Vishay General Semiconductor

Surface Mount Ultrafast Plastic Rectifier



DO-214AB (SMC)

FEATURES

- · Glass passivated chip junction
- · Ideal for automated placement
- Ultrafast recovery times for high efficiency
- Low forward voltage, low power losses
- High forward surge capability
- · Meets MSL level 1, per J-STD-020, LF maximum peak of 260 °C
- Solder dip 260 °C, 40 s
- · Component in accordance to RoHS 2002/95/EC and WEEE 2002/96/EC

TYPICAL APPLICATIONS

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

MECHANICAL DATA

Case: DO-214AB (SMC)

Epoxy meets UL 94V-0 flammability rating

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

E3 suffix for consumer grade, meets JESD 201 class 1A whisker test, HE3 suffix for high reliability grade (AEC Q101 qualified), meets JESD 201 class 2 whisker test

Polarity: Color band denotes cathode end

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	ES3A	ES3B	ES3C	ES3D	UNIT
Device marking code		EA	EB	EC	ED	
Maximum repetitive peak reverse voltage	V _{RRM}	50	100	150	200	V
Maximum RMS voltage	V _{RMS}	35	70	105	140	V
Maximum DC blocking voltage	V _{DC}	50	100	150	200	V
Maximum average forward rectified current at $T_L = 100 ^\circ\text{C}$	I _{F(AV)}	3.0				А
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	100			А	
Operating junction and storage temperature range	T _J , T _{STG}	- 55 to + 150			°C	

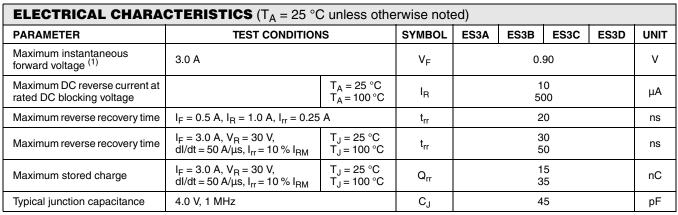
PRIMARY CHARACTERISTICS					
I _{F(AV)}	3.0 A				
V _{RRM}	۸ 50 V to 200 V				
I _{FSM}	100 A				
t _{rr}	20 ns				
V _F	0.90 V				
T⊥max.	150 °C				





RoHS COMPLIANT

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Note:

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

THERMAL CHARACTERISTICS (T _A = 25 °C unless otherwise noted)						
PARAMETER	SYMBOL	ES3A	ES3B	ES3C	ES3D	UNIT
Typical thermal resistance ⁽¹⁾	${\sf R}_{ heta {\sf JA}} \ {\sf R}_{ heta {\sf JL}}$	47 12			°C/W	

Note:

(1) Units mounted on P.C.B. with 0.31 x 0.31" (8.0 x 8.0 mm) copper pad areas

ORDERING INFORMATION (Example)					
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE	
ES3D-E3/57T	0.211	57T	850	7" diameter plastic tape and reel	
ES3D-E3/9AT	0.211	9AT	3500	13" diameter plastic tape and reel	
ES3DHE3/57T ⁽¹⁾	0.211	57T	850	7" diameter plastic tape and reel	
ES3DHE3/9AT ⁽¹⁾	0.211	9AT	3500	13" diameter plastic tape and reel	

Note:

(1) Automotive grade AEC Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

(T_A = 25 °C unless otherwise noted)

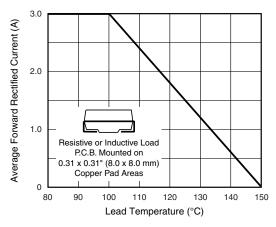


Figure 1. Maximum Forward Current Derating Curve

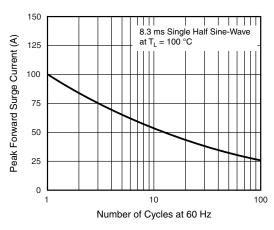


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current



ES3A thru ES3D

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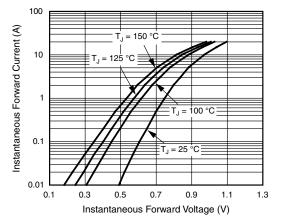


Figure 3. Typical Instantaneous Forward Characteristics

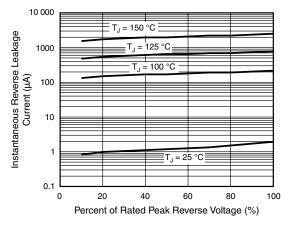
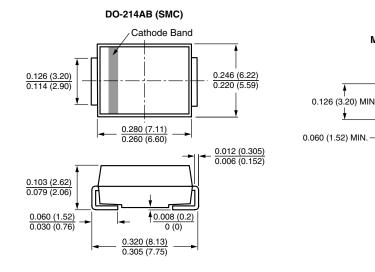


Figure 4. Typical Reverse Leakage Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



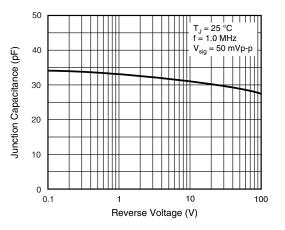


Figure 5. Typical Junction Capacitance

Mounting Pad Layout

– 0.320 REF. -

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0.185 (4.69) MAX.

For technical questions within your region, please contact one of the following: PDD-Americas@vishay.com, PDD-Asia@vishay.com, PDD-Europe@vishay.com



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