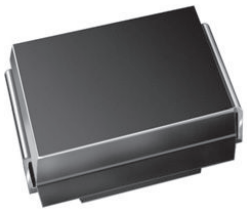
Surface Mount Ultrafast Plastic Rectifier



DO-214AA (SMB)

FEATURES

- Glass passivated pellet chip junction
- Ideal for automated placement
- Ultrafast reverse recovery time
- Low switching losses, high efficiency
- High forward surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT
HALOGEN FREE

TYPICAL APPLICATIONS

For use in high frequency rectification and freewheeling application in switching mode converters and inverters for consumer, computer, and telecommunication.

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	2.0 A
V_{RRM}	300 V, 400 V
I_{FSM}	50 A
t_{rr}	35 ns
V_F	1.1 V
T_J max.	150 °C
Package	DO-214AA (SMB)
Diode variations	Single die

MECHANICAL DATA

Case: DO-214AA (SMB)
Molding compound meets UL 94 V-0 flammability rating
Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102
M3 suffix meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

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

PARAMETER	SYMBOL	ES2F	ES2G	UNIT
Device marking code		EF	EG	
Maximum repetitive peak reverse voltage	V_{RRM}	300	400	V
Working peak reverse voltage	V_{RWM}	225	300	V
Maximum RMS voltage	V_{RMS}	210	280	V
Maximum average forward rectified current at T_L = 110 °C	$I_{F(AV)}$	2.0		A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I_{FSM}	50		A
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +150		°C

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ELECTRICAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)						
PARAMETER	**TEST CONDITIONS**		**SYMBOL**	**ES2F**	**ES2G**	**UNIT**
Maximum instantaneous forward voltage	2.0 A		V_F (1)	1.1		V
Maximum reverse current at V_{RRM}		T_A = 25 °C	I_R	10		µA
		T_A = 100 °C		200		
Maximum reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	35		ns
Maximum reverse recovery time	I_F = 1.0 A, dI/dt = 100 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}		t_{rr}	50		ns
Maximum reverse recovery current	I_F = 1.0 A, dI/dt = 100 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}		I_{RM}	3.0		A
Maximum stored charge	I_F = 1.0 A, dI/dt = 100 A/µs, V_R = 30 V, I_{rr} = 0.1 I_{RM}		Q_{rr}	50		nC
Typical junction capacitance	4.0 V, 1 MHz		C_J	15		pF

Note

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

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)				
PARAMETER	**SYMBOL**	**ES2F**	**ES2G**	**UNIT**
Maximum thermal resistance	$R_{\theta JA}$ (1)	75		°C/W
	$R_{\theta JL}$ (1)	25		

Note

(1) Units mounted on PCB 5.0 mm x 5.0 mm (0.013 mm thick) land areas

ORDERING INFORMATION (Example)				
PREFERRED P/N	**UNIT WEIGHT (g)**	**PREFERRED PACKAGE CODE**	**BASE QUANTITY**	**DELIVERY MODE**
ES2G-M3/52T	0.096	52T	750	7" diameter plastic tape and reel
ES2G-M3/5BT	0.096	5BT	3200	13" diameter plastic tape and reel

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RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

