

High Current Density Surface Mount Dual Common-Cathode Schottky Rectifier



FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Low thermal resistance
- Meets MSL level 1, per J-STD-020
- AEC-Q101 qualified
- Compliant to RoHS directive 2002/95/EC and in accordance to WEEE 2002/96/EC
- **Halogen-free according to IEC 61249-2-21 definition**

AUTOMOTIVE
GRADE
Available



RoHS
COMPLIANT
HALOGEN
FREE

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	2 x 3.0 A
V_{RRM}	40 V
I_{FSM}	70 A
E_{AS}	20 mJ
V_F at $I_F = 3.0$ A	0.53 V
T_J max.	150 °C

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, dc-to-dc converters and polarity protection applications.

MECHANICAL DATA

Case: TO-277A (SMPC)

Molding compound meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free and RoHS compliant, commercial grade

Base P/NHM3 - halogen-free and RoHS compliant, automotive grade

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

M3 suffix meets JESD 201 class 1A whisker test, HM3 suffix meets JESD 201 class 2 whisker test

MAXIMUM RATINGS ($T_A = 25$ °C unless otherwise noted)

PARAMETER	SYMBOL	SS6P4C	UNIT
Device marking code		S64C	
Maximum repetitive peak reverse voltage	V_{RRM}	40	V
Maximum average forward rectified current (fig. 1) total device per diode	$I_{F(AV)}$	6.0 3.0	A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load per diode	I_{FSM}	70	A
Non-repetitive avalanche energy at 25 °C, $I_{AS} = 2$ A per diode	E_{AS}	20	mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150	°C

ELECTRICAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage per diode ⁽¹⁾	I _F = 1.5 A	T _A = 25 °C	V _F	0.47	-	V
	I _F = 3.0 A			0.57	0.65	
	I _F = 1.5 A	T _A = 125 °C		0.40	-	
	I _F = 3.0 A			0.53	0.60	
Reverse current per diode ⁽²⁾	Rated V _R	T _A = 25 °C T _A = 125 °C	I _R	17 6	200 20	μA mA
Typical junction capacitance per diode	4.0 V, 1 MHz		C _J	100	-	pF

Notes

(1) Pulse test: 300 μs pulse width, 1 % duty cycle

(2) Pulse test: Pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	SS6P4C	UNIT
Typical thermal resistance per diode	R _{θJA} ⁽¹⁾	80	°C/W
	R _{θJL}	4	

Note

(1) Units mounted on recommended P.C.B. 1 oz. pad layout, free air

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS6P4C-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS6P4C-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS6P4CHM3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel
SS6P4CHM3/87A ⁽¹⁾	0.10	87A	6500	13" diameter plastic tape and reel

