

STPS40L40CT/CW

THERMAL RESISTANCES

Symbol	Parameter		Value	Unit
$R_{th(j-c)}$	Junction to case	Per diode	1.5	°C/W
		Total	0.8	
$R_{th(c)}$		Coupling	0.1	°C/W

When the diodes 1 and 2 are used simultaneously :
 $\Delta T_j(\text{diode 1}) = P(\text{diode 1}) \times R_{th(j-c)}(\text{Per diode}) + P(\text{diode 2}) \times R_{th(c)}$

STATIC ELECTRICAL CHARACTERISTICS (per diode)

Symbol	Parameter	Tests Conditions		Min.	Typ.	Max.	Unit
I_R^*	Reverse leakage current	$T_j = 25^\circ\text{C}$	$V_R = V_{RRM}$			0.8	mA
		$T_j = 100^\circ\text{C}$			30	70	mA
V_F^*	Forward voltage drop	$T_j = 25^\circ\text{C}$	$I_F = 20\text{ A}$			0.53	V
		$T_j = 125^\circ\text{C}$	$I_F = 20\text{ A}$		0.42	0.49	
		$T_j = 25^\circ\text{C}$	$I_F = 40\text{ A}$			0.69	
		$T_j = 125^\circ\text{C}$	$I_F = 40\text{ A}$		0.6	0.7	

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

To evaluate the conduction losses use the following equation :
 $P = 0.28 \times I_{F(AV)} + 0.0105 I_{F(RMS)}^2$

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

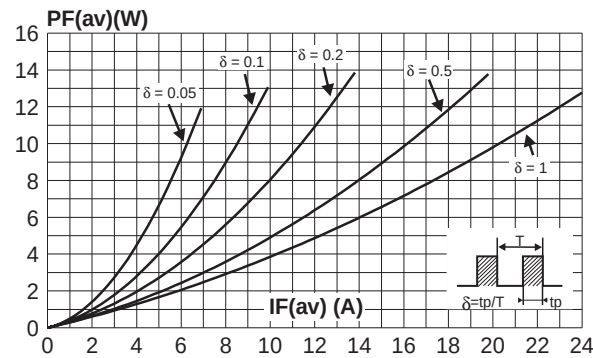


Fig. 3: Normalized avalanche power derating versus pulse duration.

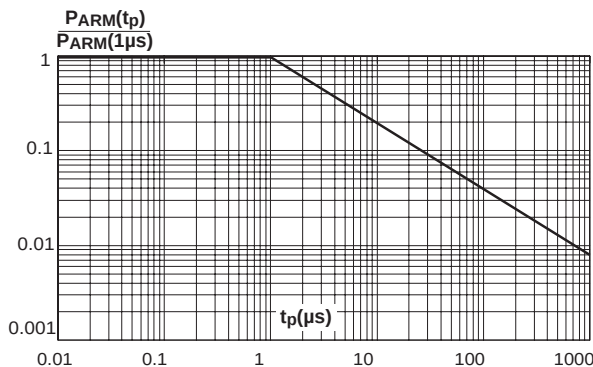


Fig. 2: Average current versus ambient temperature ($\delta = 0.5$, per diode).

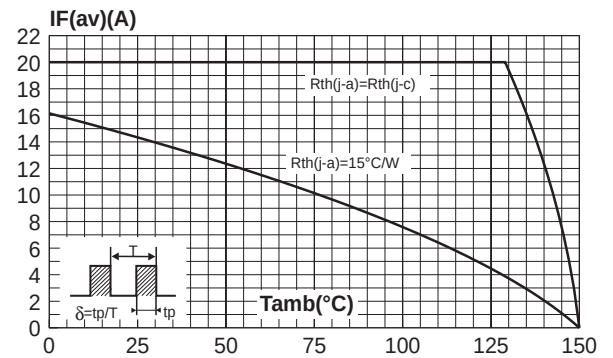


Fig. 4: Normalized avalanche power derating versus junction temperature.

