

BYT60P-400 / BYT260PIV-400 / BYT261PIV-400

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit	
$R_{th(j-c)}$	Junction to case	ISOTOP	Per diode	0.8	°C/W
			Total	0.45	
		SOD93	Total	0.7	
$R_{th(c)}$		Coupling	0.1	°C/W	

When the diodes 1 and 2 are used simultaneously :

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

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
V_F^*	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 60\text{ A}$			1.5	V
		$T_j = 100^\circ\text{C}$				1.4	
I_R^{**}	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			60	μA
		$T_j = 100^\circ\text{C}$				6	mA

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

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

To evaluate the conduction losses use the following equation:

$$P = 1.1 \times I_{F(AV)} + 0.0045 I_{F(RMS)}^2$$

RECOVERY CHARACTERISTICS (per diode)

Symbol	Test Conditions		Min.	Typ.	Max.	Unit
t_{rr}	$T_j = 25^\circ\text{C}$	$I_F = 1\text{ A}$ $V_R = 30\text{ V}$ $di_F/dt = -15\text{ A}/\mu\text{s}$			100	ns
		$I_F = 0.5\text{ A}$ $I_R = 1\text{ A}$ $I_{rr} = 0.25\text{ A}$			50	

TURN-OFF SWITCHING CHARACTERISTICS

Symbol	Parameter	Test Conditions		Min.	Typ.	Max.	Unit
t_{IRM}	Maximum reverse recovery time	$di_F/dt = -240\text{ A}/\mu\text{s}$	$V_{CC} = 200\text{ V}$ $I_F = 60\text{ A}$ $L_p \text{ @ } 0.05\ \mu\text{H}$ $T_j = 100^\circ\text{C}$ (see fig. 13)			75	ns
		$di_F/dt = -480\text{ A}/\mu\text{s}$				50	
I_{RM}	Maximum reverse recovery current	$di_F/dt = -240\text{ A}/\mu\text{s}$	$V_{CC} = 200\text{ V}$ $I_F = 60\text{ A}$ $L_p \text{ @ } 0.05\ \mu\text{H}$ $T_j = 100^\circ\text{C}$ (see fig. 13)			18	A
		$di_F/dt = -480\text{ A}/\mu\text{s}$				24	
$C = \frac{V_{RP}}{V_{CC}}$	Turn-off overvoltage coefficient	$T_j = 100^\circ\text{C}$ $V_{CC} = 120\text{ V}$ $I_F = I_{F(AV)}$ $di_F/dt = -60\text{ A}/\mu\text{s}$ $L_p = 0.8\ \mu\text{H}$ (see fig. 14)			3.3	4	/

Fig. 1: Average forward power dissipation versus average forward current (per diode, for ISOTOP).

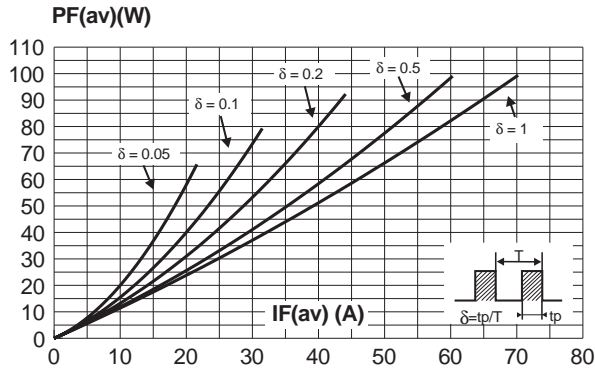


Fig. 2: Peak current versus form factor (per diode, for ISOTOP).

