

STPR1620CG / STPR1620CT / STPR1620CR

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
R _{th(j-c)}	Junction to case	Per diode	3.0	°C/W
		Total	1.8	°C/W
R _{th(c)}		Coupling	0.6	°C/W

When the diodes 1 and 2 are used simultaneously :

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

STATIC ELECTRICAL CHARACTERISTICS

Symbol	Test conditions		Min.	Typ.	Max.	Unit
I _R *	T _j = 25°C	V _R = V _{RRM}			50	μA
	T _j = 100°C			0.2	0.6	mA
V _F **	T _j = 125°C	I _F = 8 A		0.8	0.99	V
	T _j = 125°C	I _F = 16 A		0.95	1.20	
	T _j = 25°C	I _F = 16 A			1.25	

Pulse test : * tp = 5 ms, δ < 2 %

** tp = 380 μs, δ < 2 %

To evaluate the conduction losses use the following equation :

$$P = 0.78 \times I_{F(AV)} + 0.026 \times I_{F(RMS)}^2$$

RECOVERY CHARACTERISTICS

Symbol	Test conditions		Min.	Typ.	Max.	Unit
trr	T _j = 25°C	I _F = 0.5A I _R = 1A			30	ns
tfr	T _j = 25°C	I _F = 3A V _{FR} = 1.1 x V _F max		20		ns
V _{rrm}	T _j = 25°C	I _F = 3A		3		V

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

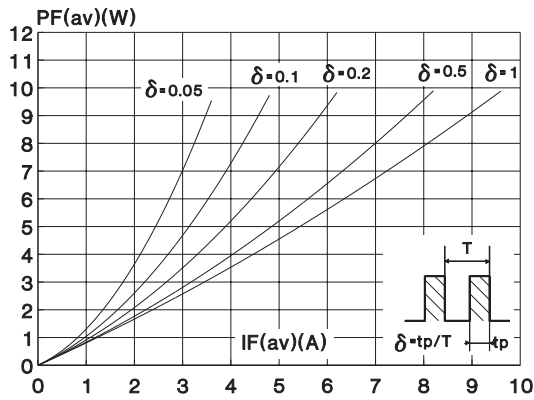


Fig. 2: Peak current versus form factor (per diode).

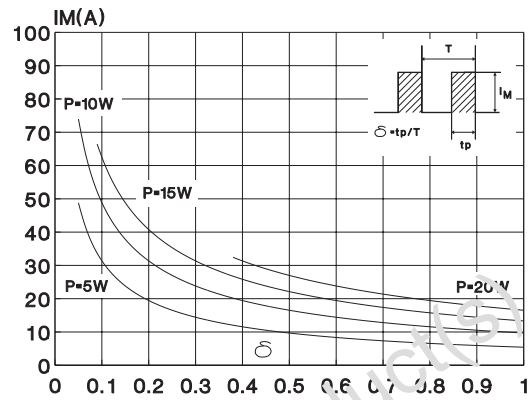


Fig. 3: Average current versus ambient temperature ($\delta : 0.5$, per diode).

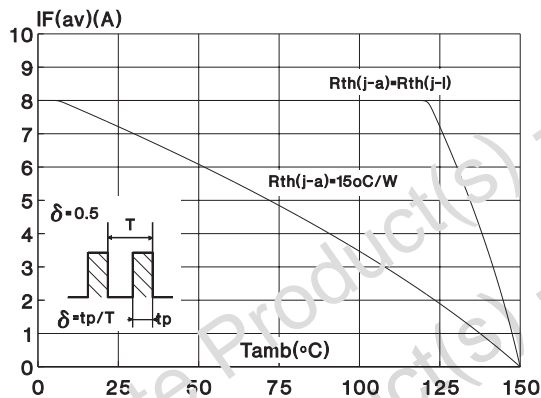


Fig. 4: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

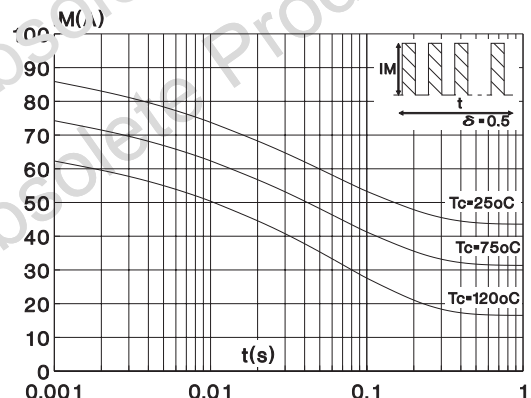


Fig. 5: Relative variation of thermal transient impedance junction to case versus pulse duration (per diode).