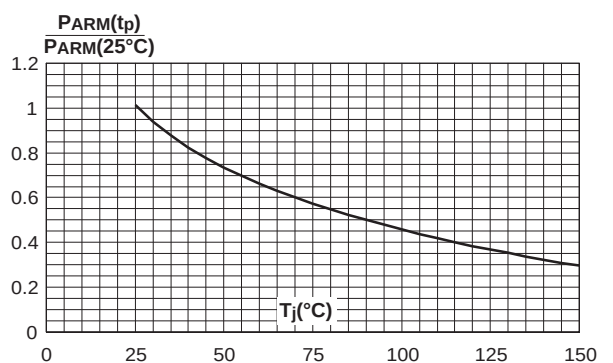


Fig. 5: Non repetitive surge peak forward current versus overload duration (maximum values, per diode).

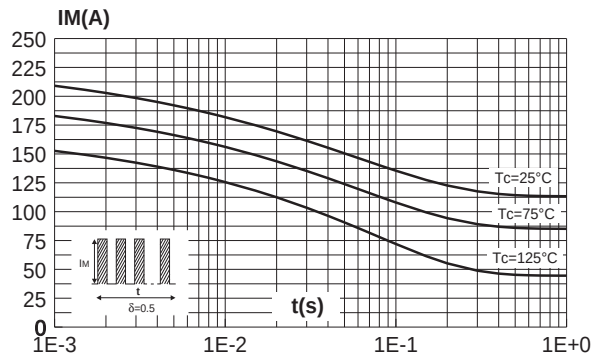


Fig. 6: Relative variation of thermal impedance junction to case versus pulse duration.

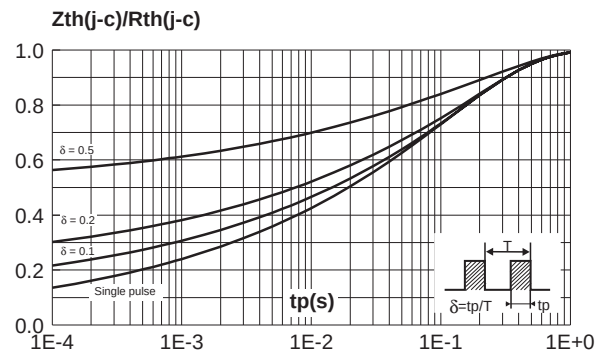


Fig. 7: Reverse leakage current versus reverse voltage applied (typical values, per diode).

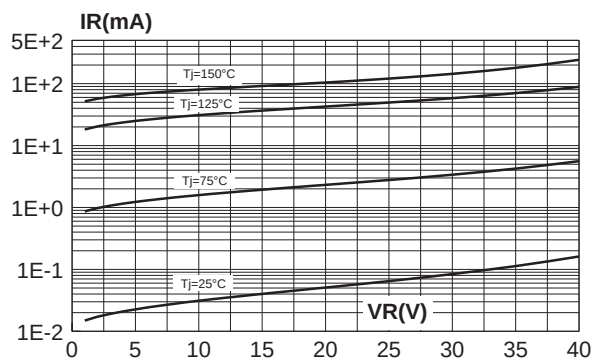


Fig. 8: Junction capacitance versus reverse voltage applied (typical values, per diode).

