High-Current Density Surface Mount Schottky Rectifier

DO-220AA (SMP)

FEATURES

- Very low profile - typical height of 1.0 mm
- Ideal for automated placement
- Low forward voltage drop, low power losses
- High efficiency
- Low thermal resistance
- Meets MSL level 1, per J-STD-020C, LF max peak of 260 °C
- Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-220AA (SMP)

Epoxy meets UL 94V-0 flammability rating

Terminals: Matte tin plated leads, solderable per J-STD-002B and JESD22-B102D

E3 suffix for commercial grade, HE3 suffix for high reliability grade (AEC Q101 qualified)

Polarity: Color band denotes the cathode end

MAJOR RATINGS AND CHARACTERISTICS	
$I_{F(AV)}$	3 A
V_{RRM}	40 V
I_{FSM}	50 A
E_{AS}	11.25 mJ
V_F	0.50 V
T_j max.	150 °C

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

PARAMETER	SYMBOL	SS3P4	UNIT
Device marking code		34	
Maximum repetitive peak reverse voltage	V_{RRM}	40	V
Maximum average forward rectified current (see Fig. 1)	$I_{F(AV)}$	3.0	A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
Non-repetitive avalanche energy at T_j = 25 °C, I_{AS} = 1.5 A, L = 10 mH	E_{AS}	11.25	mJ
Voltage rate of change (rated V_R)	dv/dt	10000	V/µs
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
Maximum instantaneous forward voltage (1)	at I_F = 3 A, T_j = 25 °C at I_F = 3 A, T_j = 125 °C	V_F	0.55 0.50	0.60 0.55	V
Maximum reverse current at rated V_R (1)	T_j = 25 °C T_j = 125 °C	I_R	- 7.5	150 15	µA mA
Typical junction capacitance	at 4.0 V, 1 MHz	C_J	105		pF

Note:

(1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 15 x 15 mm copper pad areas

$R_{\theta JL}$ is measured at the terminal of cathode band

$R_{\theta JC}$ is measured at the top centre of the body

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	**SYMBOL**	**SS3P4**	**UNIT**
Typical thermal resistance (1)	$R_{\theta JA}$ $R_{\theta JL}$ R_{eJC}	85 15 20	°C/W

Note:

(1) Thermal resistance from junction to ambient and junction to lead mounted on P.C.B. with 15 x 15 mm copper pad areas
$R_{\theta JL}$ is measured at the terminal of cathode band
$R_{\theta JC}$ is measured at the top centre of the body

ORDERING INFORMATION				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
SS3P4-E3/84A	0.024	84A	3000	7" Diameter Plastic Tape & Reel
SS3P4-E3/85A	0.024	85A	10000	13" Diameter Plastic Tape & Reel

