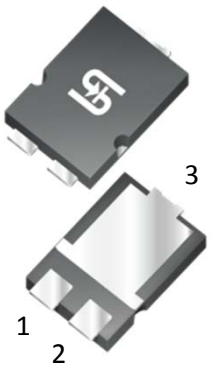
3A, 200V - 600V Avalanche Fast Recovery Surface Mount Rectifiers

FEATURES

- Very low profile, typical height of 1.1mm
- Excellent high temperature stability
- Glass passivated chip junction
- Controlled avalanche characteristics
- Low leakage current
- High forward surge capability
- Compliant to RoHS Directive 2011/65/EU and in accordance to WEEE 2002/96/EC
- Halogen-free according to IEC 61249-2-21



TO-277A (SMPC)

Pb-Free

RoHS COMPLIANT

HALOGEN FREE

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound: UL flammability classification rating 94V-0

Moisture sensitivity level: level 1, per J-STD-020

Packing code with suffix "G" means green compound (halogen-free)

Terminal: Matte tin plated leads, solderable per JESD22-B102

Meet JESD 201 class 1A whisker test

Polarity: Indicated by cathode band

Weight: 95 mg (approximately)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)							
PARAMETER			SYMBOL	TPAR3D	TPAR3G	TPAR3J	UNIT
Marking code				AR3D	AR3G	AR3J	
Maximum repetitive peak reverse voltage			V_{RRM}	200	400	600	V
Maximum average forward rectified current			$I_{F(AV)}$	3			A
Peak forward surge current, 8.3 ms single half sine-wave superimposed on rated load			I_{FSM}	60			A
Maximum instantaneous forward voltage (1)				TYP		MAX	
	I_F=3A	T_J=25°C	V_F	1.20		1.55	V
		T_J=125°C		1.02		1.15	
Maximum reverse current	Rated V_R	T_J=25°C	I_R	0.30		10	μA
		T_J=125°C		40		250	
Non-repetitive avalanche energy	I_{AS} = 2.5A Max		E_{AS}	20			mJ
	I_{AS} = 1.0A Typ			30			
Maximum reverse recovery time	I_F=0.5A, I_R=1A, I_{RR}=0.25A		t_{rr}	TYP		MAX	ns
				95		120	
Typical thermal resistance			$R_{\theta JM}$ (2)	5.1			°C/W
			$R_{\theta JA}$ (3)	75			
Typical junction capacitance (4)			C_J	58			pF
Operating junction temperature range			T_J	- 55 to +175			°C
Storage temperature range			T_{STG}	- 55 to +175			°C

Note 1: Pulse test with PW=300μs, 1% duty cycle

Note 2: Junction to mounted, mounted on FR4 PCB with 16mm x 16mm Cu pad area

Note 3: Free air, mounted on recommended pad

Note 4: Measured at 1 MHz and Applied V_R=4.0 V

ORDERING INFORMATION				
PART NO.	PACKING CODE	PACKING CODE SUFFIX	PACKAGE	PACKING
TPAR3x (Note 1, 2)	S1	G	SMPC	1,500/ 7" Plastic reel
	S2		SMPC	6,000/ 13" Plastic reel

Note 1: "x" defines voltage from 200V (TPAR3D) to 600V (TPAR3J)

Note 2: Whole series with green compound

EXAMPLE				
EXAMPLE PART NO.	PART NO.	PACKING CODE	PACKING CODE SUFFIX	DESCRIPTION
TPAR3D S1G	TPAR3D	S1	G	Green compound

RATINGS AND CHARACTERISTICS CURVES

(T_A=25°C unless otherwise noted)

