



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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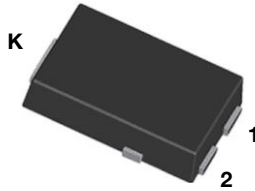
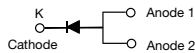
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Ultrafast Avalanche Surface Mount Rectifiers

eSMP® Series


TO-277A (SMPC)


FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Glass passivated pellet chip junction
- Fast reverse recovery time
- Controlled avalanche characteristics
- Low leakage current
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- AEC-Q101 qualified available
 - Automotive ordering code: base P/NHM3
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating
 Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Base P/NHM3 - halogen-free, RoHS-compliant and AEC-Q101 qualified

Base P/NHM3_X - halogen-free, RoHS-compliant and AEC-Q101 qualified
 (“_X” denotes revision code e.g. A, B,.....)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

M3 suffix meets JESD 201 class 2 whisker test, HM3 suffix meets JESD 201 class 2 whisker test

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	800 V, 1000 V
I_{FSM}	30 A
t_{rr}	75 ns
E_{AS}	20 mJ
V_F at $I_F = 2.0$ A	1.42 V
T_J max.	175 °C
Package	TO-277A (SMPC)
Diode variations	Single die

TYPICAL APPLICATIONS

For use in lighting, fast switching rectification of power supplies, inverters, converters, and freewheeling diodes for consumer, automotive, and telecommunication.

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)				
PARAMETER	SYMBOL	AU2PK	AU2PM	UNIT
Device marking code		AU2K	AU2M	
Maximum repetitive peak reverse voltage	V_{RRM}	800	1000	V
Maximum DC forward current (fig. 1)	$I_F^{(1)}$	2.0		A
	$I_F^{(2)}$	1.3		
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	30		A
Non-repetitive avalanche energy at $T_J = 25$ °C	E_{AS}	$I_{AS} = 2.5$ A max.	20	mJ
		$I_{AS} = 1.0$ A typ.	30	
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175		°C

Notes

- (1) Mounted on 10 mm x 10 mm pad areas, 1 oz. FR4 PCB
- (2) Free air, mounted on recommended pad area



ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS	SYMBOL	TYP.	MAX.	UNIT	
Instantaneous forward voltage	$I_F = 2.0\text{ A}$	$T_A = 25\text{ }^\circ\text{C}$	$V_F^{(1)}$	2.1	2.5	V
		$T_A = 125\text{ }^\circ\text{C}$		1.42	2.0	
Reverse current	Rated V_R	$T_A = 25\text{ }^\circ\text{C}$	$I_R^{(2)}$	0.27	10	μA
		$T_A = 125\text{ }^\circ\text{C}$		62	500	
Maximum reverse recovery time	$I_F = 0.5\text{ A}$, $I_R = 1.0\text{ A}$, $t_{rr} = 0.25\text{ A}$	t_{rr}	50	75	ns	
Typical junction capacitance per diode	Rated $V_R = 4.0\text{ V}$, 1 MHz	C_J	29	-	pF	

Notes

- (1) Pulse test: 300 μs pulse width, 1 % duty cycle
(2) Pulse test: Pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)				
PARAMETER	SYMBOL	AU2PK	AU2PM	UNIT
Typical thermal resistance	$R_{\theta JA}^{(1)}$	85		$^\circ\text{C/W}$
	$R_{\theta JM}^{(2)}$	5		

Notes

- (1) Free air, mounted on recommended PCB 1 oz. pad are; thermal resistance $R_{\theta JA}$ - junction to ambient
(2) Units mounted on PCB with 10 mm x 10 mm copper pad areas; $R_{\theta JM}$ - junction to mount

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
AU2PM-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
AU2PM-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
AU2PMHM3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel
AU2PMHM3/86A ⁽¹⁾	0.10	87A	6500	13" diameter plastic tape and reel
AU2PMHM3_A/H ⁽¹⁾	0.10	H	1500	7" diameter plastic tape and reel
AU2PMHM3_A/I ⁽¹⁾	0.10	I	6500	13" diameter plastic tape and reel

Note

- (1) AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^\circ\text{C}$ unless otherwise noted)

