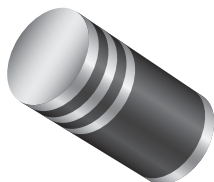


Surface Mount Schottky Barrier Rectifier



DO-213AB

FEATURES

- MELF Schottky rectifier
- Ideal for automated placement
- Guardring for overvoltage protection
- Low power losses, high efficiency
- Low forward voltage drop
- High surge capability
- Meets MSL level 1, per J-STD-020, LF maximum peak of 250 °C
- AEC-Q101 qualified
- Material categorization: For definitions of compliance please see www.vishay.com/doc?99912



RoHS
COMPLIANT

TYPICAL APPLICATIONS

For use in low voltage high frequency inverters, freewheeling, DC/DC converters, and polarity protection applications

MECHANICAL DATA

Case: DO-213AB

Molding compound meets UL 94 V-0 flammability rating

Base P/N-E3 - RoHS-compliant, commercial grade

Base P/NHE3 - RoHS-compliant, AEC-Q101 qualified

Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD 22-B102

E3 suffix meets JESD 201 class 1A whisker test, HE3 suffix meets JESD 201 class 2 whisker test

Polarity: Two bands indicate cathode end 1st band denotes device type 2nd band denotes voltage type

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	1.0 A
V_{RRM}	20 V to 60 V
I_{FSM}	30 A
V_F	0.50 V, 0.70 V
$T_J \text{ max.}$	125 °C, 150 °C
Package	DO-213AB
Diode variations	Single

MAXIMUM RATINGS (T _A = 25 °C unless otherwise noted)							
PARAMETER	SYMBOL	BYM13-20	BYM13-30	BYM13-40	BYM13-50	BYM13-60	UNIT
DENOTES SCHOTTKY DEVICES: 1 st BAND IS ORANGE		SGL41-20	SGL41-30	SGL41-40	SGL41-50	SGL41-60	
Polarity color bands (2 nd band) voltage type		Gray	Red	Orange	Yellow	Green	
Maximum repetitive peak reverse voltage	V _{RRM}	20	30	40	50	60	V
Maximum RMS voltage	V _{RMS}	14	21	28	35	42	V
Maximum DC blocking voltage	V _{DC}	20	30	40	50	60	V
Maximum average forward rectified current (fig. 1)	I _{F(AV)}	1.0					A
Peak forward surge current 8.3 ms single half sine-wave superimposed on rated load	I _{FSM}	30					A
Voltage rate of change (rated V _R)	dV/dt	10 000					V/μs
Operating junction temperature range	T _J	- 55 to + 125			- 55 to + 150		°C
Storage temperature range	T _{STG}	- 55 to + 150					°C

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

PARAMETER	TEST CONDITIONS		SYMBOL	BYM13-20	BYM13-30	BYM13-40	BYM13-50	BYM13-60	UNIT
				SGL41-20	SGL41-30	SGL41-40	SGL41-50	SGL41-60	
Maximum instantaneous forward voltage ⁽¹⁾	1.0 A		V _F	0.50	0.50	0.50	0.70	0.70	V
Maximum reverse current at rated DC blocking voltage ⁽¹⁾		T _A = 25 °C	I _R	0.5					mA
		T _A = 100 °C		10			5.0		
Typical junction capacitance	4.0 V, 1.0 MHz		C _J	110			80		pF

Note

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

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

PARAMETER	SYMBOL	BYM13-20	BYM13-30	BYM13-40	BYM13-50	BYM13-60	UNIT
		SGL41-20	SGL41-30	SGL41-40	SGL41-50	SGL41-60	
Maximum thermal resistance ⁽¹⁾	R _{θJA}	75					°C/W
	R _{θJT}	30					

Note

⁽¹⁾ Thermal resistance junction to terminal, 0.24" x 0.24" (6.0 mm x 6.0 mm) copper pads to each terminal

ORDERING INFORMATION (Example)

PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
SGL41-40-E3/96	0.137	96	1500	7" diameter plastic tape and reel
SGL41-40-E3/97	0.137	97	5000	13" diameter plastic tape and reel
BYM13-40-E3/96	0.137	96	1500	7" diameter plastic tape and reel
BYM13-40-E3/97	0.137	97	5000	13" diameter plastic tape and reel
SGL41-40HE3/96 ⁽¹⁾	0.137	96	1500	7" diameter plastic tape and reel
SGL41-40HE3/97 ⁽¹⁾	0.137	97	5000	13" diameter plastic tape and reel
BYM13-40HE3/96 ⁽¹⁾	0.137	96	1500	7" diameter plastic tape and reel
BYM13-40HE3/97 ⁽¹⁾	0.137	97	5000	13" diameter plastic tape and reel

