



## Surface Mount Schottky Barrier Rectifier

### Major Ratings and Characteristics

$I_{F(AV)}$	1.5 A
$V_{RRM}$	25 V to 45 V
$I_{FSM}$	40 A
$V_F$	0.50 V
$T_j$ max.	150 °C



DO-214AC (SMA)

### Features

- Low profile package
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Very low switching losses
- High surge capability
- Meets MSL level 1, per J-STD-020C
- Solder Dip 260 °C, 40 seconds



### Mechanical Data

**Case:** DO-214AC (SMA)

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

### Typical Applications

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

### Maximum Ratings

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

Parameter	Symbol	BYS10-25	BYS10-35	BYS10-45	Unit
Device marking code		BYS 025	BYS 035	BYS 045	
Maximum repetitive peak reverse voltage	$V_{RRM}$	25	35	45	V
Maximum average forward rectified current	$I_{F(AV)}$	1.5			A
Peak forward surge current single half sine-wave superimposed on rated load	$I_{FSM}$	40 30			A
Junction and storage temperature range	$T_J, T_{STG}$	- 65 to + 150			°C

## Electrical Characteristics

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

Parameter	Test condition	Symbol	BYS10-25	BYS10-35	BYS10-45	Unit
Maximum instantaneous forward voltage	at 1.0 A <sup>(1)</sup>	$V_F$	500			mV
Maximum DC reverse current	at $V_{RRM}$ <sup>(1)</sup> $T_J = 25\text{ }^\circ\text{C}$ $T_J = 100\text{ }^\circ\text{C}$	$I_R$		500 10		$\mu\text{A}$ mA

Notes:

(1) Pulse test: 300  $\mu\text{s}$  pulse width, 1 % duty cycle

## Thermal Characteristics

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

Parameter	Symbol	BYS10-25	BYS10-35	BYS10-45	Unit
Maximum Thermal Resistance - Junction Lead	$R_{\theta JL}$	25			$^\circ\text{C/W}$
Maximum Thermal Resistance - Junction Ambient	$R_{\theta JA}$		150 <sup>(1)</sup> 125 <sup>(2)</sup> 100 <sup>(3)</sup>		$^\circ\text{C/W}$

Notes:

(1) Mounted on epoxy-glass hard tissue

(2) Mounted on epoxy-glass hard tissue, 50 mm<sup>2</sup> 35  $\mu\text{m}$  Cu

(3) Mounted on Al-oxide-ceramic (Al<sub>2</sub>O<sub>3</sub>), 50 mm<sup>2</sup> 35  $\mu\text{m}$  Cu

