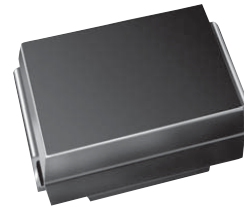


## Surface Mount Ultrafast Plastic Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	2.0 A
$V_{RRM}$	50 V to 200 V
$I_{FSM}$	50 A
$t_{rr}$	20 ns
$V_F$	0.90 V
$T_j \text{ max.}$	150 °C



DO-214AA (SMB)

### 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-020C
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-214AA (SMB)

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 cathode end

### Typical Applications

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

### Maximum Ratings

$T_A = 25\text{ °C}$  unless otherwise specified

Parameter	Symbol	ES2A	ES2B	ES2C	ES2D	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 $T_L = 110\text{ °C}$	$I_{F(AV)}$	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

### Electrical Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Test condition	Symbol	ES2A	ES2B	ES2C	ES2D	Unit
Maximum instantaneous forward voltage	at 2.0 A <sup>(1)</sup>	$V_F$	0.90				V
Maximum DC reverse current at rated DC blocking voltage	$T_A = 25\text{ }^\circ\text{C}$ $T_A = 100\text{ }^\circ\text{C}$	$I_R$	10 350				$\mu\text{A}$
Max. reverse recovery time	$I_F = 0.5\text{ A}$ , $I_R = 1.0\text{ A}$ , $I_{rr} = 0.25\text{ A}$	$t_{rr}$	20				ns
Maximum reverse recovery time	$I_F = 2.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_r = 10\% I_{RM}$	$t_{rr}$	$T_J = 25\text{ }^\circ\text{C}$ 30 $T_J = 100\text{ }^\circ\text{C}$ 50				ns
Maximum stored charge	$I_F = 2.0\text{ A}$ , $V_R = 30\text{ V}$ , $di/dt = 50\text{ A}/\mu\text{s}$ , $I_r = 10\% I_{RM}$	$Q_{rr}$	$T_J = 25\text{ }^\circ\text{C}$ 10 $T_J = 100\text{ }^\circ\text{C}$ 25				nC
Typical junction capacitance	at 4.0 V, 1 MHz	$C_J$	18				pF

Notes:

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

### Thermal Characteristics

$T_A = 25\text{ }^\circ\text{C}$  unless otherwise specified

Parameter	Symbol	ES2A	ES2B	ES2C	ES2D	Unit
Typical thermal resistance <sup>(1)</sup>	$R_{\theta JA}$ $R_{\theta JL}$	75 20				$^\circ\text{C}/\text{W}$

Notes:

(1) Units mounted on P.C.B. 5.0 x 5.0 mm (0.013 mm thick) land areas

### Ratings and Characteristics Curves

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

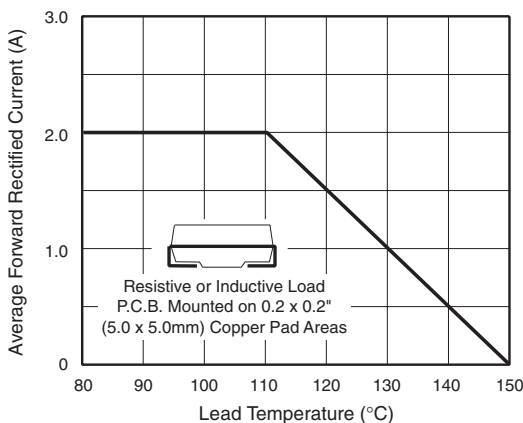


Figure 1. Maximum Forward Current Derating Curve

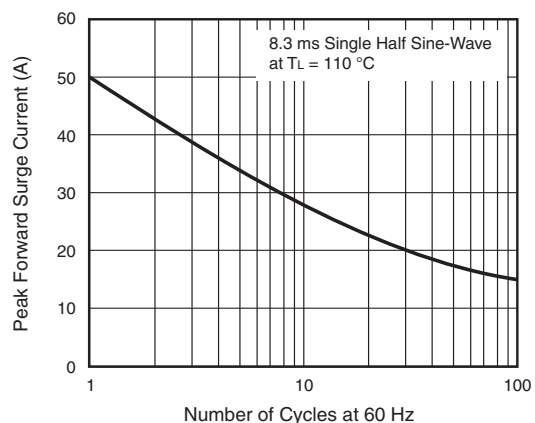


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

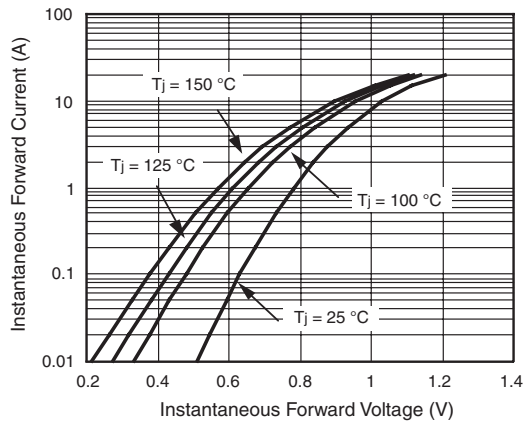


Figure 3. Typical Instantaneous Forward Characteristics

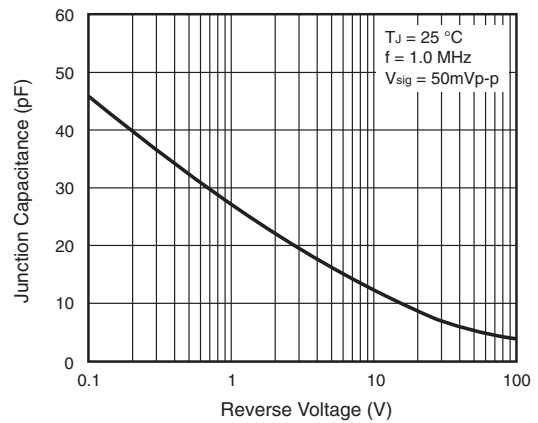


Figure 5. Typical Junction Capacitance

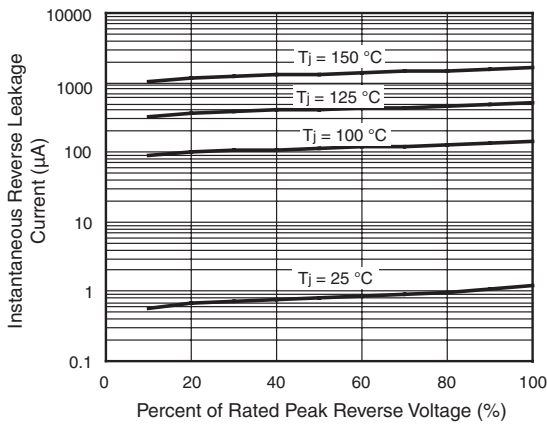


Figure 4. Typical Reverse Leakage Characteristics

## Package outline dimensions in inches (millimeters)

