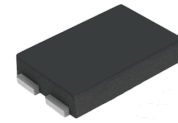


## FEATURES

- | Low leakage current
- | High efficiency
- | Heatsink design
- | Halogen-free according to IEC 61249-2-21 definition
- | Moisture sensitivity: level 1, per J-STD-020
- | High temperature soldering guaranteed: 260°C/10 seconds



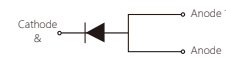
TO-277B



Marking

## MECHANICAL DATA

- | Case:TO-277B
- | Molding compound meets UL 94 V-0 flammability
- | Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102



Schematic Symbol

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS (T<sub>A</sub> = 25°C )

Parameter	Symbol	Value	Unit
Maximum Repetitive Peak Reverse Voltage	V <sub>RRM</sub>	60	V
Maximum RMS voltage	V <sub>RMS</sub>	42	V
Maximum DC Blocking Voltage	V <sub>DS</sub>	60	V
Maximum Average Forward Rectified Current	I <sub>F(AV)</sub>	10	A
	I <sub>F(AV)</sub> <sup>(1)</sup>	5	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I <sub>FSM</sub> <sup>(2)</sup>	150	A
Operating junction and storage temperature range	T <sub>J</sub> , T <sub>STG</sub>	-55 to 150	°C

## ELECTRICAL CHARACTERISTICS( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Test Conditions		Min.	Typ.	Max.	Unit
Maximum instantaneous forward voltage	$V_F$	$I_F=10\text{A}$	$T_A=25^{\circ}\text{C}$			0.64	Volts
Maximum DC reverse current at rated DC blocking voltage	$I_R$	Rated $V_R$	$T_A=25^{\circ}\text{C}$			0.10	mA
			$T_A=100^{\circ}\text{C}$			40	
Typical thermal resistance <sup>1)</sup>	$R_{\theta JA}$	junction to ambient				80	$^{\circ}\text{C}/\text{W}$
	$R_{\theta JC}$	junction to case				35	
	$R_{\theta JM}$	junction to mount				20	

Notes:

- 1) The thermal resistance from junction to ambient, case or mount, mounted on P.C.B with 30x30mm copper pads, 2 OZ, FR4 PCB.
- 2) Mounted on recommended copper pad area, free air.

## CHARACTERISTIC CURVES

Fig.1 Forward Current Derating Curve

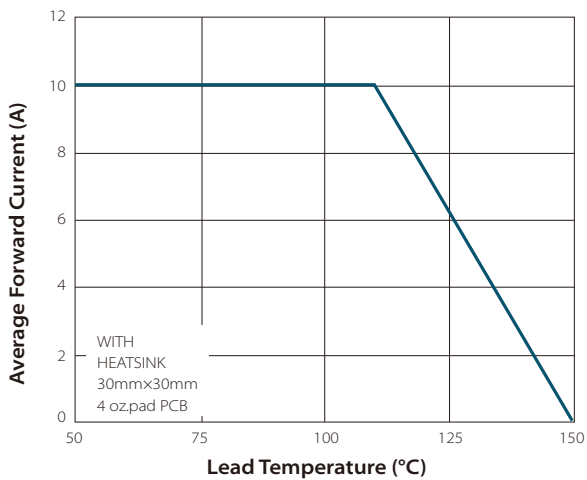
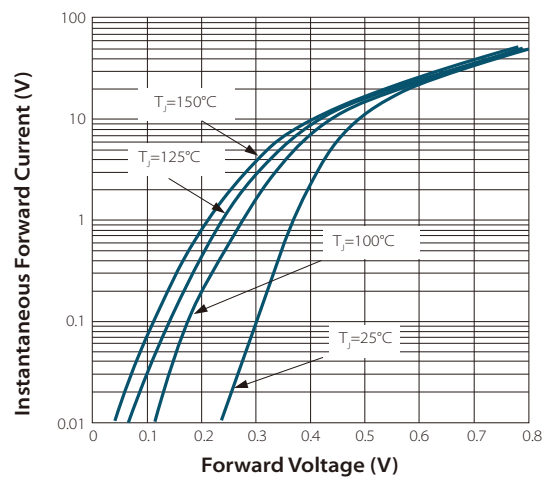
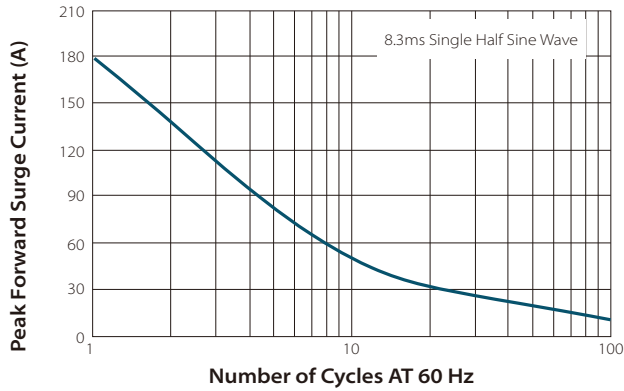
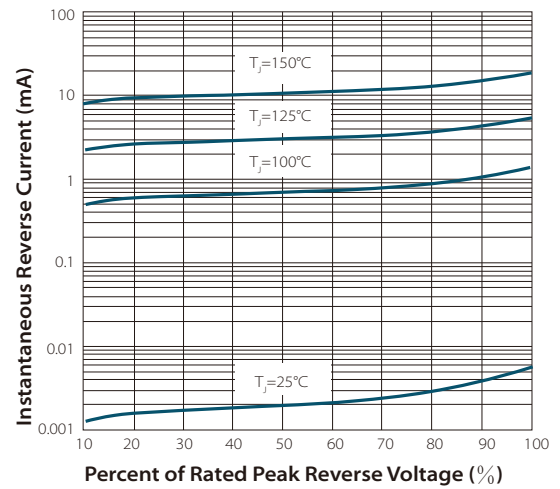


