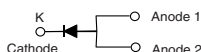


High Current Density Surface Mount Schottky Barrier Rectifiers

eSMP™ Series



TO-277A (SMPC)



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, LF maximum peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC
- **Halogen-free**



RoHS
COMPLIANT
HALOGEN
FREE

PRIMARY CHARACTERISTICS

$I_{F(AV)}$	5.0 A
V_{RRM}	50 V, 60 V
I_{FSM}	150 A
E_{AS}	20 mJ
V_F at $I_F = 5.0$ A	0.560 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 94V-0 flammability rating.

Base P/N-E3 - RoHS compliant, commercial grade
Base P/NHE3 - RoHS compliant, high reliability/automotive grade (AEC-Q101 qualified)

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

Base P/NHM3 - halogen-free and RoHS compliant, high reliability/automotive grade (AEC-Q101 qualified)

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102

E3 and M3 suffix meets JESD 201 class 1A whisker test, HE3 and HM3 suffix meets JESD 201 class 2 whisker test

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

PARAMETER	SYMBOL	SS5P5	SS5P6	UNIT
Device marking code		S55	S56	
Maximum repetitive peak reverse voltage	V_{RRM}	50	60	V
Maximum average forward rectified current (Fig. 1)	$I_{F(AV)}$	5.0		A
Peak forward surge current 10 ms single half sine-wave superimposed on rated load	I_{FSM}	150		A
Non-repetitive avalanche energy at $I_{AS} = 2$ A, $T_J = 25$ °C	E_{AS}	20		mJ
Operating junction and storage temperature range	T_J, T_{STG}	- 55 to + 150		°C

ELECTRICAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Maximum instantaneous forward voltage ⁽¹⁾	$I_F = 2.5\text{ A}$ $I_F = 5.0\text{ A}$	$T_A = 25\text{ }^{\circ}\text{C}$	V_F	0.518 0.631	- 0.69	V
	$I_F = 2.5\text{ A}$ $I_F = 5.0\text{ A}$	$T_A = 125\text{ }^{\circ}\text{C}$		0.451 0.560	- 0.62	
Maximum reverse current ⁽²⁾	rated V_R	$T_A = 25\text{ }^{\circ}\text{C}$ $T_A = 125\text{ }^{\circ}\text{C}$	I_R	8.4 3.4	150 15	μA mA
Typical junction capacitance	4.0 V, 1 MHz		C_J	200	-	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 °C unless otherwise noted)				
PARAMETER	SYMBOL	SS5P5	SS5P6	UNIT
Typical thermal resistance	R _{θJA} ⁽¹⁾	65		°C/W
	R _{θJL}	3		

Note:

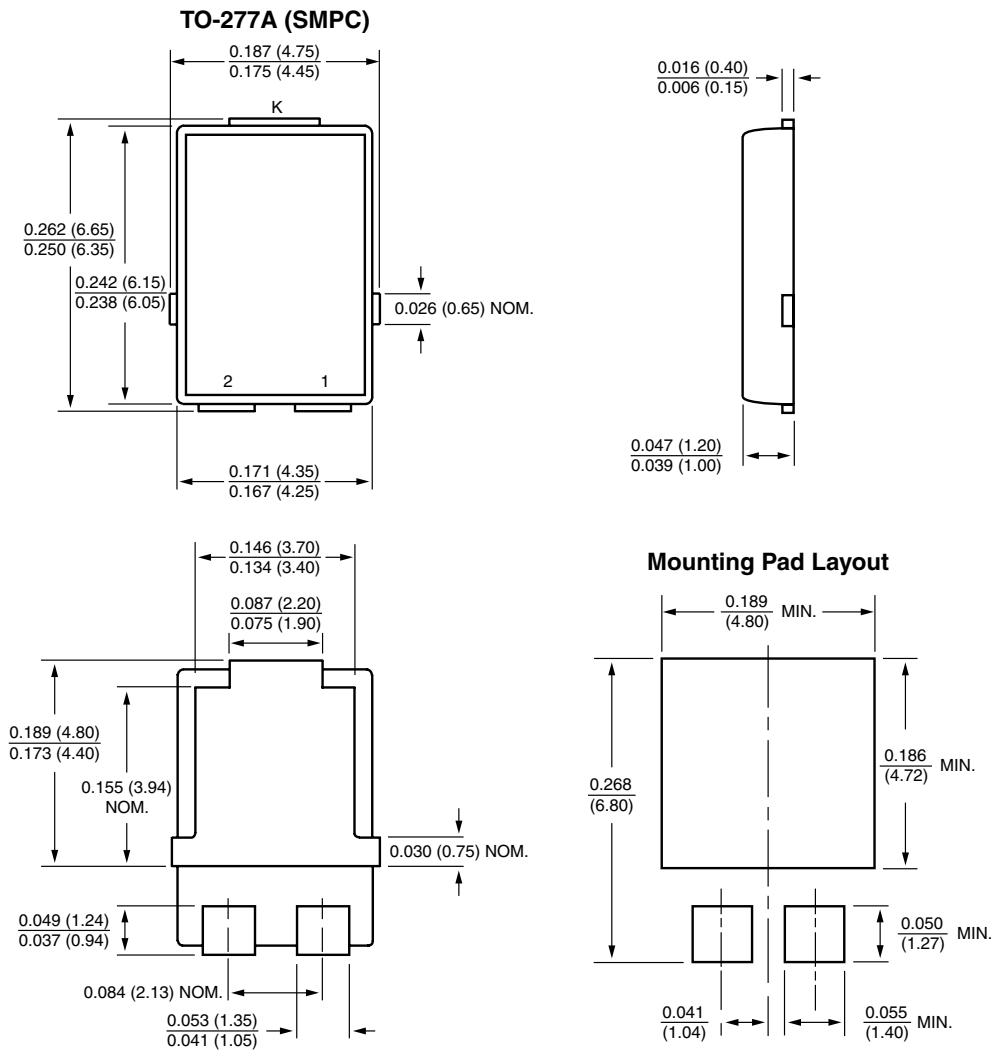
(1) Units mounted on recommended P.C.B. 1 oz. pad layout

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SS5P5-E3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS5P5-E3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS5P5HE3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel
SS5P5HE3/87A ⁽¹⁾	0.10	87A	6500	13" diameter plastic tape and reel
SS5P5-M3/86A	0.10	86A	1500	7" diameter plastic tape and reel
SS5P5-M3/87A	0.10	87A	6500	13" diameter plastic tape and reel
SS5P5HM3/86A ⁽¹⁾	0.10	86A	1500	7" diameter plastic tape and reel
SS5P5HM3/87A ⁽¹⁾	0.10	87A	6500	13" diameter plastic tape and reel

Note:

(1) High reliability/automotive grade (AEC-Q101 qualified)

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Conform to JEDEC TO-277A