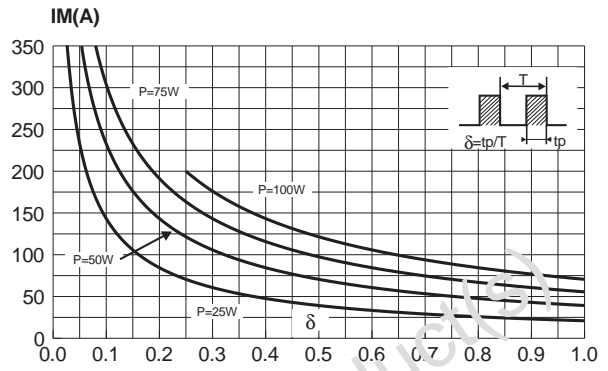


Fig. 3: Average forward current versus ambient temperature ($\delta=0.5$, per diode for ISOTOP)

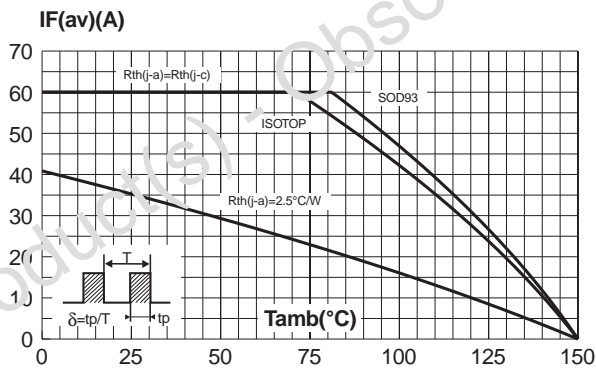


Fig. 4-1: Non repetitive surge peak forward current versus overload duration (SOD93).

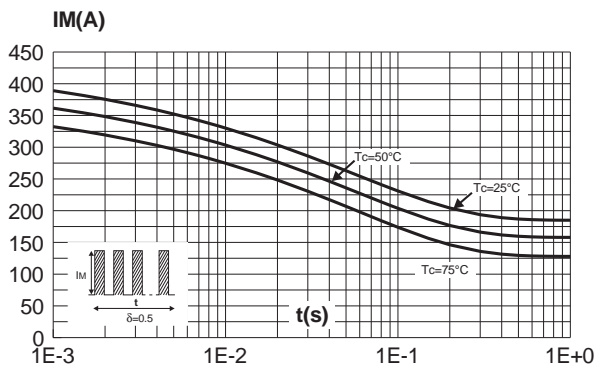


Fig. 4-2: Non repetitive surge peak forward current versus overload duration (per diode, for ISOTOP).

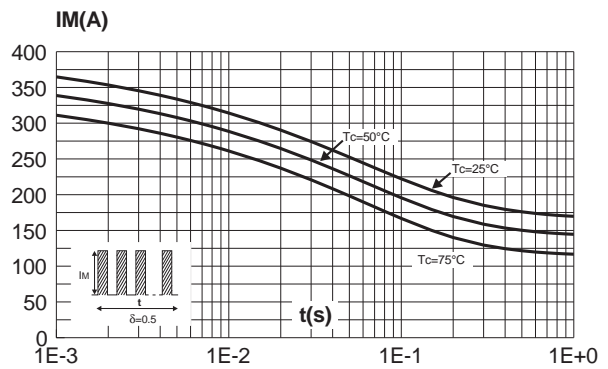


Fig. 5-1: Relative variation of thermal impedance junction to case versus pulse duration (per diode for ISOTOP).

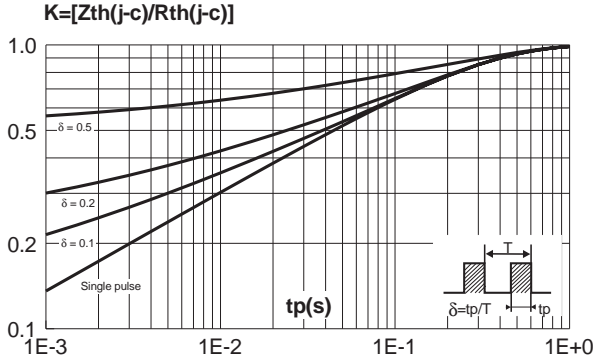


Fig. 5-2: Relative variation of thermal impedance junction to case versus pulse duration (SOD93).