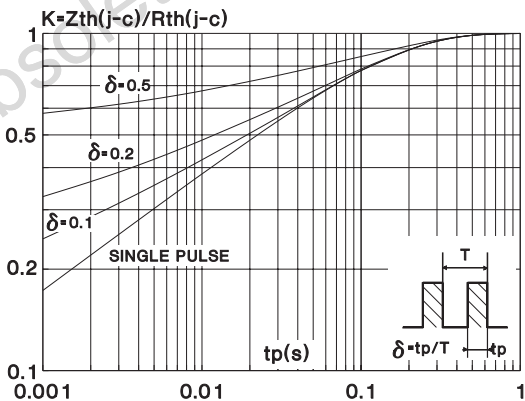
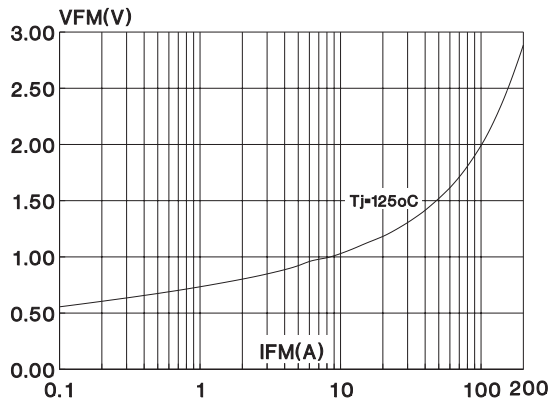


Fig. 6: Forward voltage drop versus forward current (maximum values, per diode).



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

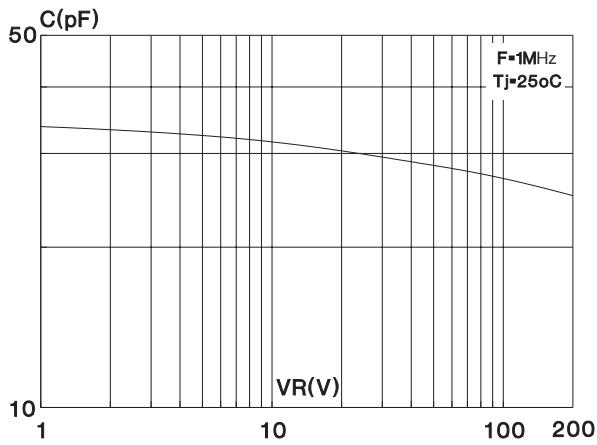


Fig. 8: Recovery charges versus di/dt (per diode).

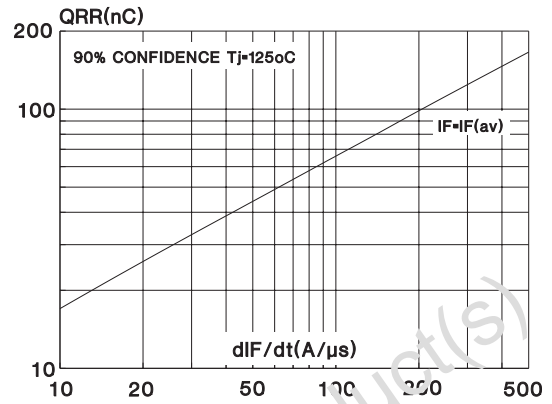


Fig. 9: Peak reverse current versus di/dt (per diode).

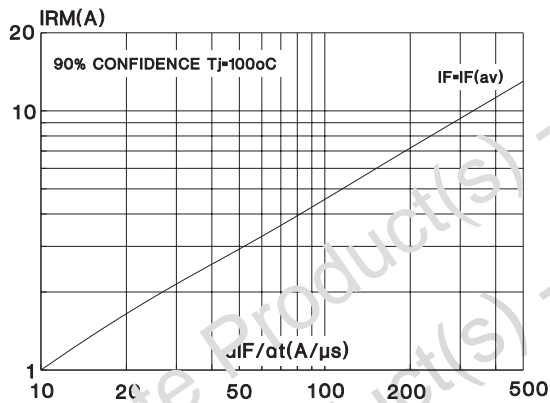


Fig. 10: Dynamic parameters versus junction temperature (per diode).

