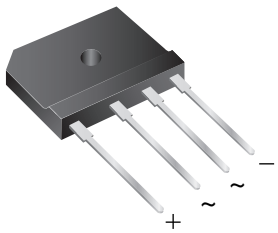
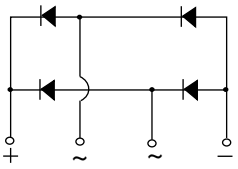
Low V_F Single-Phase Single In-Line Bridge Rectifiers





Case Style GSIB-5S

FEATURES

- UL recognition file number E312394
- Thin single in-line package
- Oxide planar chip junction
- Low forward voltage drop
- High surge current capability
- Low noise
- High case dielectric strength of 2500 V_{RMS}, 1 minute
- Solder dip 275 °C max. 10 s, per JESD 22-B106
- Material categorization: for definitions of compliance please see www.vishay.com/doc?99912

RoHS COMPLIANT

HALOGEN FREE

LINKS TO ADDITIONAL RESOURCES

3D Models

PRIMARY CHARACTERISTICS	
$I_{F(AV)}$	25 A
V_{RRM}	800 V
I_{FSM}	350 A
I_R	5 µA
V_F at I_F = 12.5 A, T_J = 125 °C	0.78
T_J max.	150 °C
Package	GSIB-5S
Circuit configuration	In-line

TYPICAL APPLICATIONS

General purpose use in AC/DC bridge full wave rectification for switching power supply, home appliances, and white-goods applications specially for telecom power supply, high efficiency desktop PC, and server SMPS.

MECHANICAL DATA

Case: GSIB-5S

Epoxy meets UL 94 V-0 flammability rating

Base P/N-M3 - halogen-free, RoHS-compliant, and commercial grade

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

M3 suffix meets JESD 201 class 1A whisker test

Polarity: as marked on body

Mounting Torque: 10 cm-kg (8.8 in-lbs) maximum

Recommended Torque: 5.7 cm-kg (5 in-lbs)

MAXIMUM RATINGS (T_A = 25 °C unless otherwise noted)

PARAMETER		SYMBOL	LVE2580E	UNIT
Marking code			LVE2580E	
Maximum repetitive peak reverse voltage		V_{RRM}	800	V
Maximum RMS voltage		V_{RMS}	560	V
Maximum DC blocking voltage		V_{DC}	800	V
Maximum average forward rectified output current at	T_C = 100 °C	I_O (1)	25	A
	T_A = 25 °C	I_O (2)	3.7	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, T_J = 25 °C		I_{FSM}	350	A
Rating for fusing (t < 8.3 ms), T_J = 25 °C		I^2t	508	A^2s
Operating junction and storage temperature range		T_J, T_{STG}	-55 to +150	°C

Notes

(1) Unit case mounted on aluminum plate heatsink

(2) Units mounted on PCB without heatsink

ELECTRICAL CHARACTERISTICS (T_J = 25 °C unless otherwise noted)						
PARAMETER	TEST CONDITIONS		SYMBOL	TYP.	MAX.	UNIT
Instantaneous forward voltage	I_F = 12.5 A	T_J = 25 °C	V_F (1)	0.89	0.93	V
		T_J = 125 °C		0.78	-	
Reverse current per diode	V_R = 800 V	T_J = 25 °C	I_R (2)	0.05	5	μA
		T_J = 125 °C		30	-	
Typical reverse recovery time	I_F = 0.5 A, I_R = 1.0 A, I_{rr} = 0.25 A		t_{rr}	450	-	ns
Typical junction capacitance	4.0 V, 1 MHz		C_J	220	-	pF

Notes

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

(2) Pulse test: pulse width ≤ 40 ms

THERMAL CHARACTERISTICS (T_A = 25 °C unless otherwise noted)			
PARAMETER	SYMBOL	LVE2580E	UNIT
Maximum thermal resistance	$R_{\theta JA}$ (1)	24	°C/W
	$R_{\theta JC}$ (2)	1	