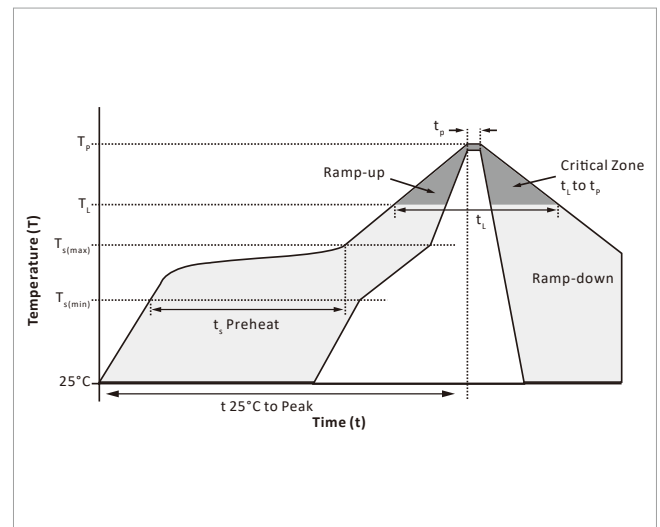
Fig.2 Typical Forward Characteristics



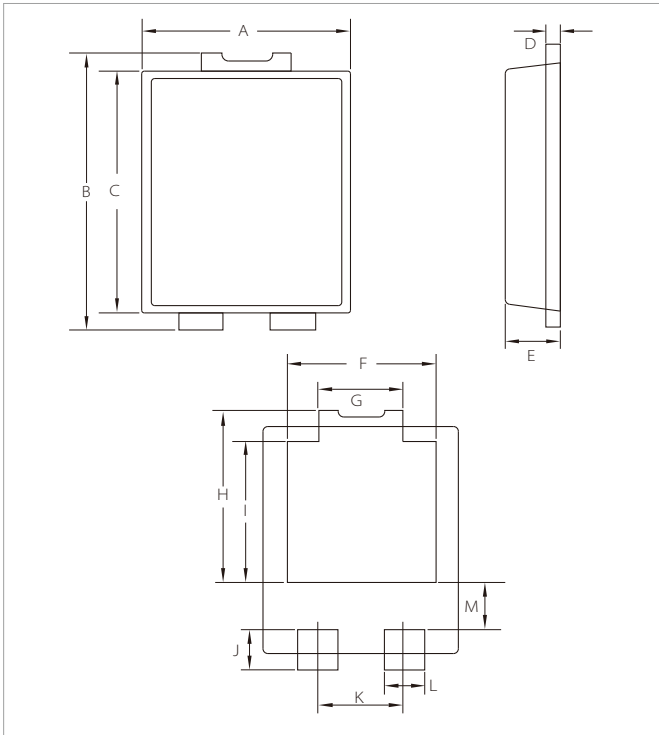
**Fig.3 Maximum Non-Repetitive Peak Forward Surge Current**

**Fig.4 Typical Reverse Characteristics**


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak)		3°C/second max
$T_{s(max)}$ to $T_L$ - Ramp-up Rate		3°C/second max
Reflow	Temperature ( $T_L$ ) (Liquidus)	217°C
	Time (min to max) ( $t_L$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°C
Time within 5°C of actual peak Temperature ( $t_p$ )		20 – 40 seconds
Ramp-down Rate		6°C/second max
Time 25°C to peak Temperature ( $T_p$ )		8 minutes max.
Do not exceed		260°C

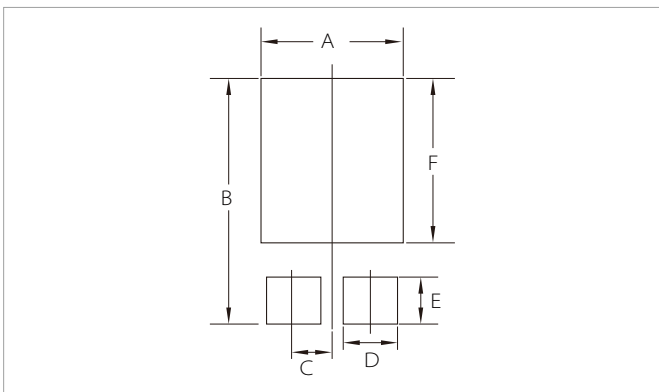


## TO-277B PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.00	4.60	0.157	0.181
B	6.20	6.80	0.244	0.268
C	5.50	6.00	0.216	0.236
D	0.25	0.40	0.010	0.016
E	1.05	1.35	0.041	0.053
F	3.00	3.50	0.118	0.138
G	1.70	2.00	0.067	0.079
H	4.20	4.50	0.165	0.177
I	3.52Nom		0.139Nom	
J	0.85	1.10	0.033	0.043
K	1.86Nom		0.073Nom	
L	0.80	1.00	0.031	0.039
M	1.10	1.40	0.043	0.055

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	3.40	-	0.134	-
B	6.90		0.272	
C	0.95		0.037	
D	1.30	-	0.051	-
E	1.30	-	0.051	-
F	4.60	-	0.181	-

## ORDERING INFORMATION

Part Number	Component Package	Marking	QTY/Reel	Reel Size
TSP1060	TO-277B	TSP1060	5000PCS	13"

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