Note

⁽¹⁾ AEC-Q101 qualified

RATINGS AND CHARACTERISTICS CURVES

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

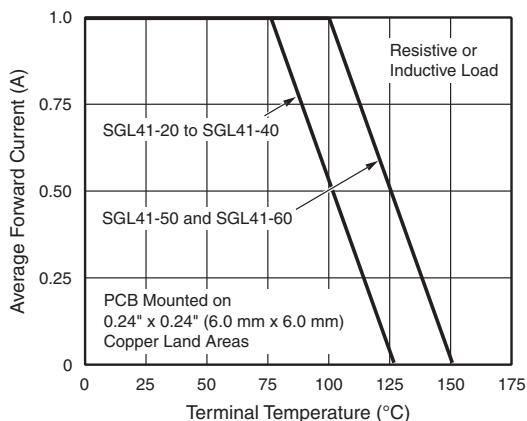


Fig. 1 - Forward Current Derating Curve

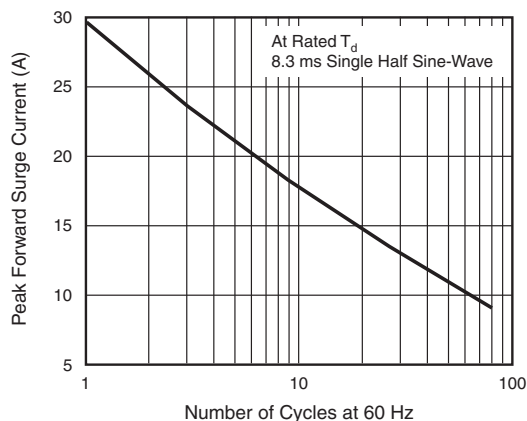


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

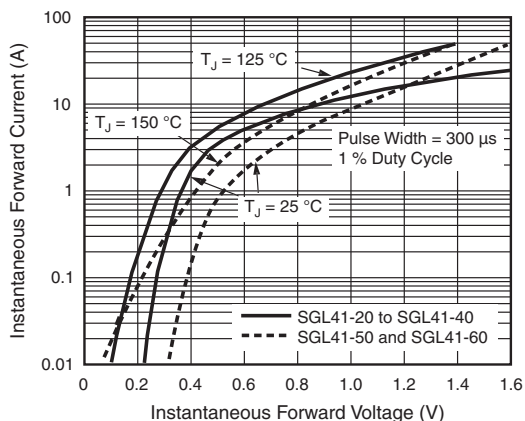


Fig. 3 - Typical Instantaneous Forward Characteristics

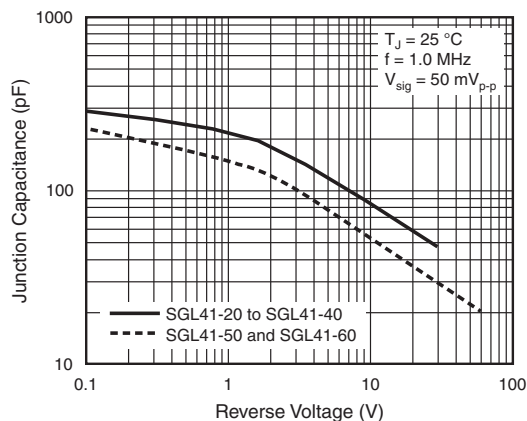


Fig. 5 - Typical Junction Capacitance

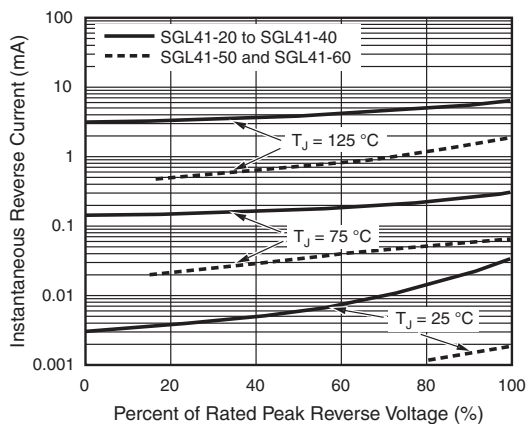
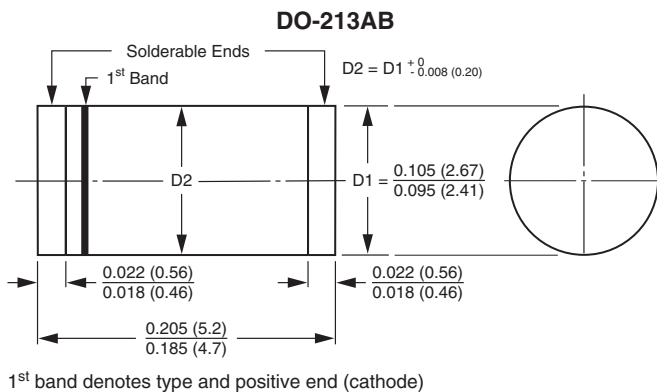
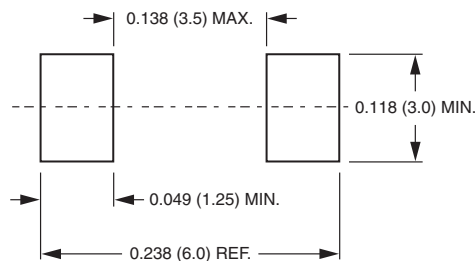


Fig. 4 - Typical Reverse Characteristics

PACKAGE OUTLINE DIMENSIONS in inches (millimeters)



Mounting Pad Layout





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