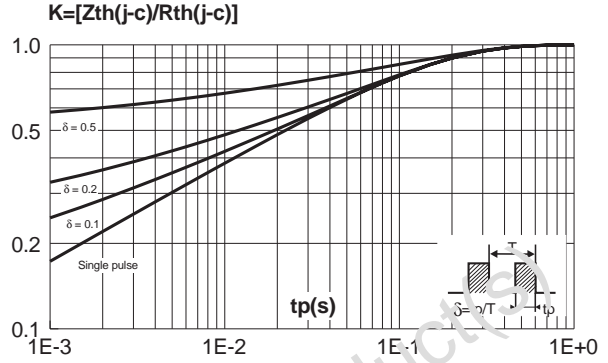


Fig. 6: Forward voltage drop versus forward current (maximum values, per diode for ISOTOP).

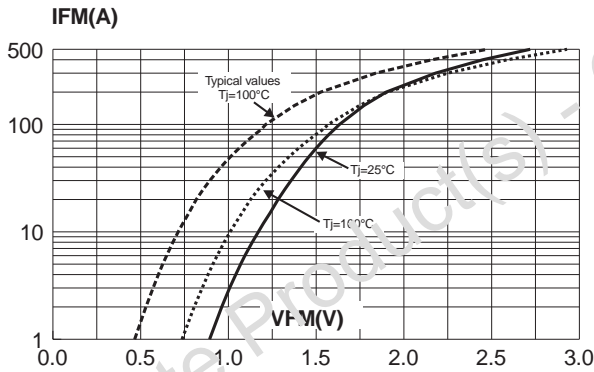


Fig. 7: Junction capacitance versus reverse voltage applied (typical values, per diode for ISOTOP).

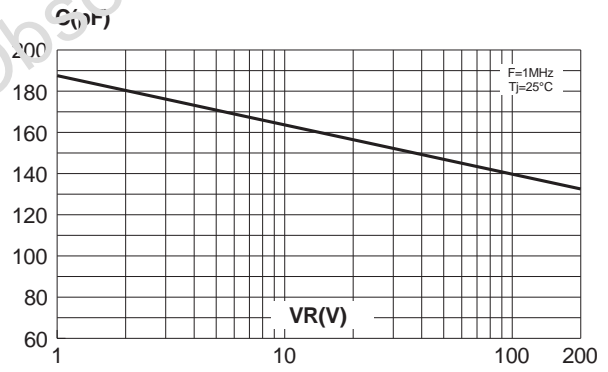


Fig. 8: Recovery charges versus dIF/dt (per diode for ISOTOP).

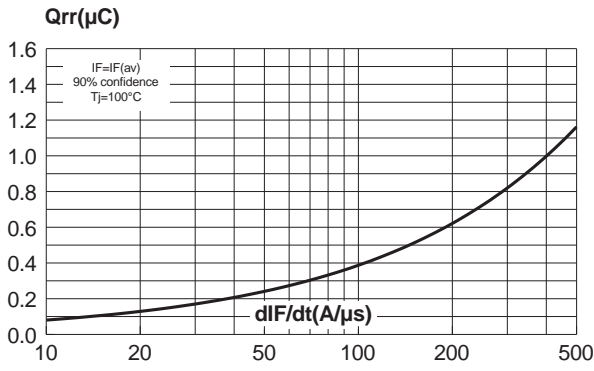


Fig. 9: Recovery current versus dIF/dt (per diode for ISOTOP).

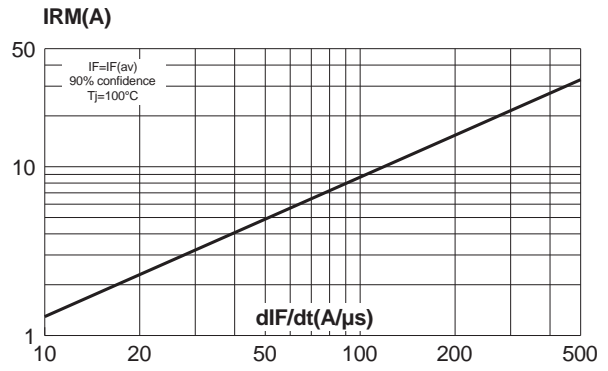


Fig. 10: Transient peak forward voltage versus di_F/dt (per diode for ISOTOP).