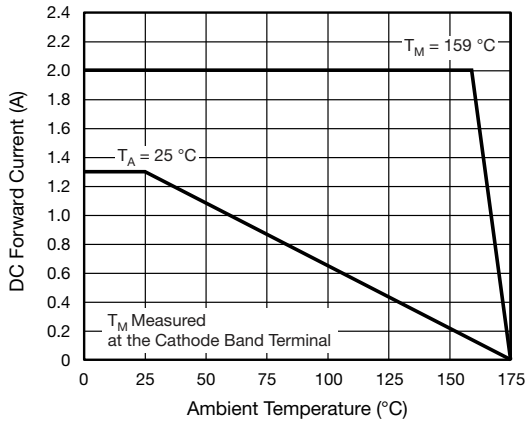


Fig. 1 - Maximum Forward Current Derating Curve

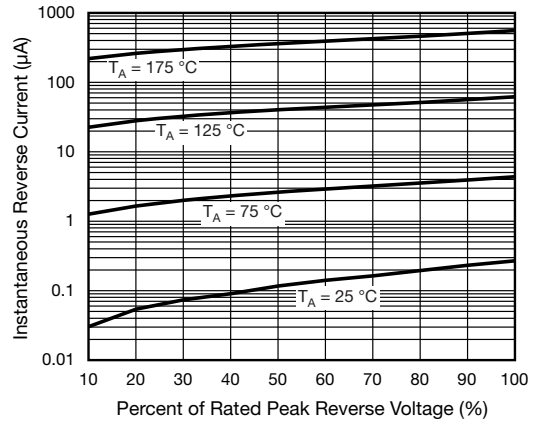


Fig. 4 - Typical Reverse Leakage Characteristics

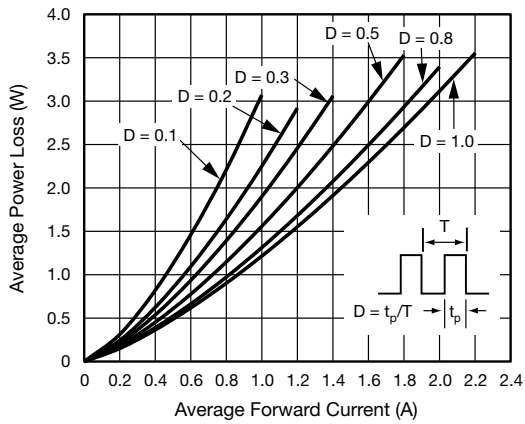


Fig. 2 - Average Power Loss Characteristics

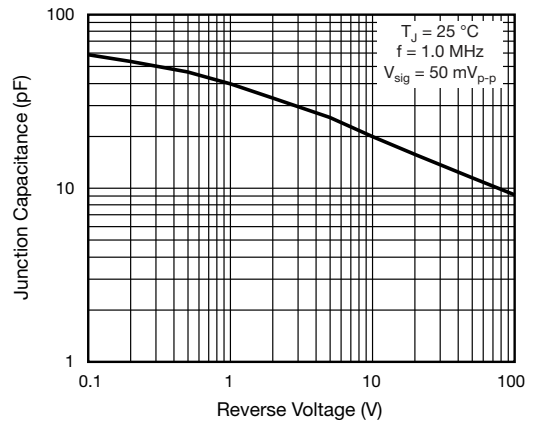


