

BYT16P-400

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode Total	3.75 2	°C/W
$R_{th(c)}$		Coupling	0.25	

When the diodes 1 and 2 are used simultaneously:

$$\Delta T_j(\text{diode 1}) = P(\text{diode}) \times R_{th(j-c)} (\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$$

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
V_F^*	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 8\text{ A}$			1.5	V
		$T_j = 100^\circ\text{C}$				1.4	
I_R^{**}	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			15	μA
		$T_j = 100^\circ\text{C}$				2.5	

Pulse test : * $t_p = 380\text{ }\mu\text{s}$, $\delta < 2\%$

** $t_p = 5\text{ ms}$, $\delta < 2\%$

To evaluate the conduction losses use the following equation:

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

RECOVERY CHARACTERISTICS

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{ A}$ $V_R = 30\text{ V}$ $dI_F/dt = -15\text{ A}/\mu\text{s}$			75	ns
		$I_F = 0.5\text{ A}$ $I_R = 1\text{ A}$ $I_{rr} = 0.25\text{ A}$			35	

TURN-OFF SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	Maximum reverse recovery time	$dI_F/dt = -32\text{ A}/\mu\text{s}$	$V_{CC} = 200\text{ V}$ $I_F = 8\text{ A}$ $L_p \leq 0.05\text{ }\mu\text{H}$ $T_j = 100^\circ\text{C}$ (see fig. 11)			75	ns
		$dI_F/dt = -64\text{ A}/\mu\text{s}$				50	
I_{RM}	Maximum reverse recovery current	$dI_F/dt = -32\text{ A}/\mu\text{s}$	(see fig. 11)			2.2	A
		$dI_F/dt = -64\text{ A}/\mu\text{s}$				2.8	
$C = \frac{V_{RP}}{V_{CC}}$	Turn-off overvoltage coefficient	$T_j = 100^\circ\text{C}$ $V_{CC} = 120\text{ V}$ $I_F = I_{F(AV)}$ $dI_F/dt = -8\text{ A}/\mu\text{s}$ $L_p = 9\text{ }\mu\text{H}$ (see fig. 12)			3.3		/

Fig. 1: Low frequency power losses versus average current.

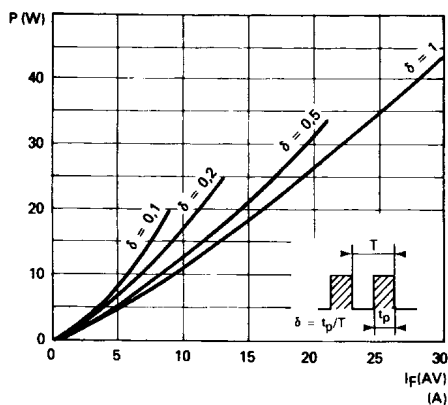


Fig. 2: Peak current versus form factor.

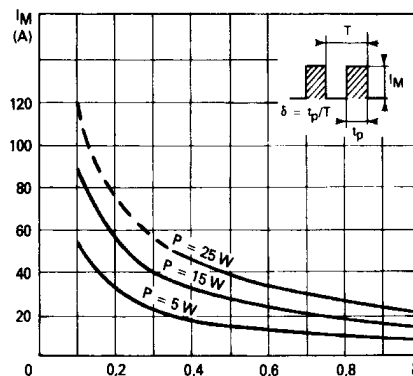


Fig. 3: Non repetitive peak surge current versus overload duration.

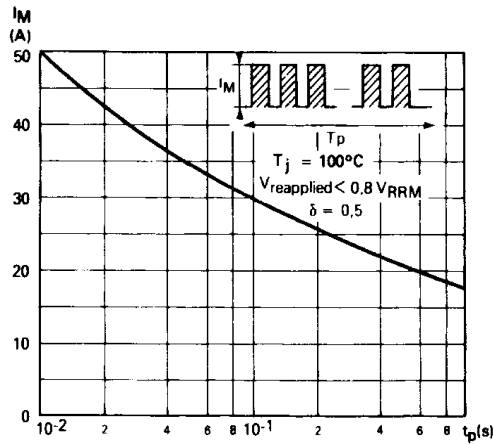


Fig. 4: Thermal impedance versus pulse width.