Notes

(1) Without heatsink, free air

(2) With heatsink

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
LVE2580E-M3/P	6.9	P	20	Tube

RATINGS AND CHARACTERISTICS CURVES (T_A = 25 °C unless otherwise noted)

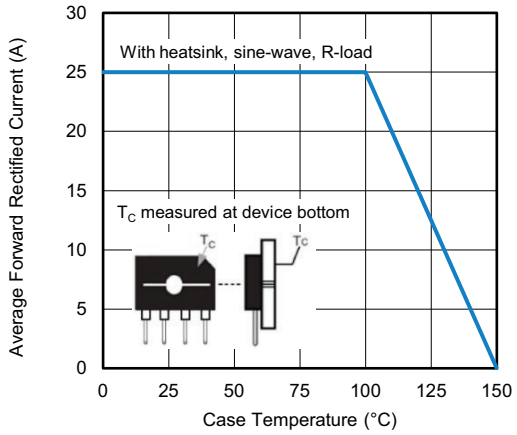


Fig. 1 - Derating Curve Output Rectified Current

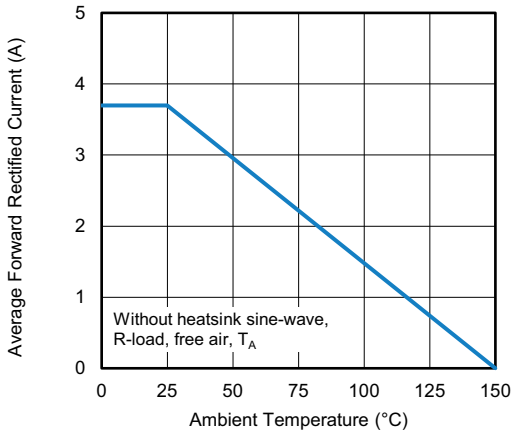


Fig. 2 - Forward Current Derating Curve

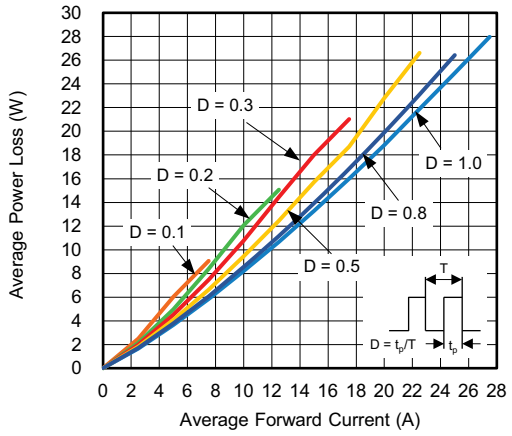


Fig. 3 - Forward Power Dissipation

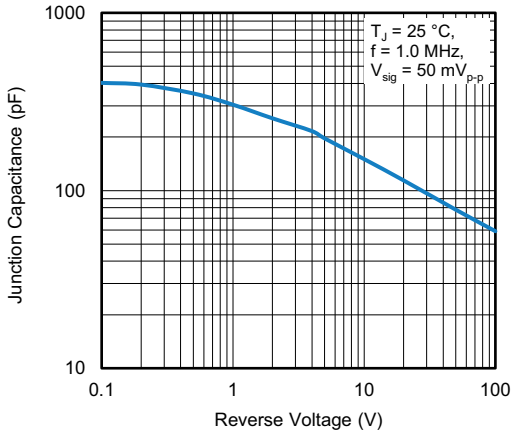