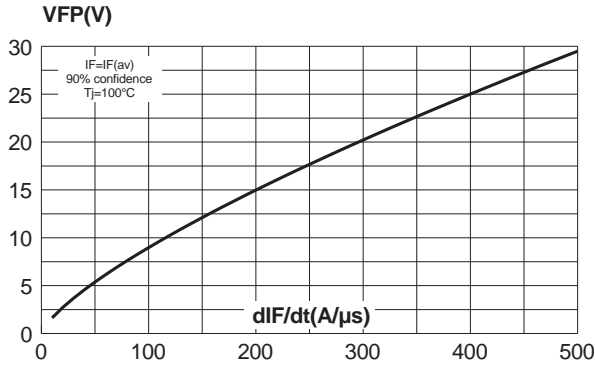


Fig. 11: Forward recovery time versus di_F/dt (per diode for ISOTOP).

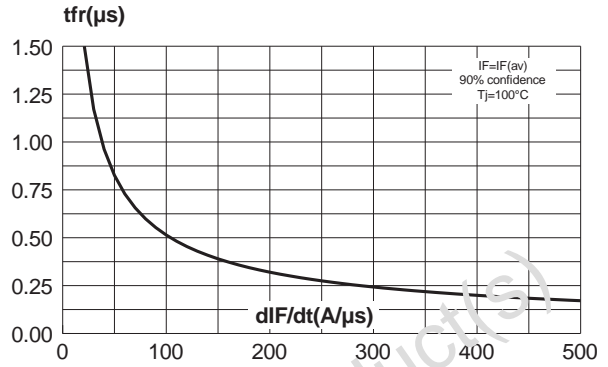


Fig. 12: Dynamic parameters versus junction temperature.

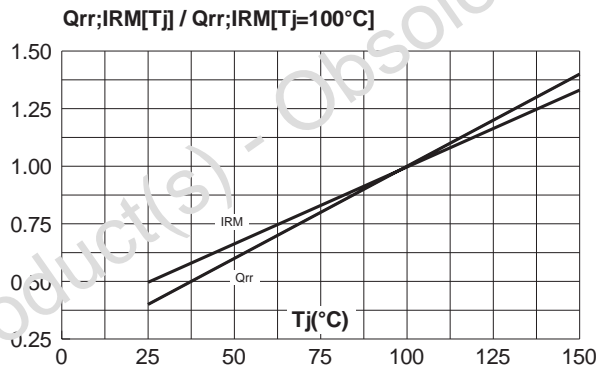


Fig. 13: Turn-off switching characteristics (without serie inductance).