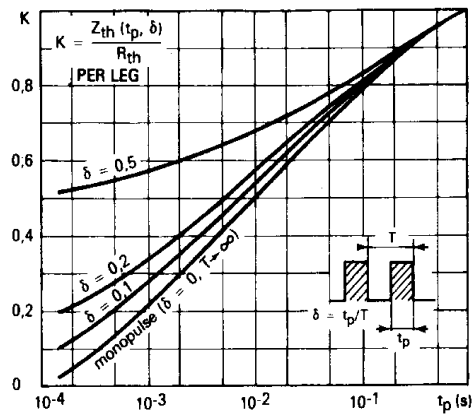


Fig. 5: Voltage drop versus forward current.

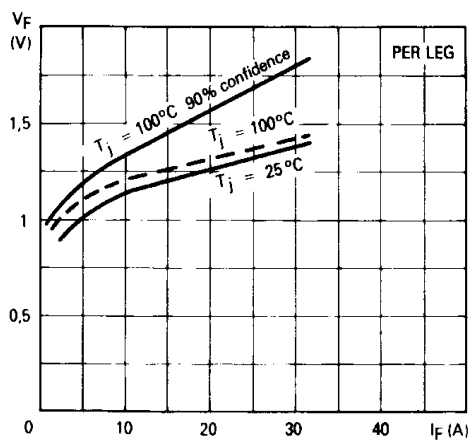


Fig. 6: Recovery charge versus di_F/dt .

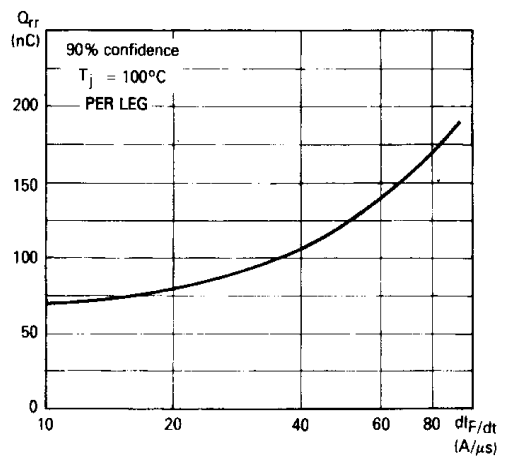


Fig. 7: Recovery time versus di_F/dt .

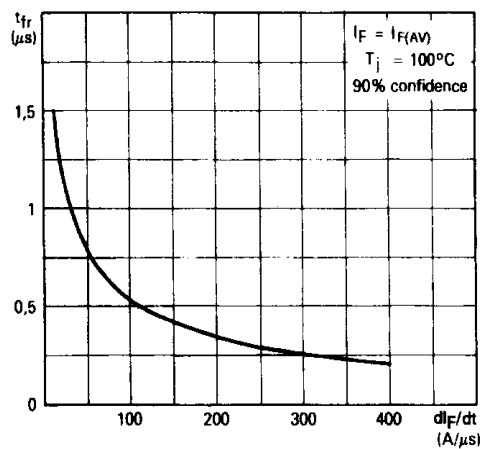


Fig. 8: Peak reverse current versus di_F/dt .

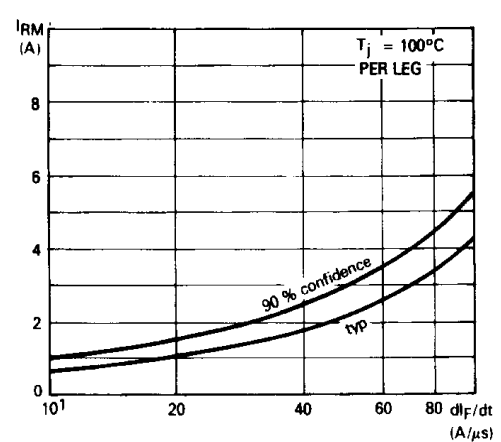


Fig. 9: Peak forward voltage versus di_F/dt .