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

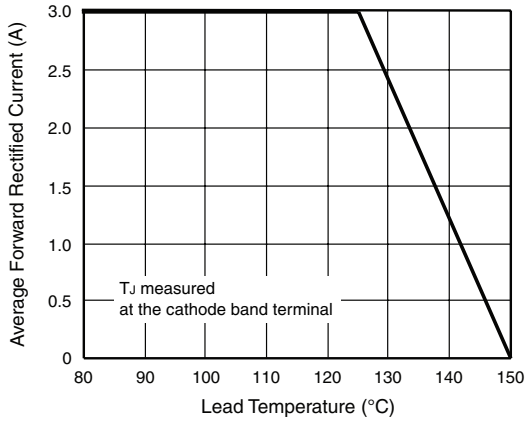


Figure 1. Forward Current Derating Curve

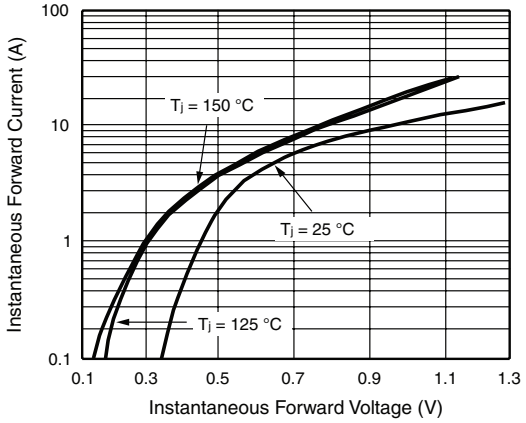


Figure 3. Typical Instantaneous Forward Characteristics

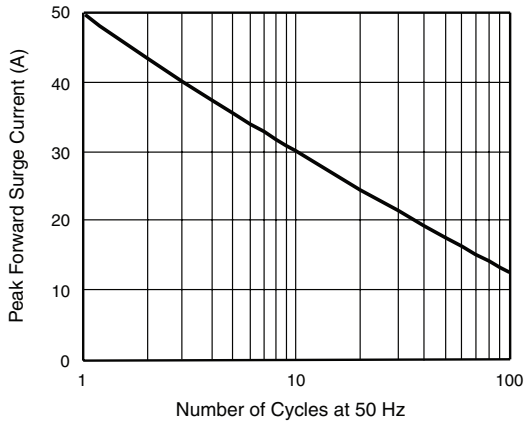


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

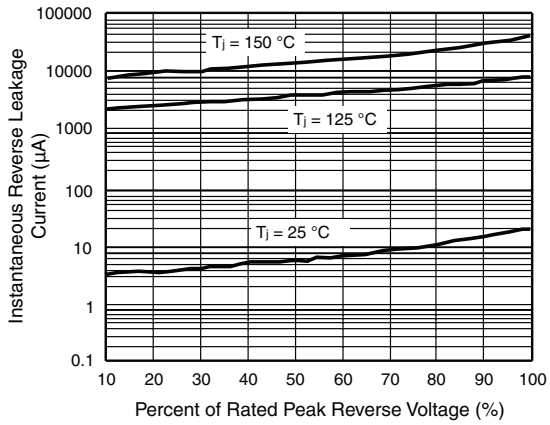


Figure 4. Typical Reverse Leakage Characteristics

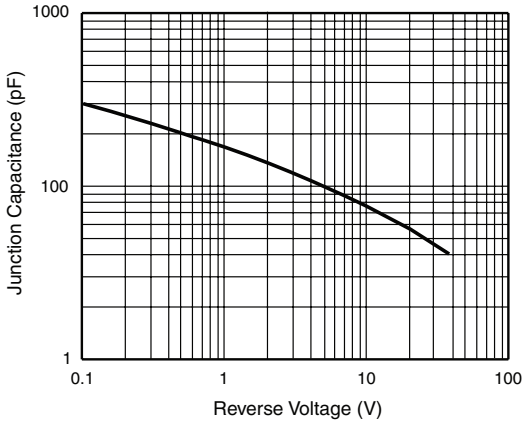


Figure 5. Typical Junction Capacitance

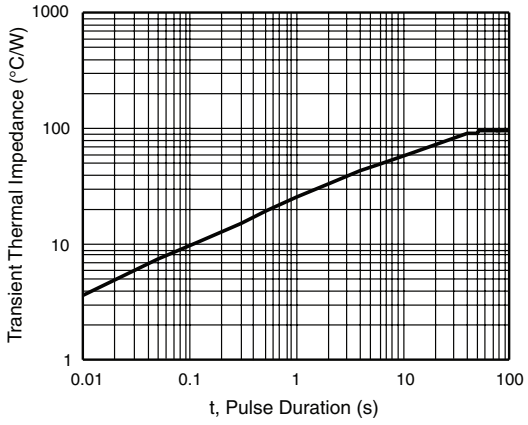
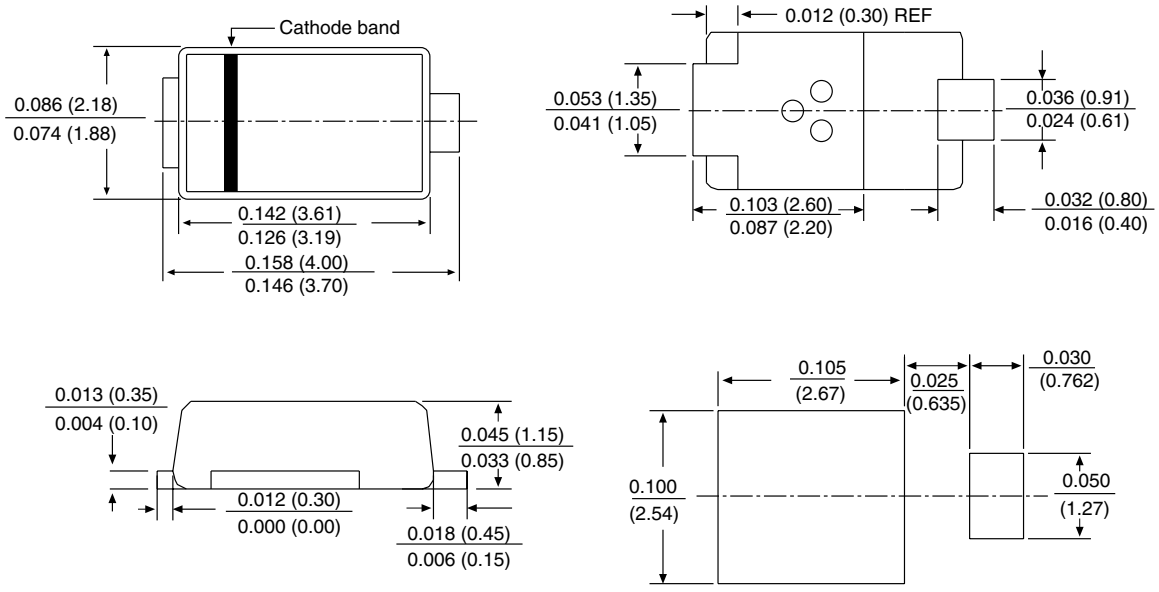


Figure 6. Typical Transient Thermal Impedance

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-220AA (SMP)



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