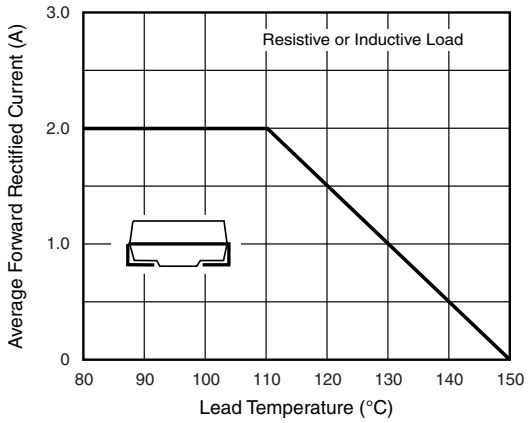


Fig. 1 - Maximum Forward Current Derating Curve

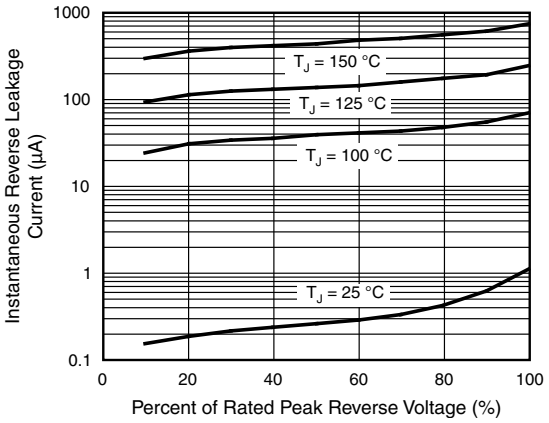


Fig. 4 - Typical Reverse Leakage Characteristics

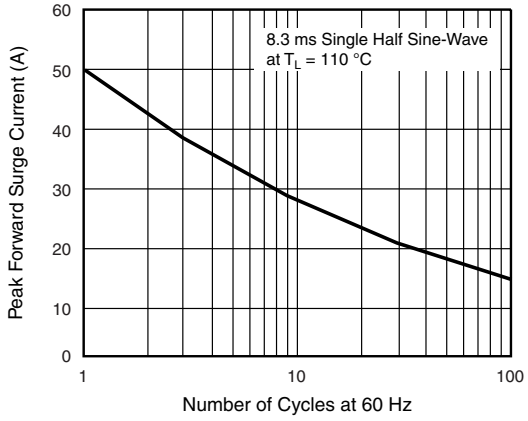


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

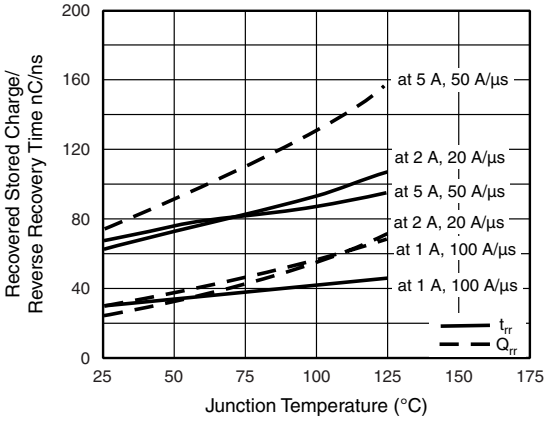


Fig. 5 - Reverse Switching Characteristics

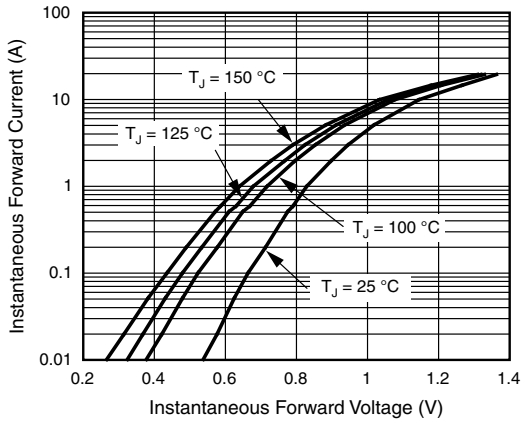


Fig. 3 - Typical Instantaneous Forward Characteristics

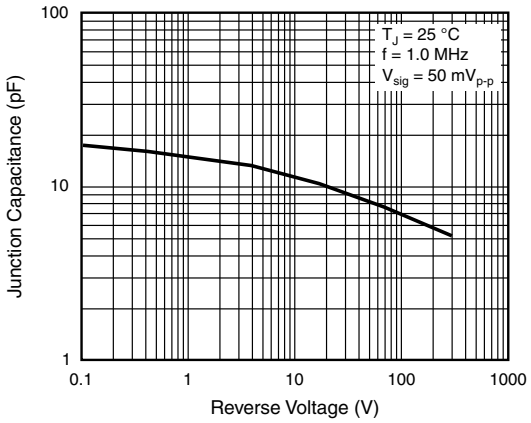
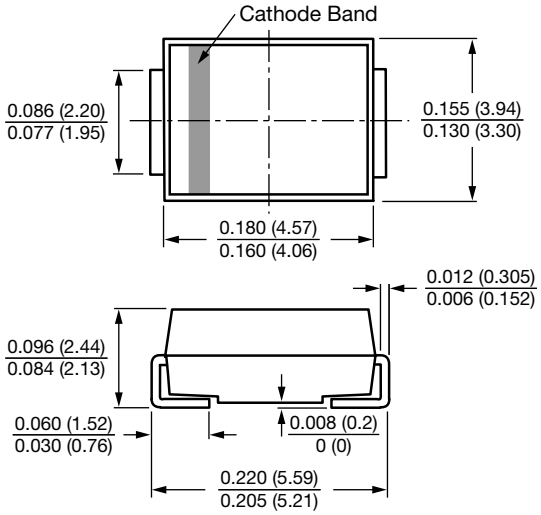


Fig. 6 - Typical Junction Capacitance

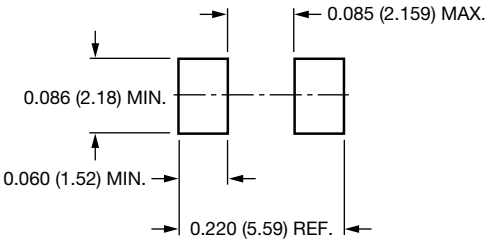
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PACKAGE OUTLINE DIMENSIONS in inches (millimeters)

DO-214AA (SMB)



Mounting Pad Layout



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