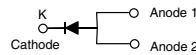


High Current Density Surface Mount High Voltage Schottky Rectifier

eSMP® Series

TO-277A (SMPC)

FEATURES

- Very low profile - typical height of 1.1 mm
- Ideal for automated placement
- Guardring for overvoltage protection
- High barrier technology, $T_J = 175^\circ\text{C}$ maximum
- Low leakage current
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- 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**


**RoHS
COMPLIANT
HALOGEN
FREE**
PRIMARY CHARACTERISTICS

$I_{F(AV)}$	8.0 A
V_{RRM}	90 V, 100 V
I_{FSM}	150 A
E_{AS}	20 mJ
V_F at $I_F = 8.0$ A	0.720 V
I_R	0.18 μ A
T_J max.	175 °C

TYPICAL APPLICATIONS

For use in high frequency rectifier of switching mode power supplies, freewheeling diodes, DC/DC converters or polarity protection application.

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

PARAMETER	SYMBOL	SS8PH9	SS8PH10	UNIT
Device marking code		8H9	8H10	
Maximum repetitive peak reverse voltage	V_{RRM}	90	100	V
Maximum average forward rectified current (fig. 1)	$I_{F(AV)}$	8.0		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	150		A
Non-repetitive avalanche energy at $I_{AS} = 2.0$ A, $T_J = 25^\circ\text{C}$	E_{AS}	20		mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 175		°C

**ELECTRICAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise noted)

PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	$I_F = 4.0 \text{ A}$	$T_A = 25^\circ\text{C}$	V_F ⁽¹⁾	0.769	-	V
	$I_F = 8.0 \text{ A}$			0.850	0.90	
	$I_F = 4.0 \text{ A}$			0.634	-	
	$I_F = 8.0 \text{ A}$			0.720	0.76	
Reverse current	Rated V_R	$T_A = 25^\circ\text{C}$	I_R ⁽²⁾	0.18	2.0	μA
		$T_A = 125^\circ\text{C}$		110	300	
Typical junction capacitance	4.0 V, 1 MHz		C_J	140	-	pF

Notes(1) Pulse test: 300 μs pulse width, 1 % duty cycle(2) Pulse test: Pulse width $\leq 40 \text{ ms}$ **THERMAL CHARACTERISTICS** ($T_A = 25^\circ\text{C}$ unless otherwise specified)

PARAMETER	SYMBOL	SS8PH9	SS8PH10	UNIT
Typical thermal resistance	$R_{\theta JA}$ ⁽¹⁾	65		$^\circ\text{C/W}$
	$R_{\theta JL}$	3		

Note

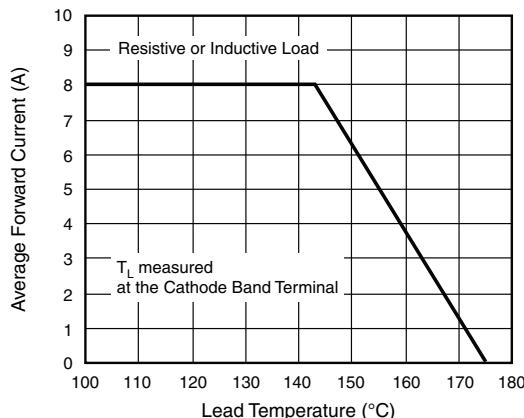
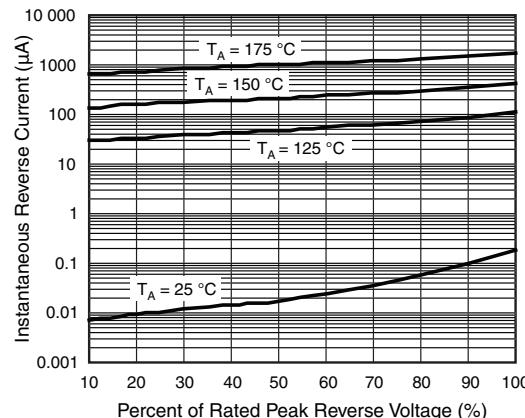
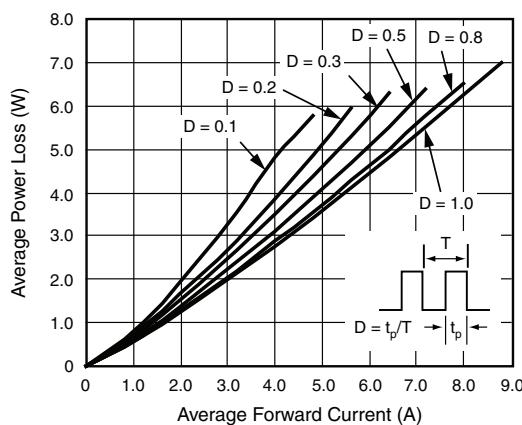
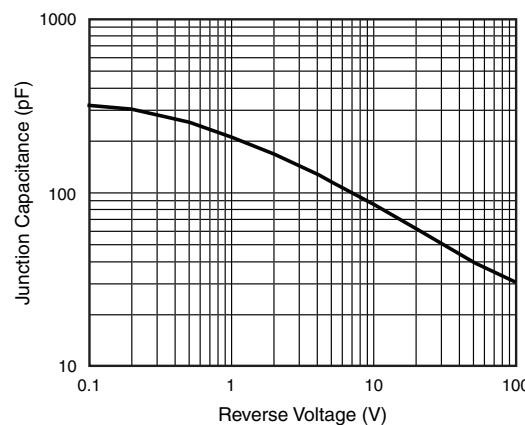
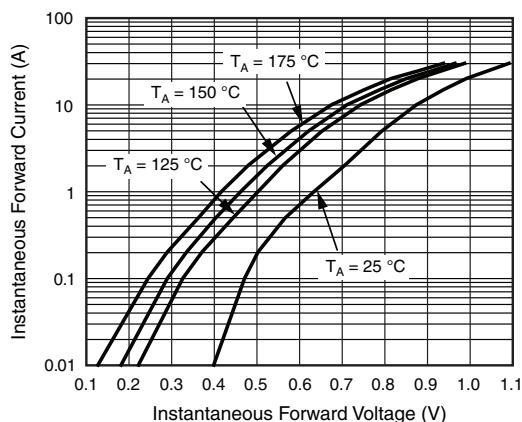
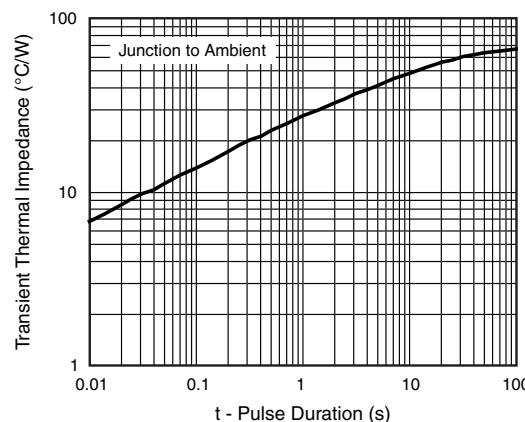
(1) Units mounted on recommended PCB 1 oz. pad layout