## Ratings and Characteristics Curves

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

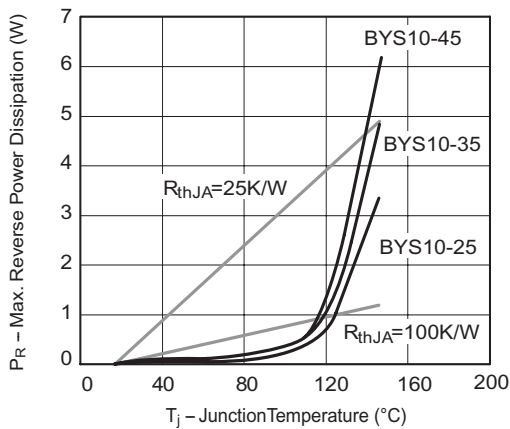


Figure 1. Max. Reverse Power Dissipation vs. Junction Temperature

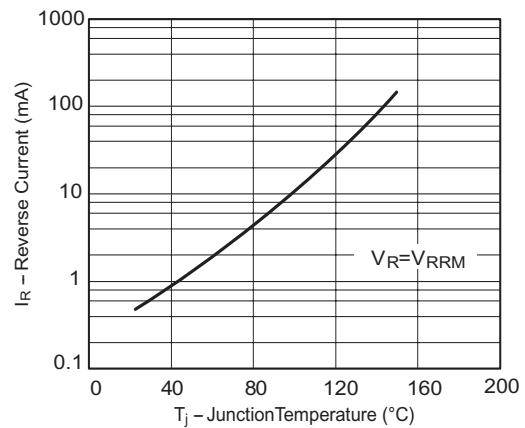


Figure 2. Max. Reverse Current vs. Junction Temperature

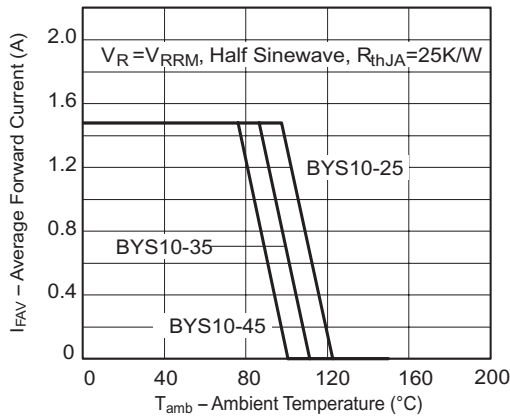


Figure 3. Max. Average Forward Current vs. Ambient Temperature

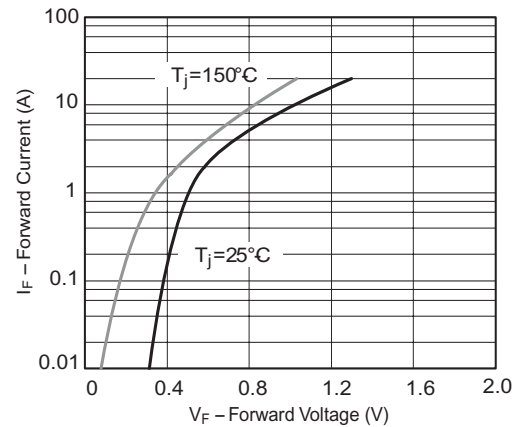


Figure 5. Max. Forward Current vs. Forward Voltage

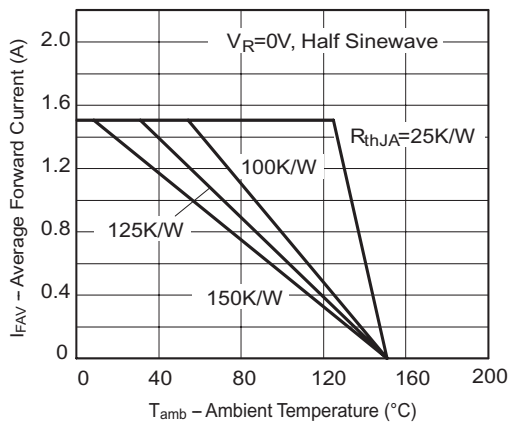


Figure 4. Max. Average Forward Current vs. Ambient Temperature

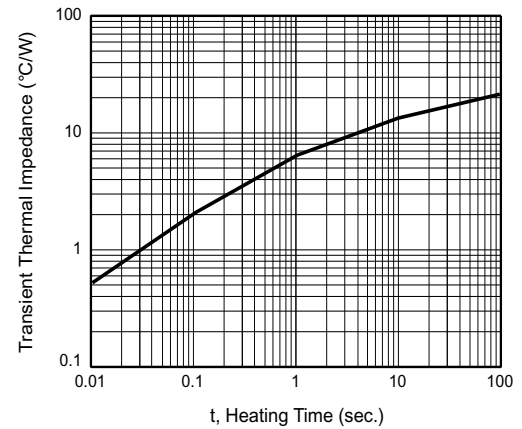
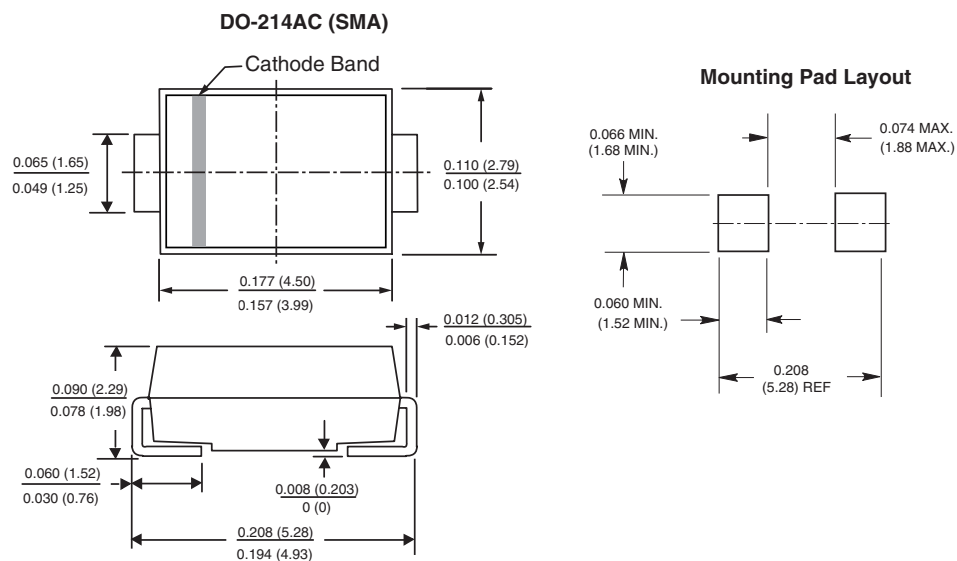


Figure 6. Diode Capacitance vs. Reverse Voltage

## Package outline dimensions in inches (millimeters)





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