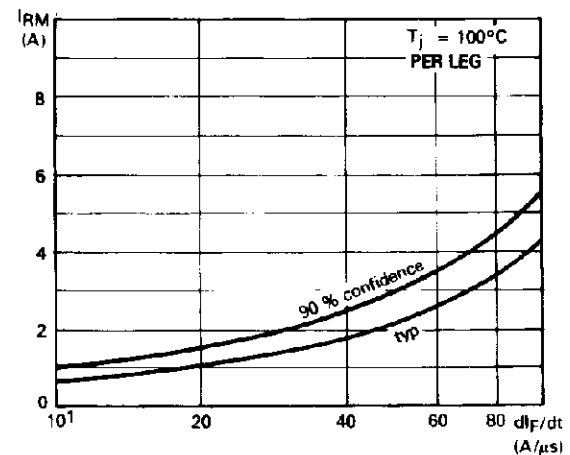


Figure 9. Peak forward voltage versus  $di_F/dt$ .

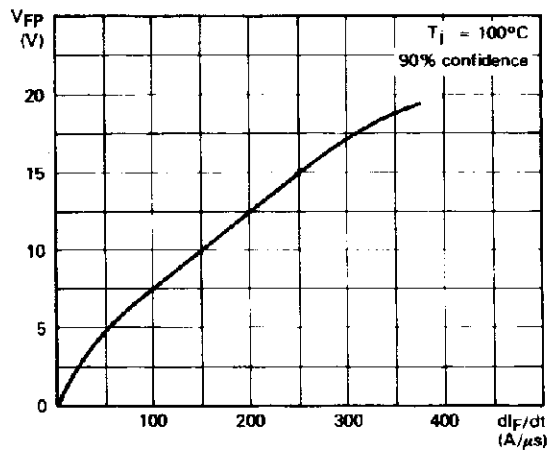


Figure 10. Dynamic parameters versus junction temperature.

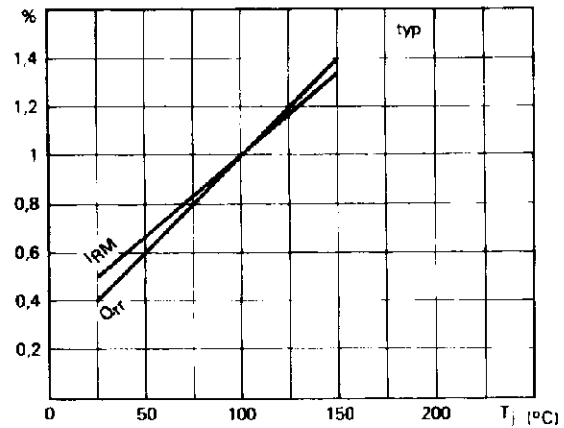


Figure 11. Turn-off switching characteristics (without series inductance).