FIG.1 MAXIMUM FORWARD CURRENT DERATING CURVE

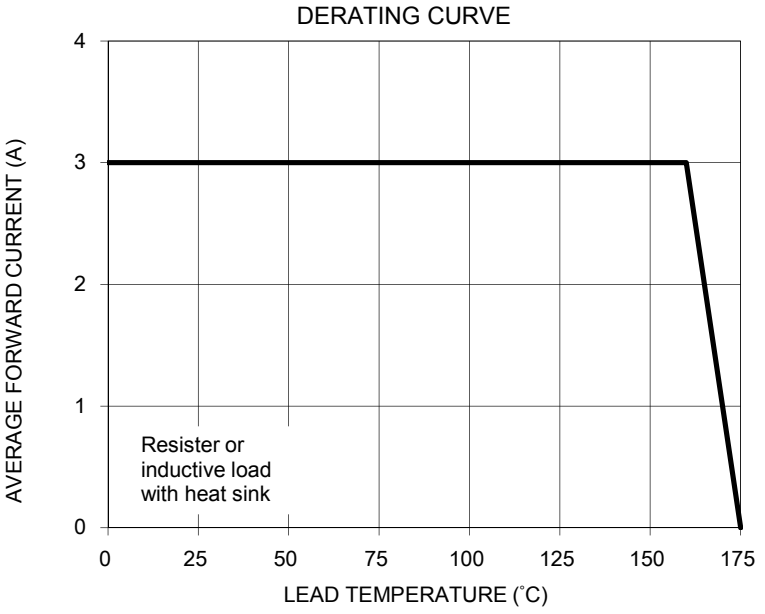


FIG. 2 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

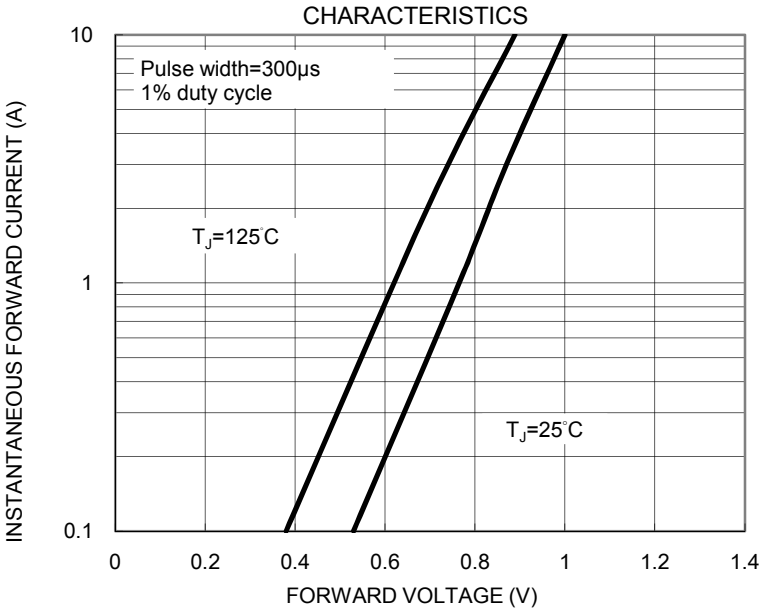


FIG. 3 MAXIMUM NON-REPETITIVE FORWARD PEAK SURGE CURRENT

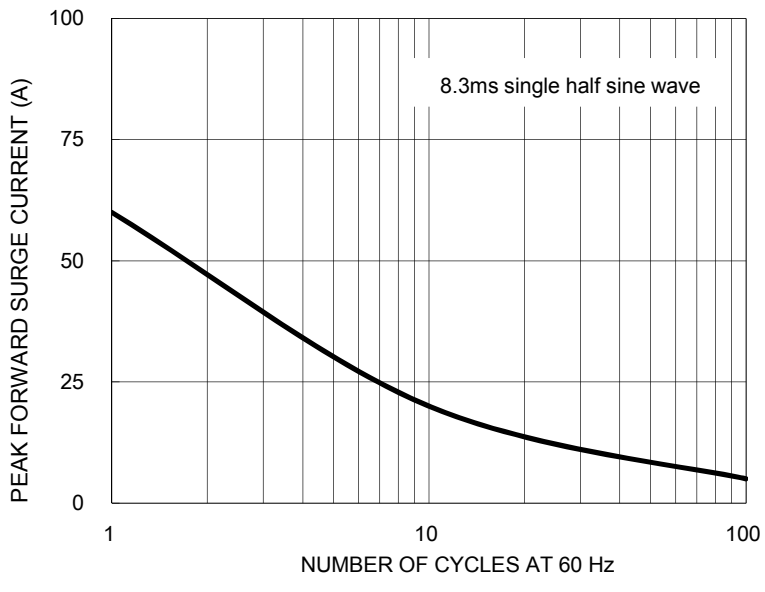


FIG. 4 TYPICAL REVERSE CHARACTERISTICS

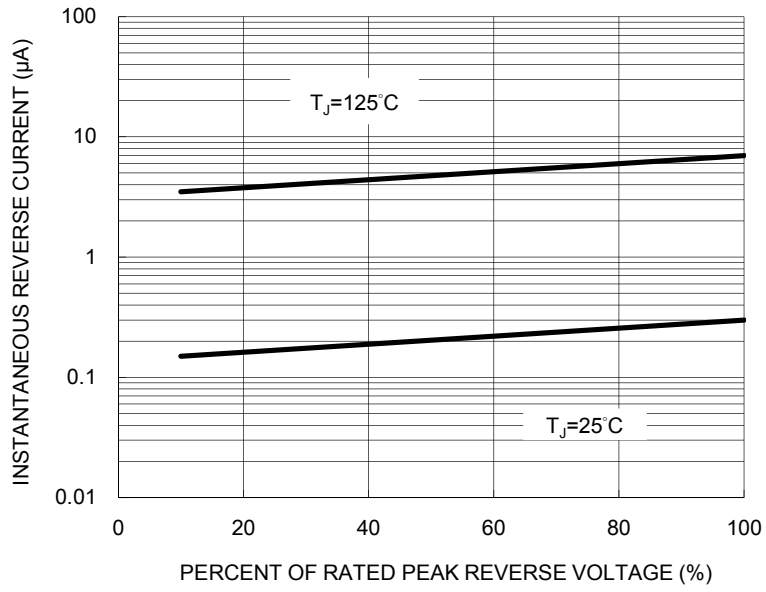


FIG. 5 TYPICAL JUNCTION CAPACITANCE

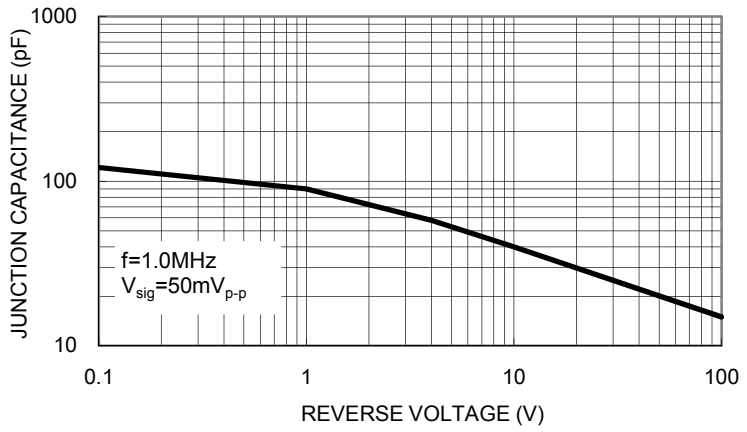