Fig. 6 - Typical Junction Capacitance per Diode

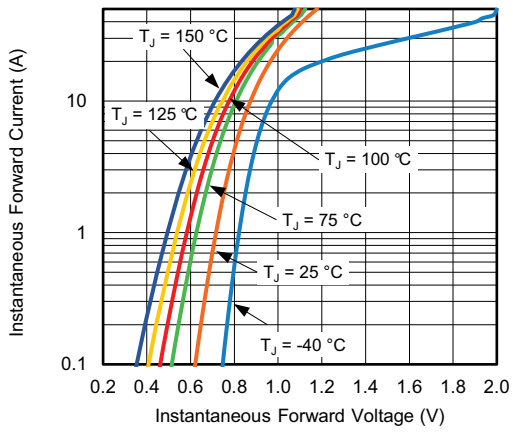


Fig. 4 - Typical Forward Characteristics per Diode

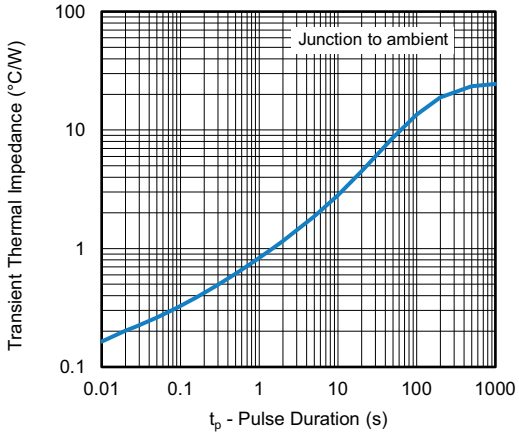


Fig. 7 - Typical Transient Thermal Impedance

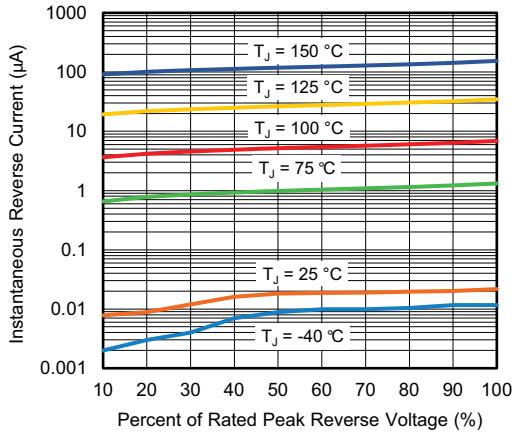
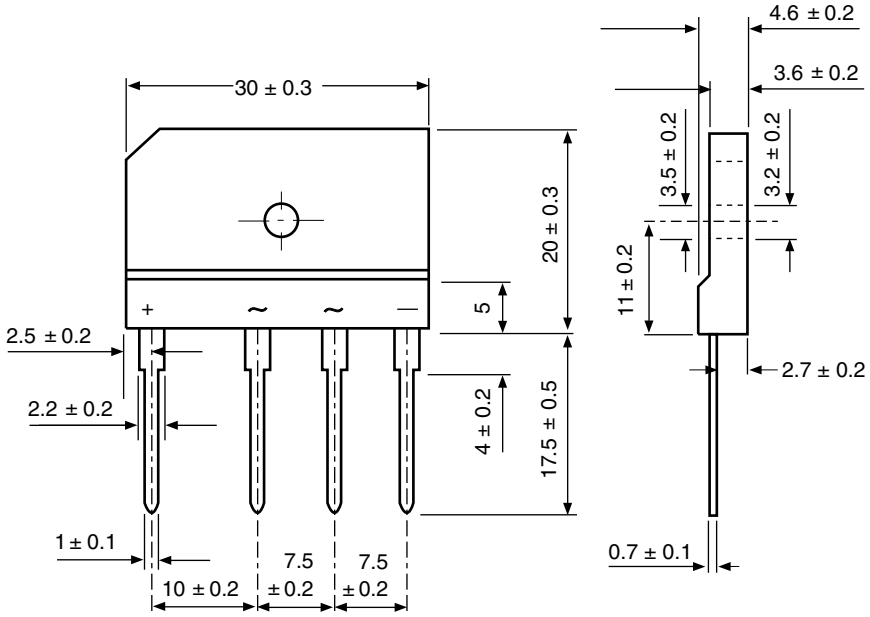


Fig. 5 - Typical Reverse Characteristics Per Diode

PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S



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