Note

(1) Automotive grade

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

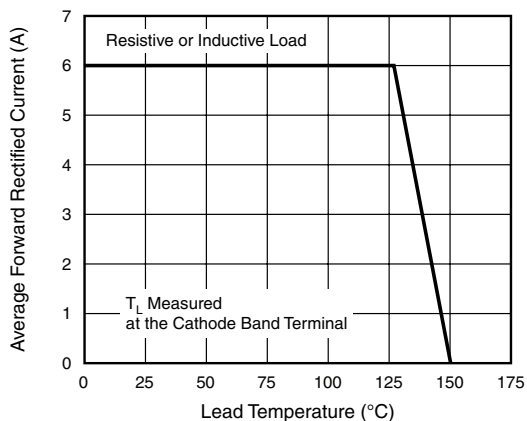


Figure 1. Maximum Forward Current Derating Curve

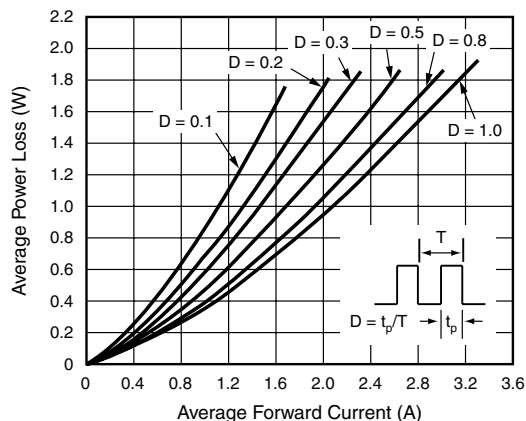


Figure 2. Forward Power Loss Characteristics Per Diode

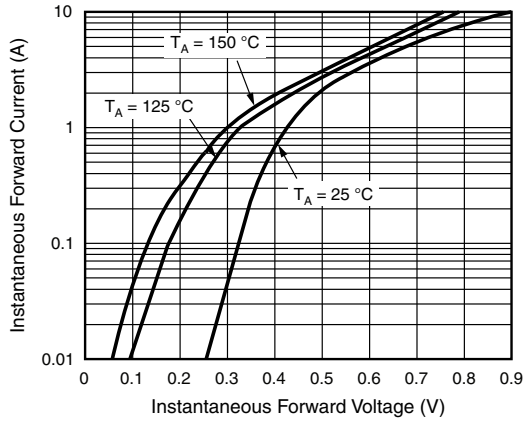


Figure 3. Typical Instantaneous Forward Characteristics Per Diode

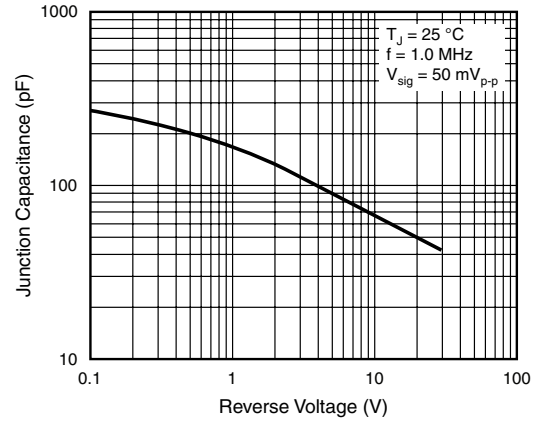


Figure 5. Typical Junction Capacitance Per Diode

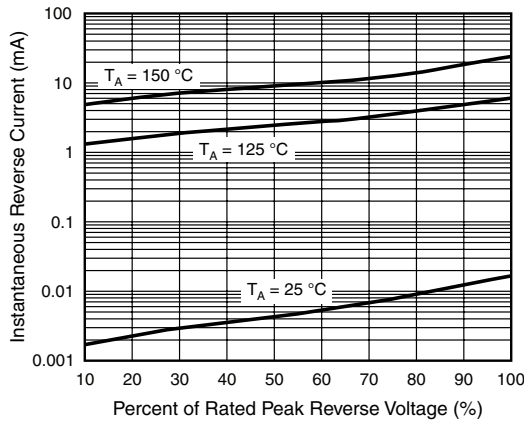
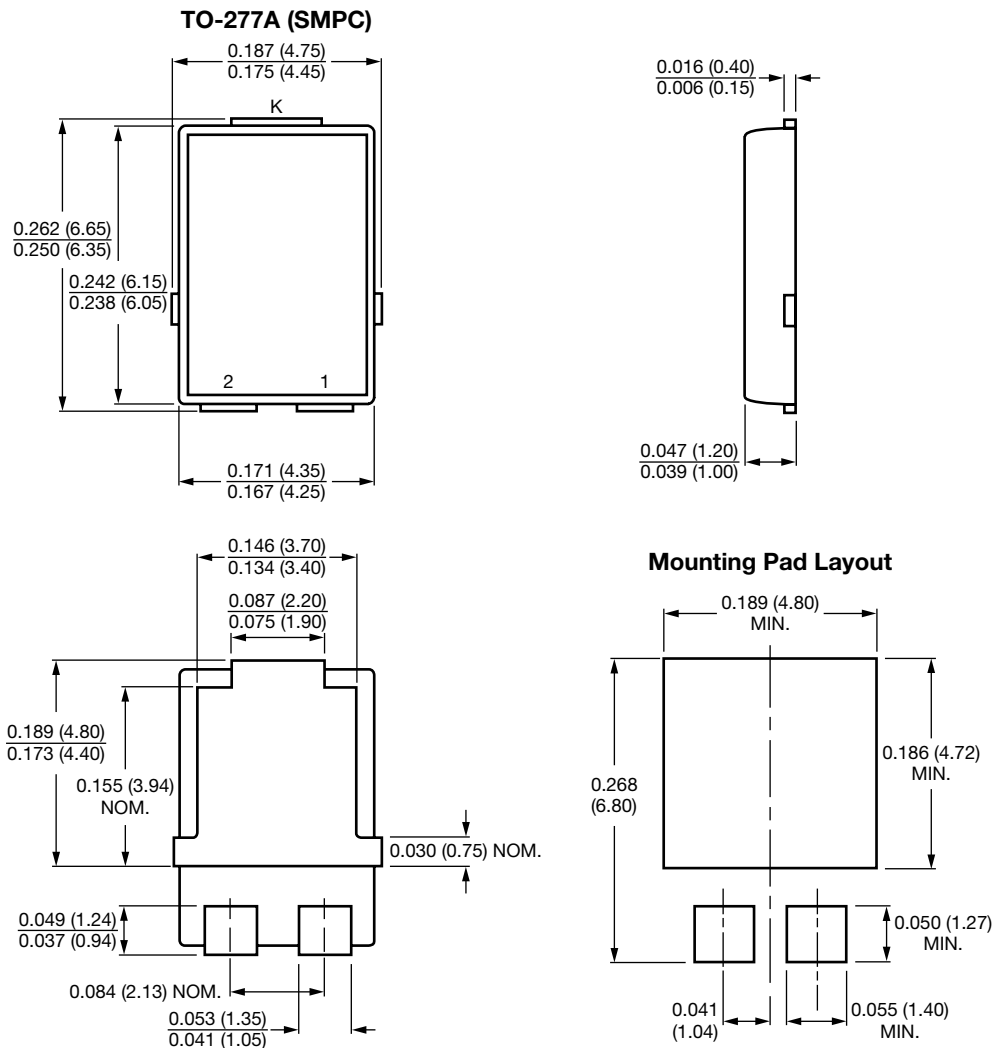


Figure 4. Typical Reverse Leakage Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC TO-277A



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