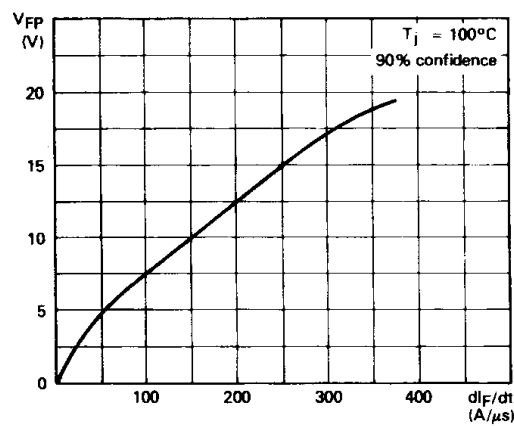


Fig. 10: Dynamic parameters versus junction temperature.

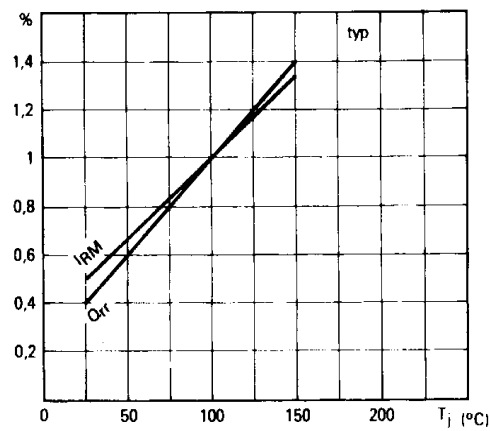


Fig. 11: Turn-off switching characteristics (without series inductance).

