BYS10-25 thru BYS10-45

Vishay General Semiconductor

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

Typical Applications

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

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

Maximum Ratings

T_A = 25 °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	at 8.3 ms at 10 ms	I_{FSM}	40 30			A
Junction and storage temperature range		T_J, T_{STG}	- 65 to + 150			°C

Electrical Characteristics

T_A = 25 °C unless otherwise specified#

Parameter	Test condition	Symbol	BYS10-25	BYS10-35	BYS10-45	Unit
Maximum instantaneous forward voltage	at 1.0 A (1)	V_F	500			mV
Maximum DC reverse current	at V_{RRM} (1) T_J = 25 °C T_J = 100 °C	I_R	500 10			µA mA

Notes:

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

Thermal Characteristics

T_A = 25 °C unless otherwise specified

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

Notes:

(1) Mounted on epoxy-glass hard tissue

(2) Mounted on epoxy-glass hard tissue, 50 mm^2 35 µm Cu

(3) Mounted on Al-oxide-ceramic (Al_2O_3), 50 mm^2 35 µm Cu

Ratings and Characteristics Curves

(T_A = 25 °C unless otherwise noted)

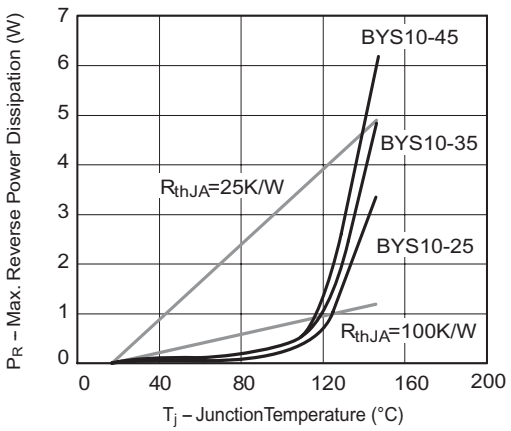

Figure 1. Max. Reverse Power Dissipation vs. Junction Temperature

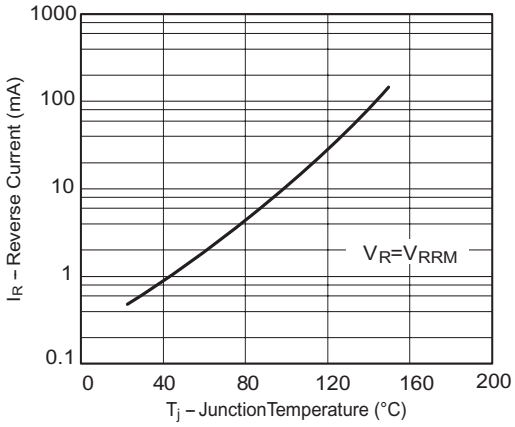

Figure 2. Max. Reverse Current vs. Junction Temperature

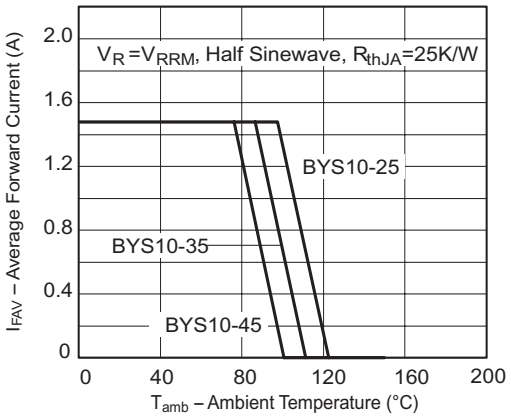

Figure 3. Max. Average Forward Current
vs. Ambient Temperature

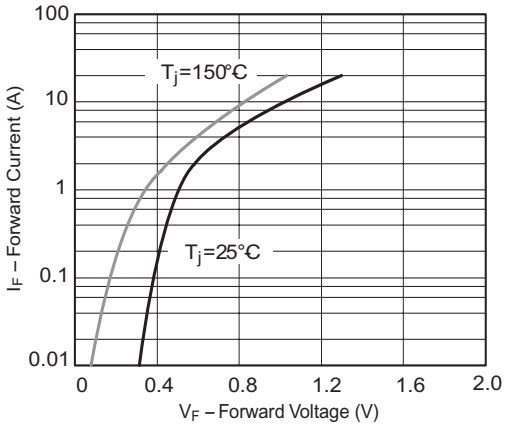

Figure 5. Max. Forward Current
vs. Forward Voltage

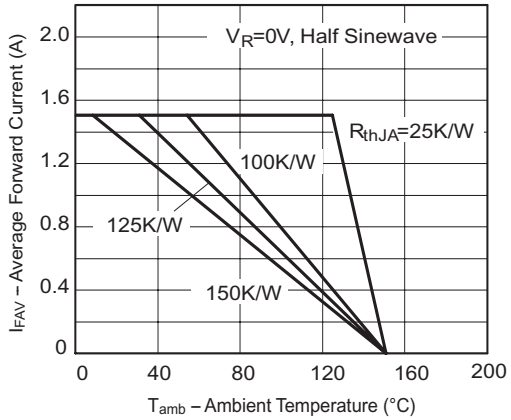

Figure 4. Max. Average Forward Current
vs. Ambient Temperature

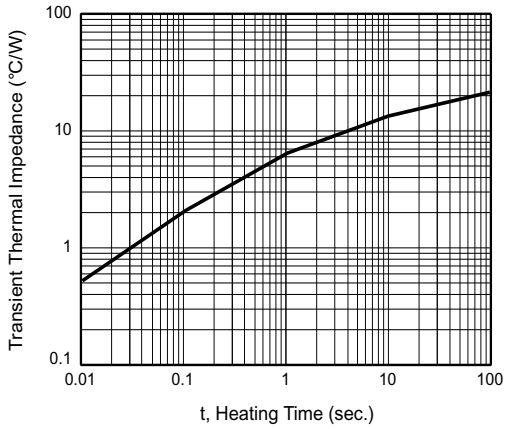

Figure 6. Diode Capacitance
vs. Reverse Voltage

Package outline dimensions in inches (millimeters)