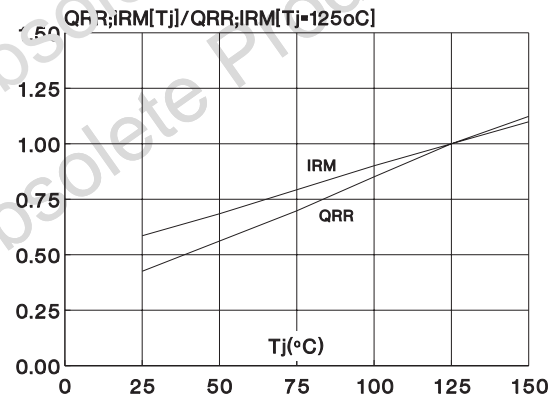
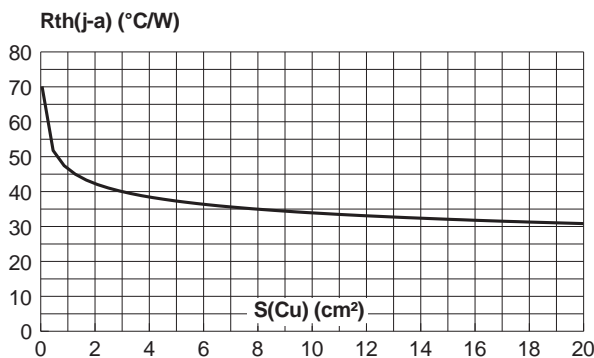
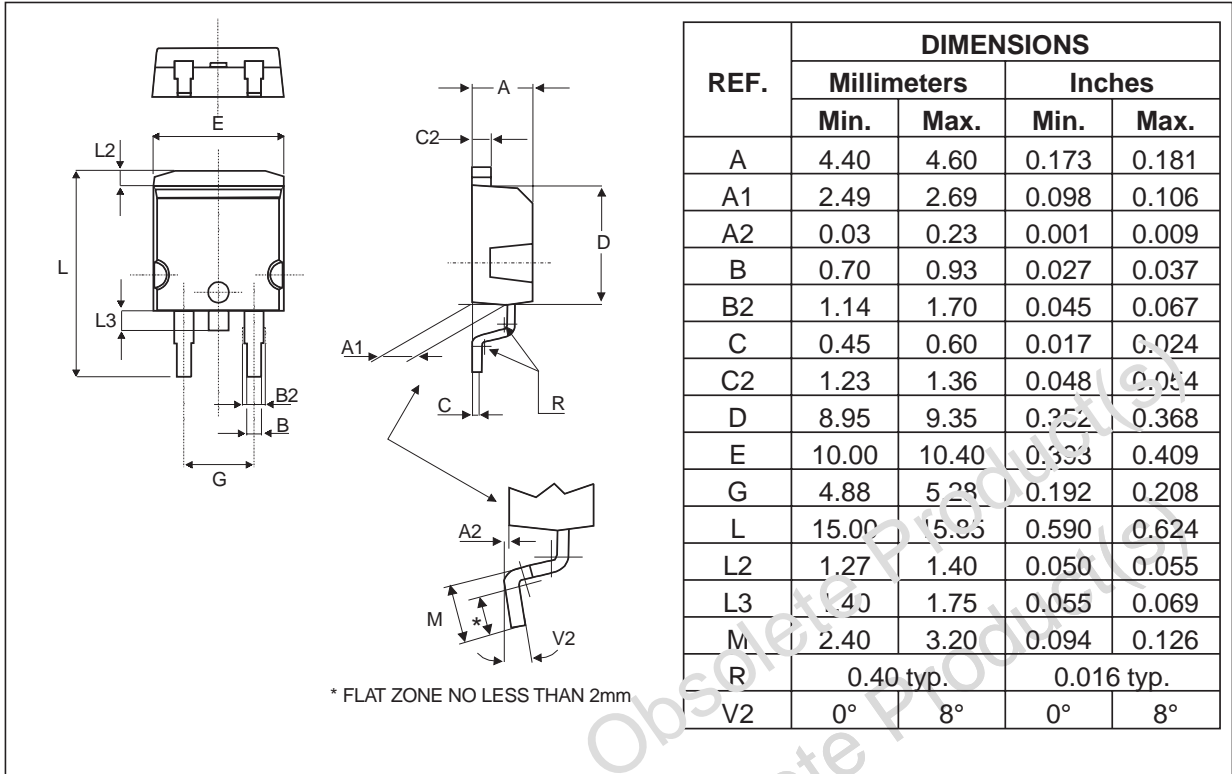