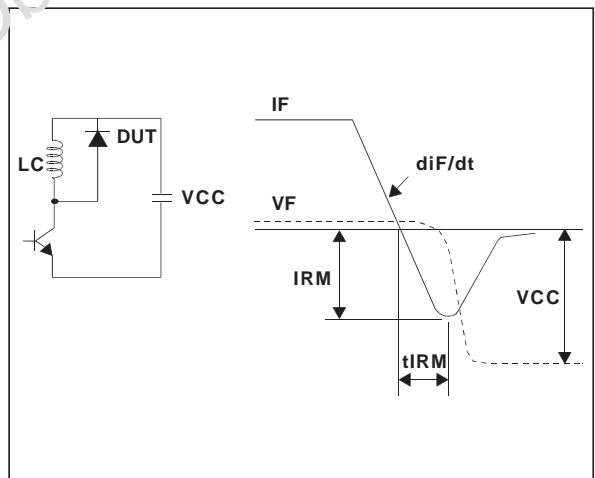
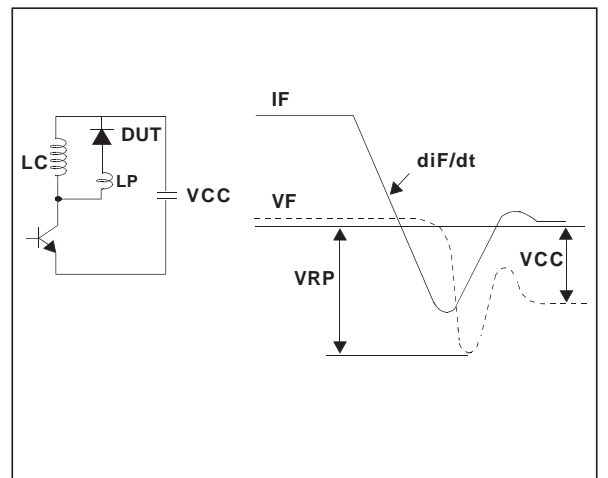
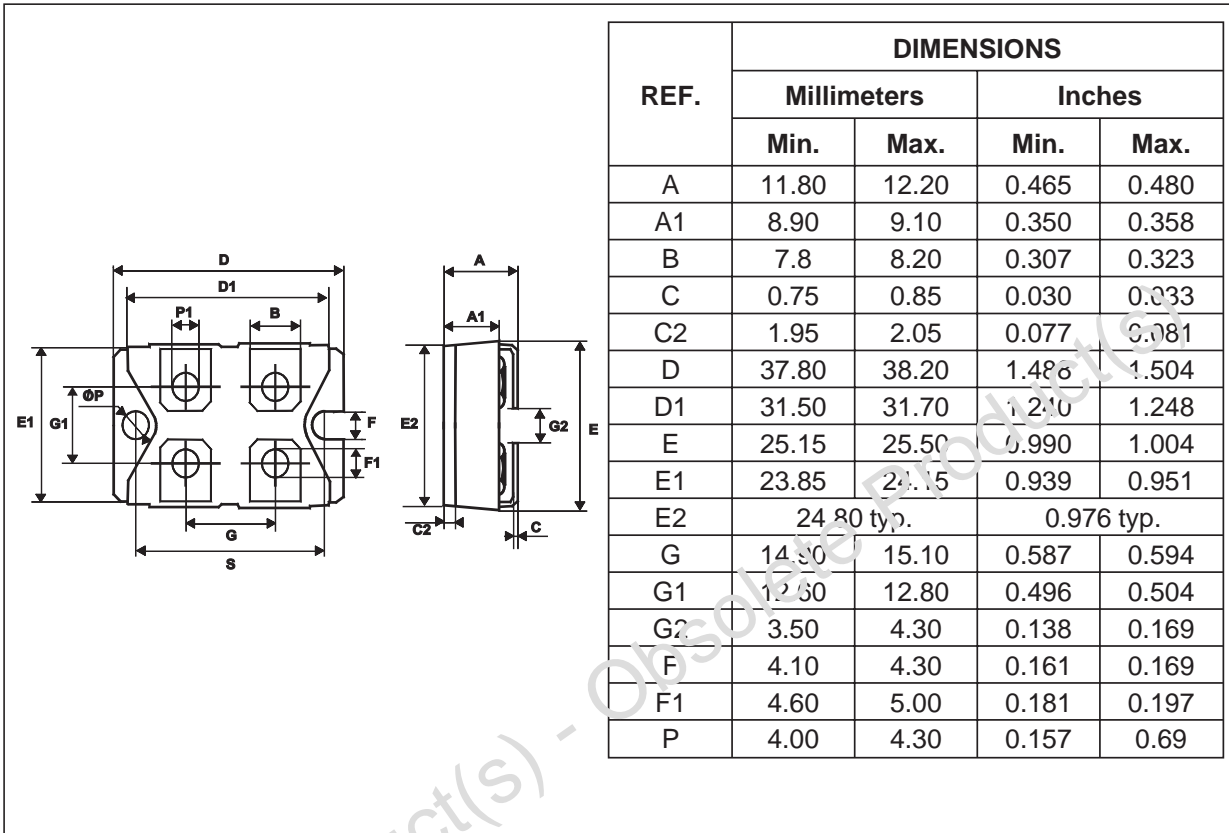


Fig. 14: Turn-off switching characteristics (with serie inductance).