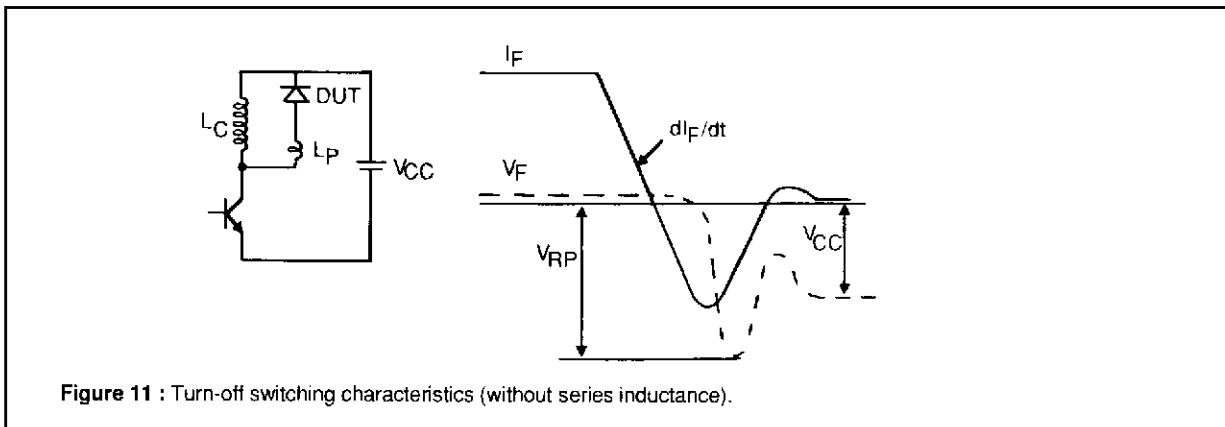
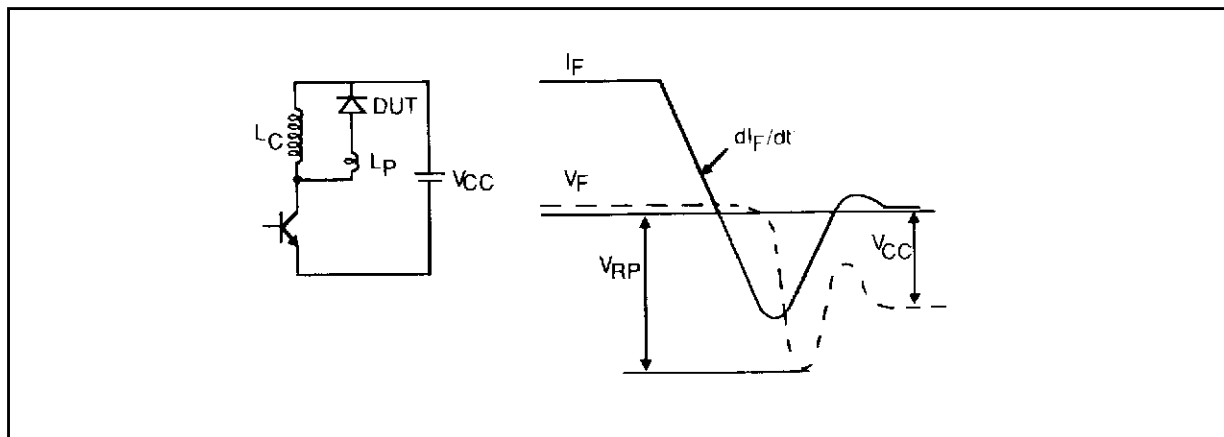
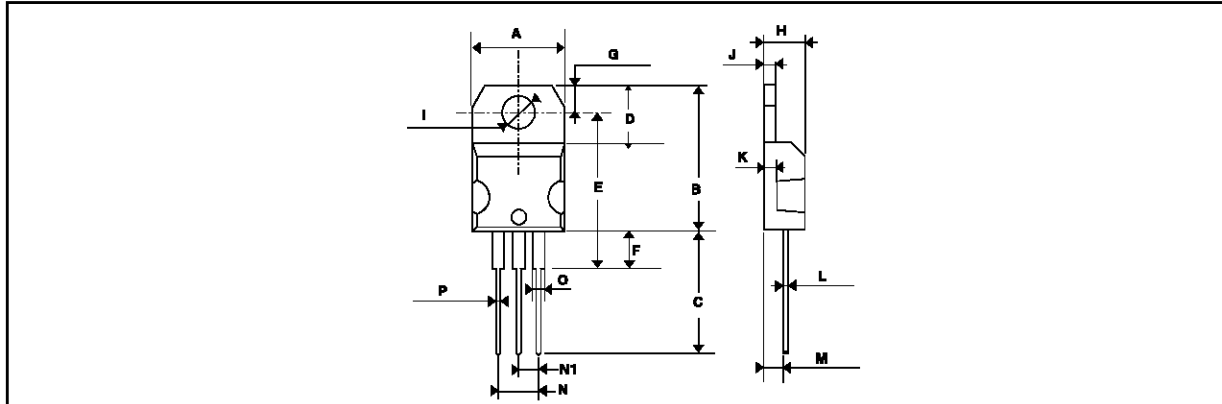


Figure 11 : Turn-off switching characteristics (without series inductance).

Figure 12. Turn-off switching characteristics (without series inductance)



**PACKAGE MECHANICAL DATA :**  
TO 220 AB 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
N1	2.40	2.70	0.094	0.106
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: 2.47g

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