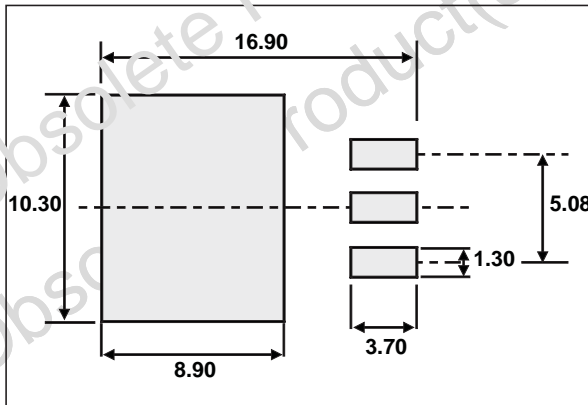
Fig. 11: Thermal resistance junction to ambient versus copper surface under tab (epoxy printed circuit board, $C_U = 35\mu\text{s}$) (STPR1620CG only).



PACKAGE MECHANICAL DATA
D²PAK (Plastic)

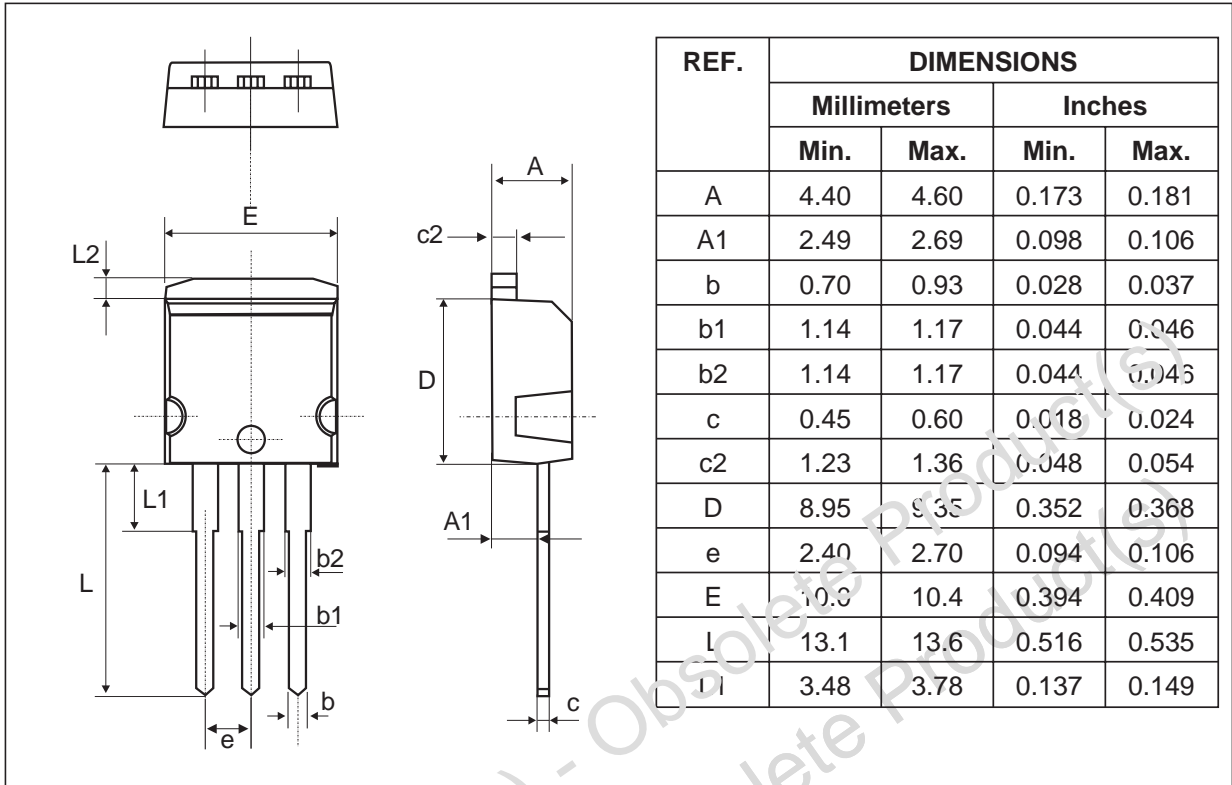


FOOT PRINT (in millimeters)