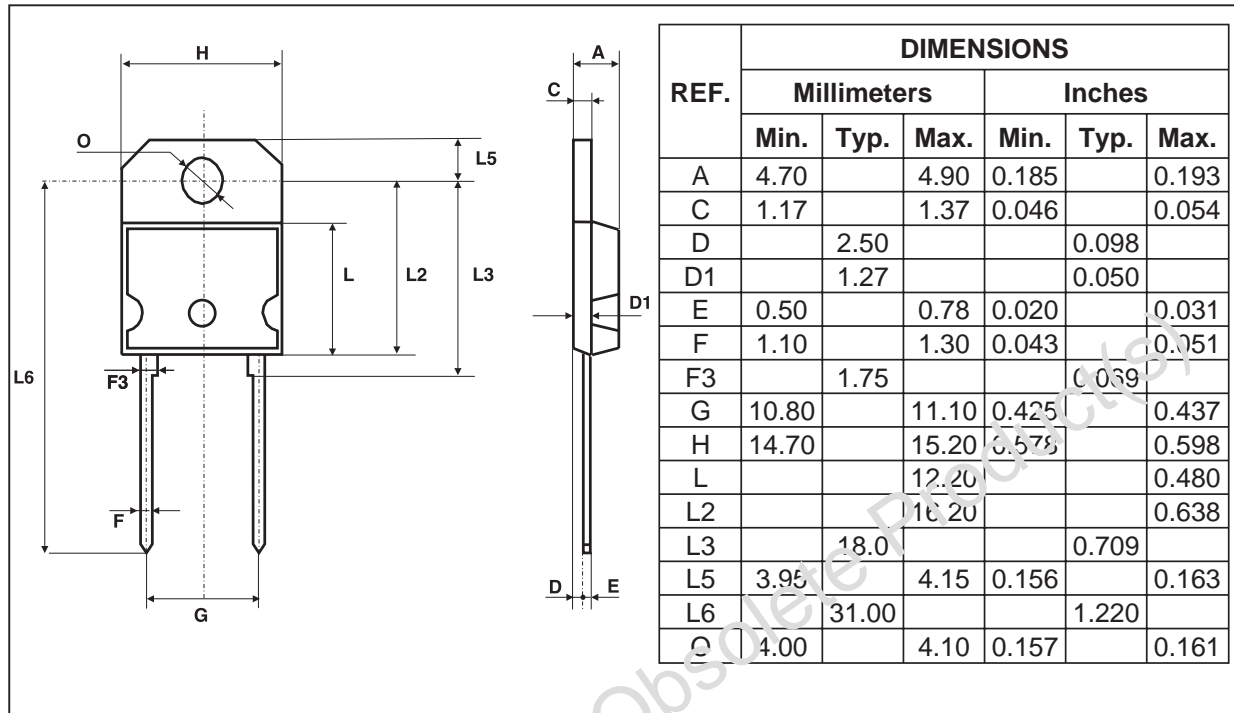


PACKAGE MECHANICAL DATA
ISOTOP



PACKAGE MECHANICAL DATA

SOD93 Plastic



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
BYT60P-400	BYT60P-400	SOD93	3.79 g.	30	Tube
BYT260PIV-400	BYT260PIV-400	ISOTOP	28 g. (without screws)	10	Tube
BYT261PIV-400	BYT261PIV-400	ISOTOP	28 g. (without screws)	10	Tube

- Cooling method: by conduction (C)
- Recommended torque value (ISOTOP): 1.3 N.m (MAX 1.5 N.m) for the 6 x M4 screws. (2 x M4 screws recommended for mounting the package on the heatsink and the 4 screws given with the screw version). The screws supplied with the package are adapted for mounting on a board (or other types of terminals) with a thickness of 0.6 mm min and 2.2 mm max.
- Recommended torque value (SOD93): 0.8 N.m.
- Maximum torque value (SOD93): 1.0 N.m.
- Epoxy meets UL94,V0

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