ORDERING INFORMATION (Example)

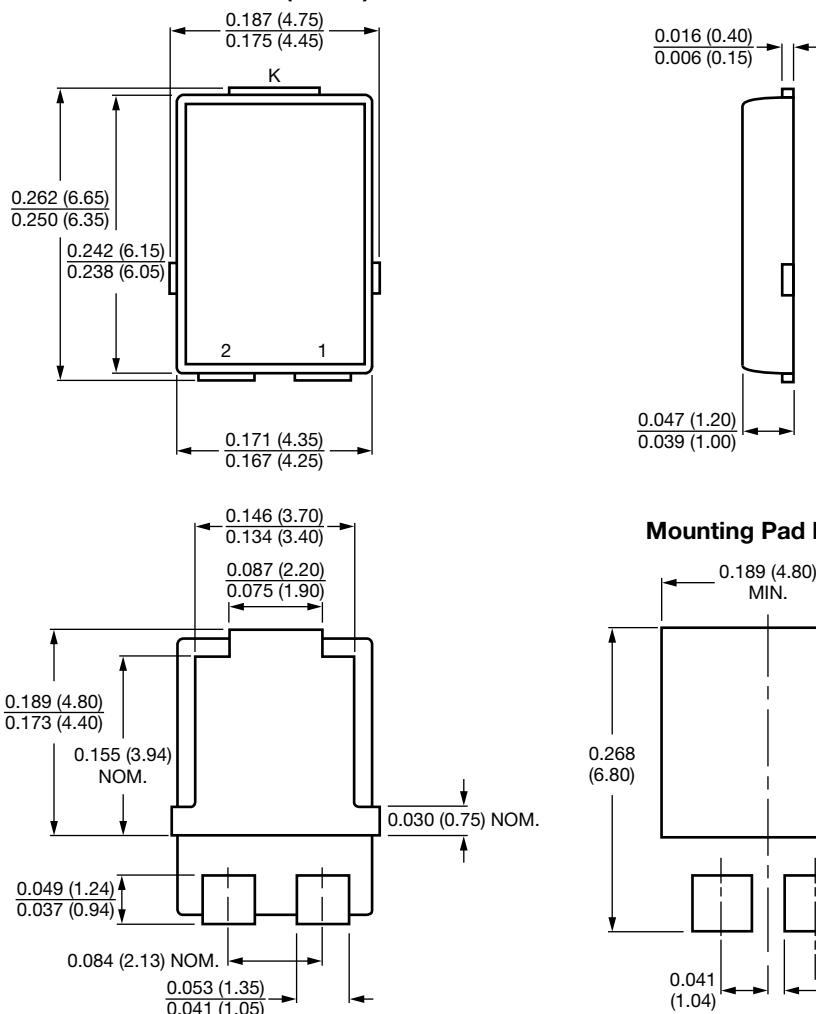
PREFERRED P/N	UNIT WEIGHT (g)	PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS8PH10-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS8PH10-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS8PH10HM3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel
SS8PH10HM3/87A ⁽¹⁾	0.10	87A	6500	13" diameter plastic tape and reel

Note

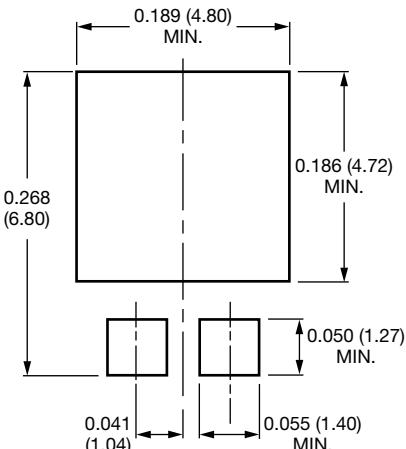
(1) Automotive grade

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

Fig. 1 - Maximum Forward Current Derating Curve

Fig. 4 - Typical Reverse Characteristics

Fig. 2 - Forward 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)

TO-277A (SMPC)


Conform to JEDEC TO-277A

Mounting Pad Layout


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