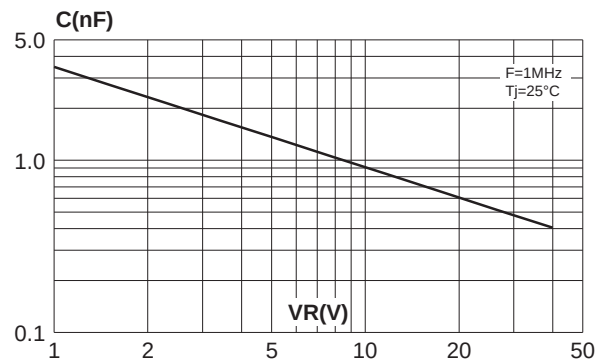
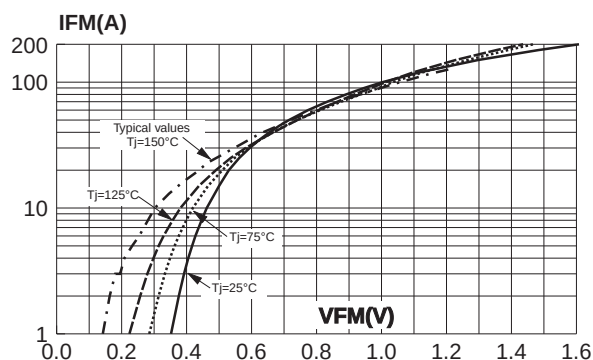
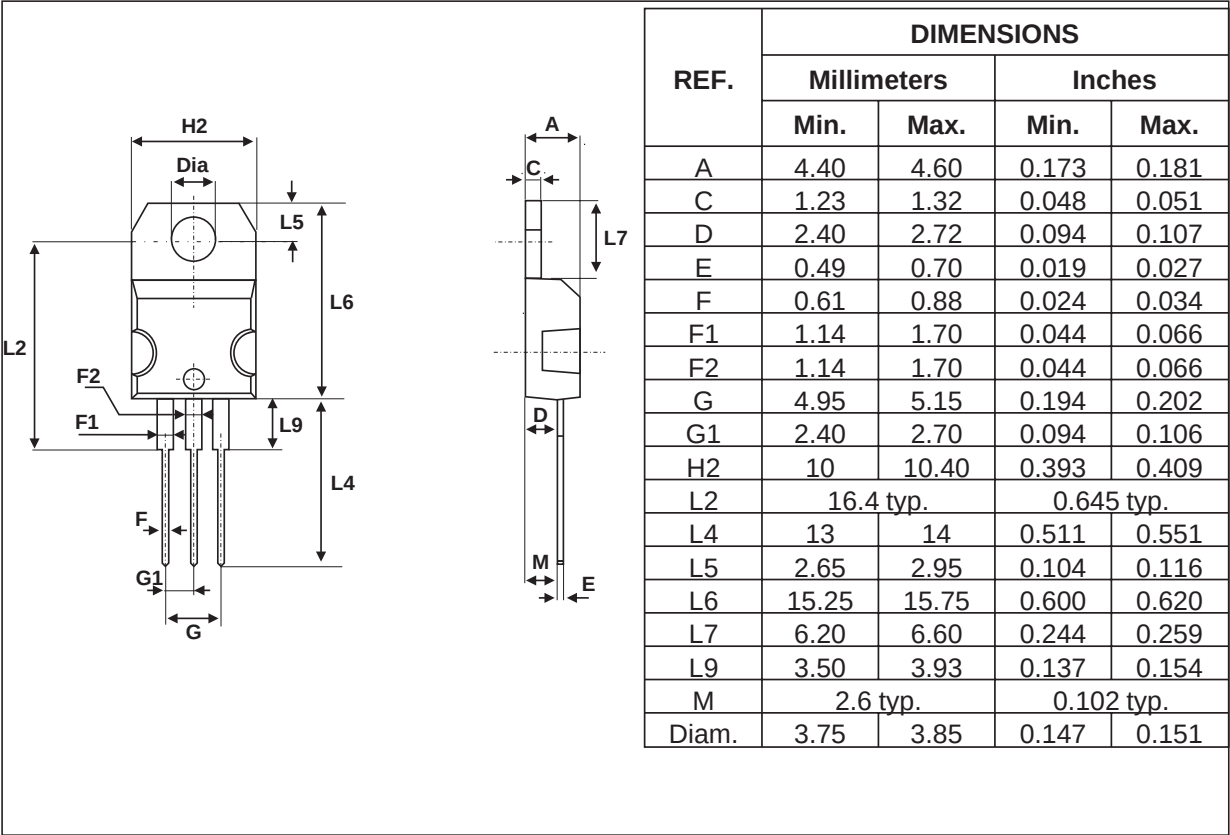


Fig. 9: Forward voltage drop versus forward current (maximum values, per diode).