STPR1620CG / STPR1620CT / STPR1620CR

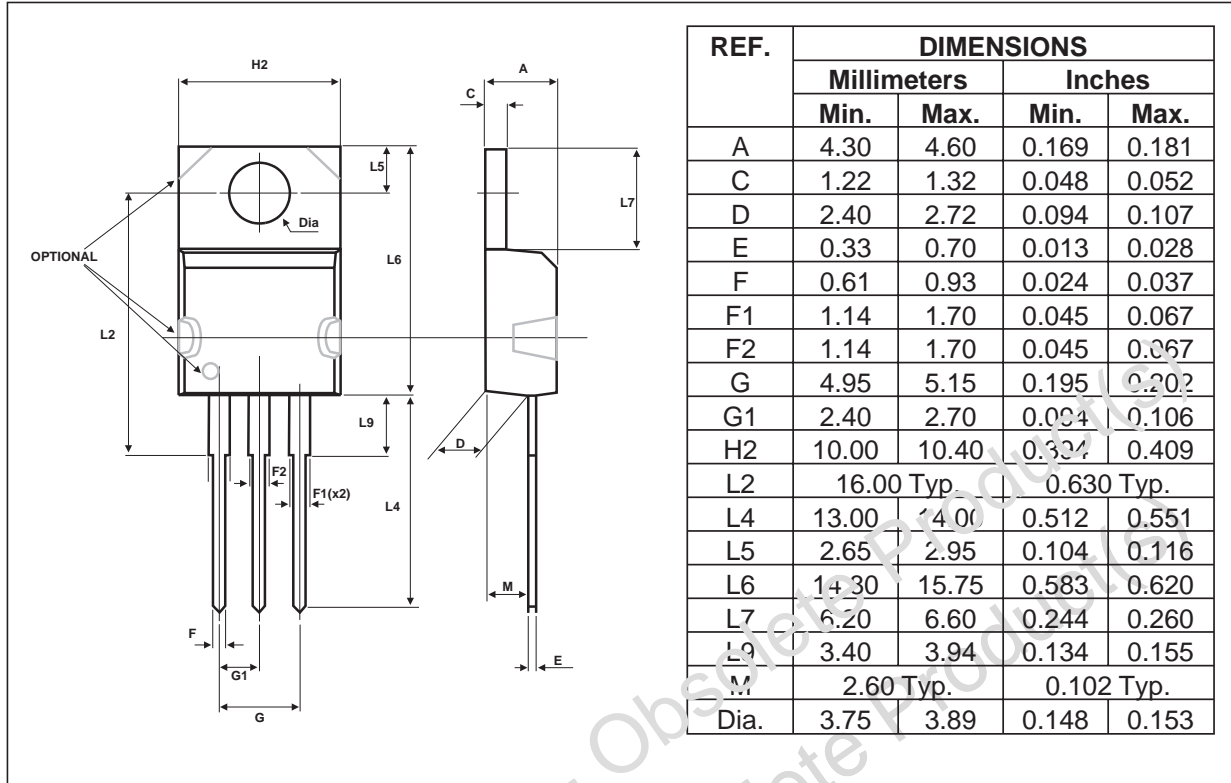
PACKAGE MECHANICAL DATA
I²PAK



Obsolete Product(s) - Obsolete Product(s)
 Obsolete Product(s) - Obsolete Product(s)



PACKAGE MECHANICAL DATA
TO-220AB (JEDEC outline)



Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPR1620CT	STPR1620CT	TO-220AB	2.23 g	50	Tube
STPR1620CG	STPR1620CG	D ² PAK	1.48 g	50	Tube
STPR1620CG-TR	STPR1620CG	D ² PAK	1.48 g	1000	Tape & reel
STPR1620CR	STPR1620	I ² PAK	1.49 g	50	Tube

- Cooling method : by conduction (C)
- Recommended torque value : 0.55N.m.
- Maximum torque value : 0.7N.m.
- Epoxy meets UL94,V0

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