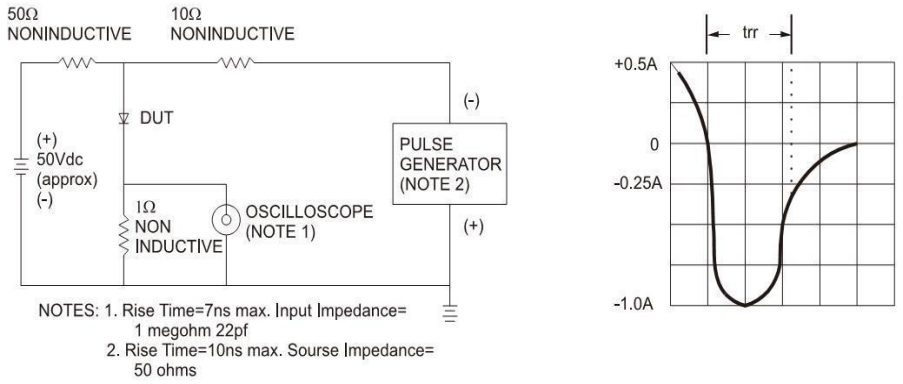
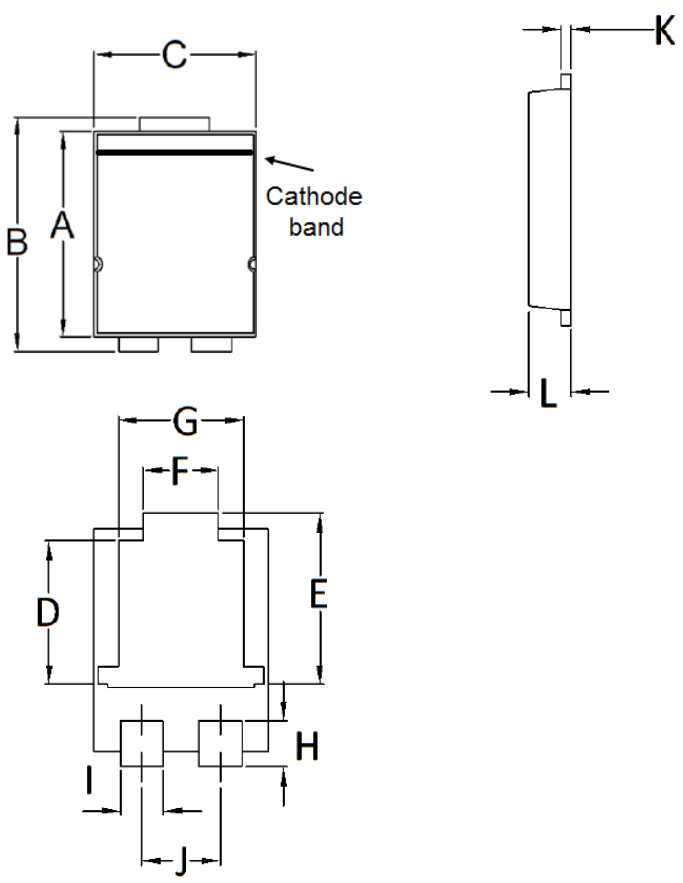


FIG.6 REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT DIAGRAM



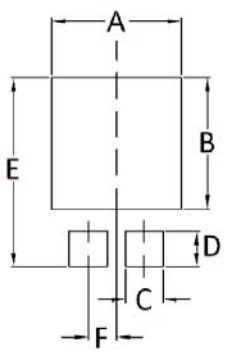
PACKAGE OUTLINE DIMENSIONS

TO-277A (SMPC)



DIM.	Unit (mm)		Unit (inch)	
	Min	Max	Min	Max
A	5.650	5.750	0.222	0.226
B	6.350	6.650	0.250	0.262
C	4.550	4.650	0.179	0.183
D	3.540	3.840	0.139	0.151
E	4.235	4.535	0.167	0.179
F	1.850	2.150	0.073	0.085
G	3.170	3.470	0.125	0.137
H	1.043	1.343	0.041	0.053
I	1.000	1.300	0.039	0.051
J	1.930	2.230	0.076	0.088
K	0.175	0.325	0.007	0.013
L	1.000	1.200	0.039	0.047

SUGGESTED PAD LAYOUT



Symbol	Unit (mm)	Unit (inch)
A	4.80	0.189
B	4.72	0.186
C	1.40	0.055
D	1.27	0.050
E	6.80	0.268
F	1.04	0.041

MARKING DIAGRAM

P/N = Marking Code
YW = Date Code
F = Factory Code

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