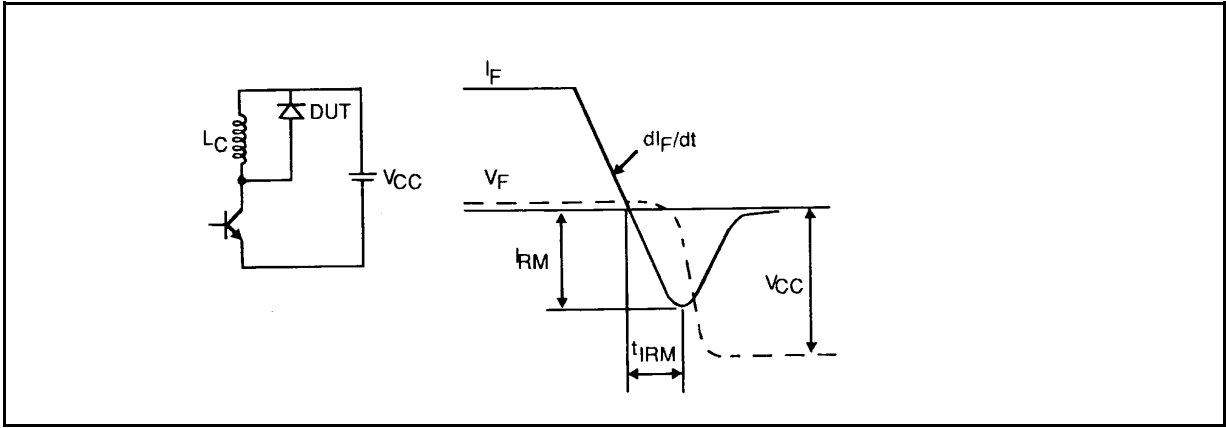
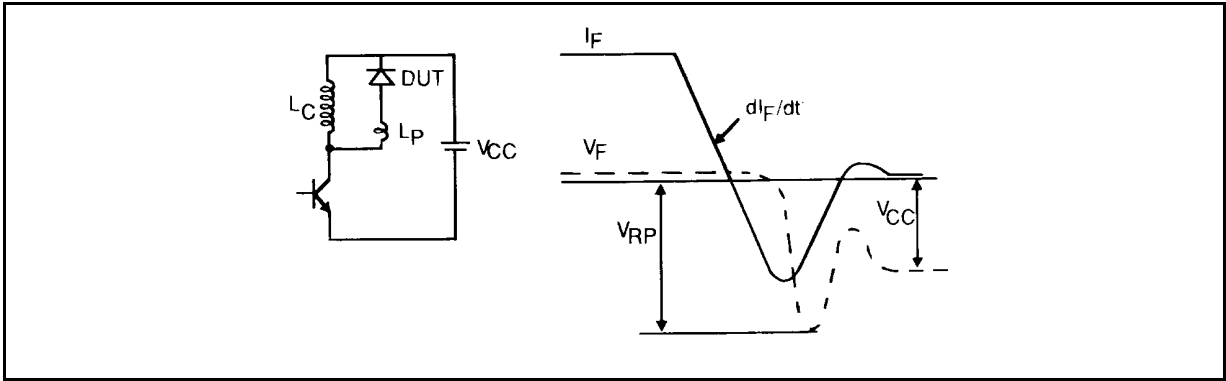
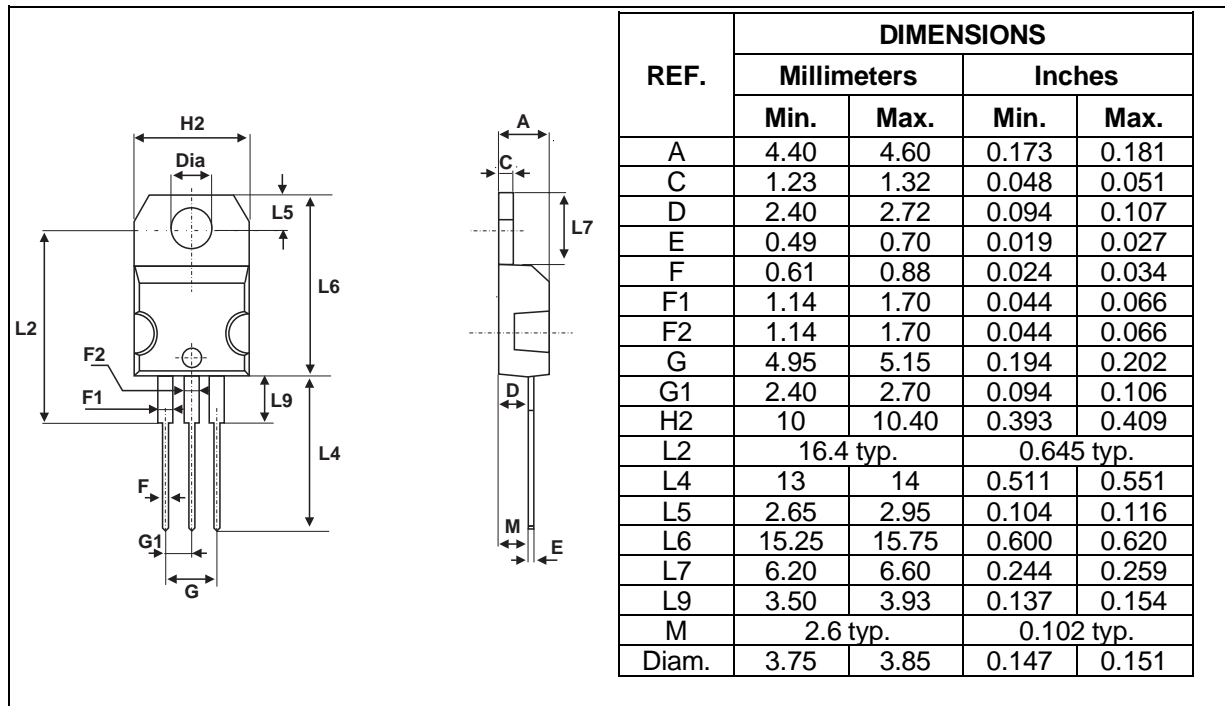


Fig. 12: Turn-off switching characteristics (with series inductance).



PACKAGE MECHANICAL DATA
TO-220AB


Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BYT16P-400	BYT16P-400	TO-220AB	2.03 g.	30	Tube

- Cooling method: by conduction (C)
- Recommended torque value: 0.08 N.m.
- Maximum torque value: 0.10 N.m.
- Epoxy meets UL94,V0

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