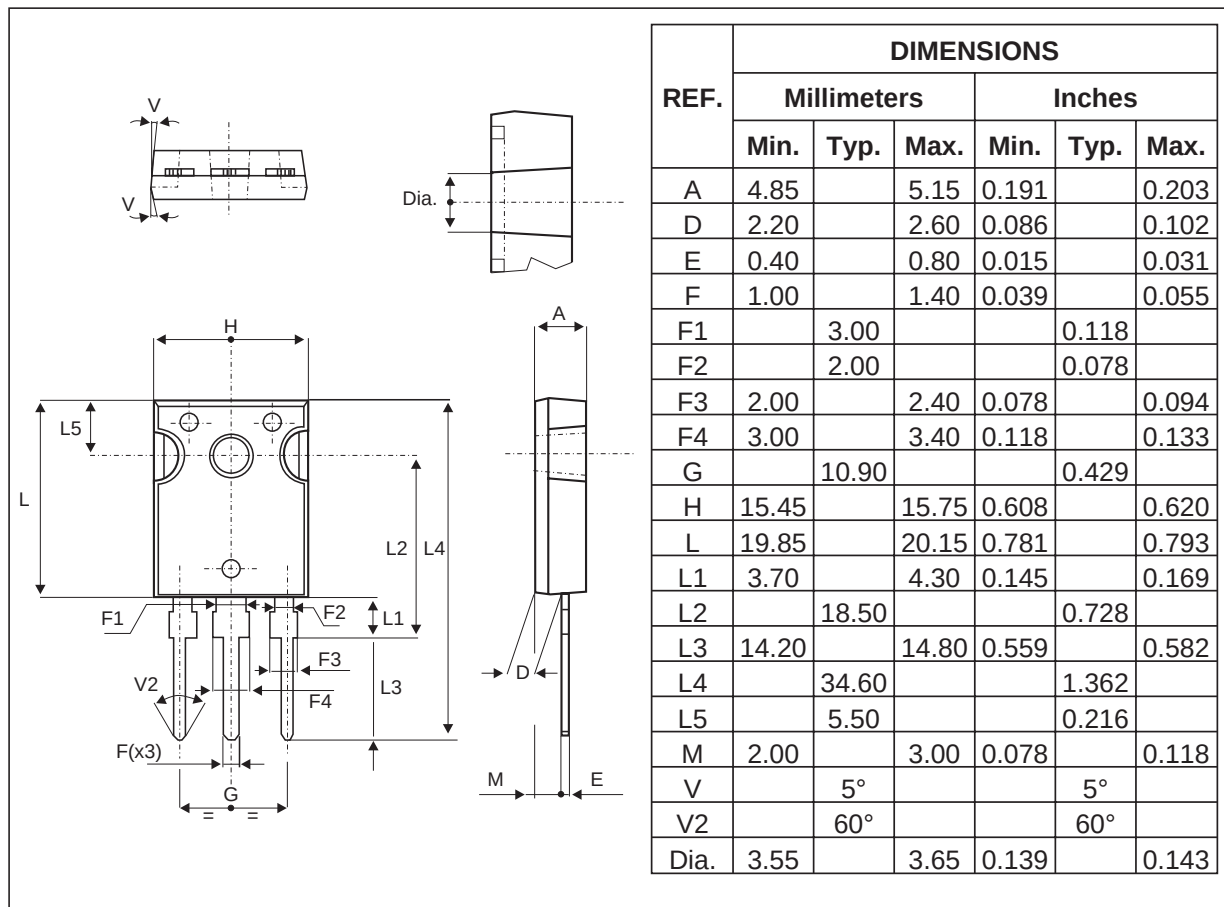


STPS40L40CT/CW

PACKAGE MECHANICAL DATA
TO-220AB



- COOLING METHOD : C
- RECOMMENDED TORQUE VALUE : 0.55M.N
- MAXIMUM TORQUE VALUE : 0.70 M.N

PACKAGE MECHANICAL DATA
TO-247


- COOLING METHOD : C
- RECOMMENDED TORQUE VALUE : 0.8M.N
- MAXIMUM TORQUE VALUE : 1.0M.N

Ordering type	Marking	Package	Weight	Base qty	Delivery mode
STPS40L40CT	STPS40L40CT	TO-220AB	2g	50	Tube
STPS40L40CW	STPS40L40CW	TO-247	4.4g	30	Tube

- EPOXY MEETS UL94,V0

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