Fig. 5 - Typical Junction Capacitance

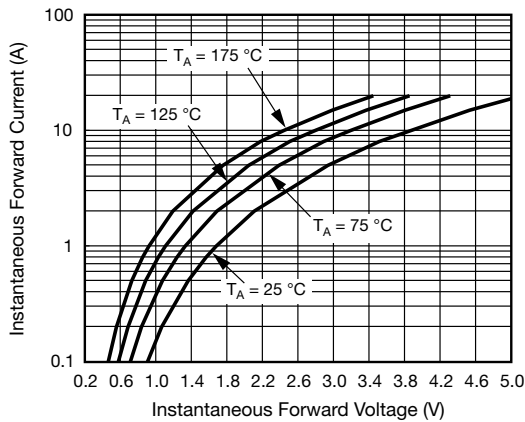


Fig. 3 - Typical Instantaneous Forward Characteristics

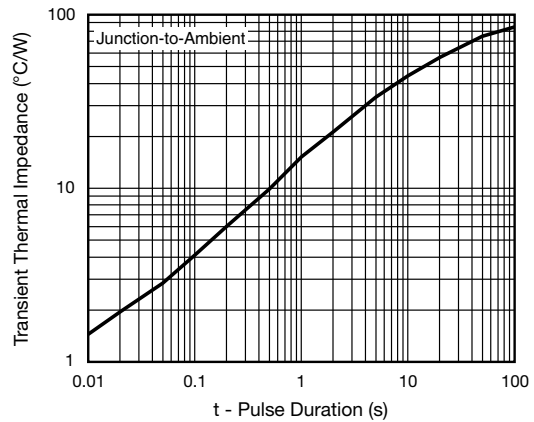
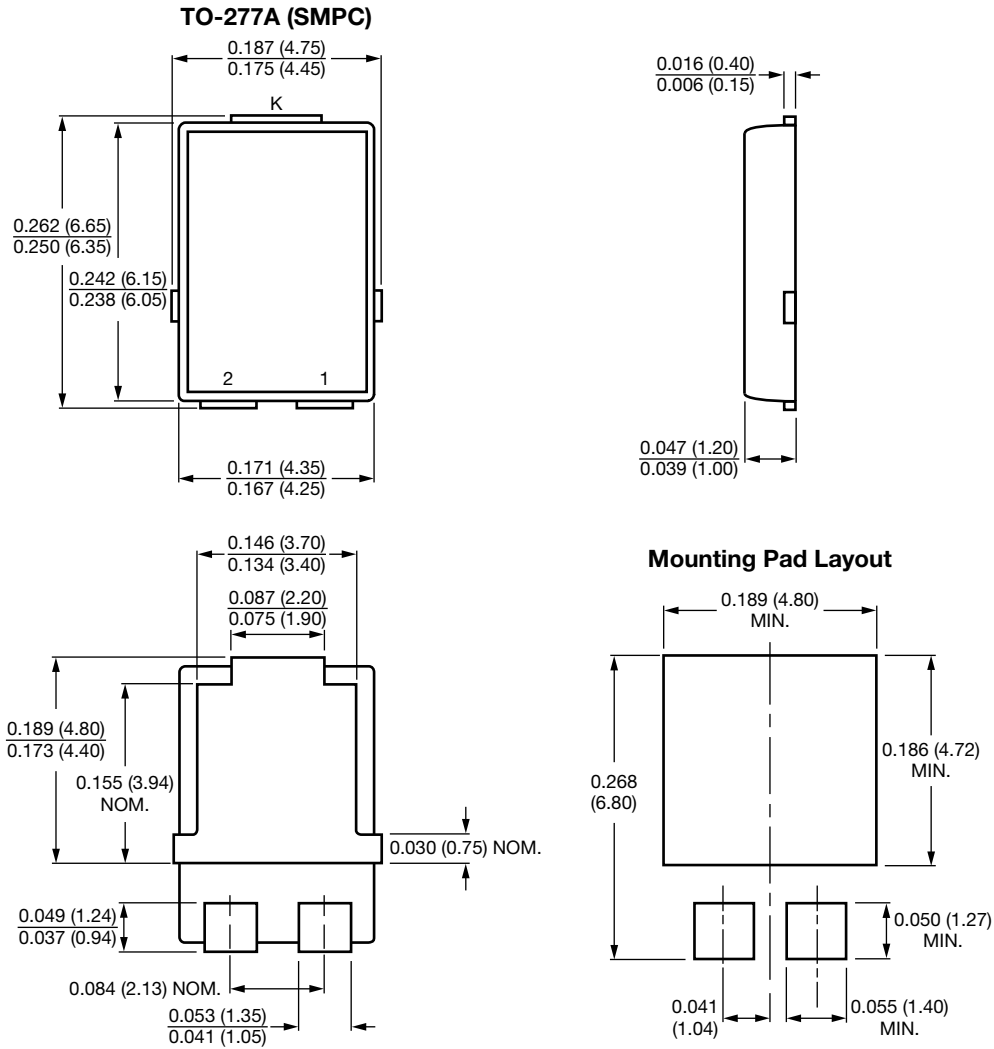


Fig. 6 - Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC® TO-277A



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