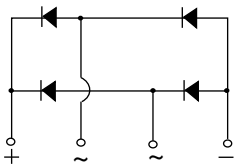
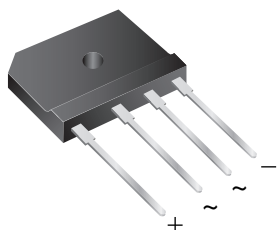


Low V_F Single-Phase Single In-Line Bridge Rectifiers



Case Style GSIB-5S



RoHS
COMPLIANT
HALOGEN
FREE

LINKS TO ADDITIONAL RESOURCES



PRIMARY CHARACTERISTICS	
$I_{F(AV)}^{(1)}$	50 A
V_{RRM}	600 V
I_{FSM}	660 A
I_R	10 μ A
V_F at $I_F = 25$ A, $T_J = 125$ °C	0.77 V
T_J max.	175 °C
Package	GSIB-5S
Circuit configuration	In-line

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

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	LVE5060E	UNIT
Marking code		LVE5060E	
Maximum repetitive peak reverse voltage	V_{RRM}	600	V
Maximum RMS voltage	V_{RMS}	420	V
Maximum DC blocking voltage	V_{DC}	600	V
Maximum average forward rectified output current at	$T_C = 52.5$ °C	$I_O^{(1)}$	A
	$T_A = 25$ °C	$I_O^{(2)}$	
Non-repetitive peak forward surge current 8.3 ms single sine-wave, $T_J = 25$ °C	I_{FSM}	600	A
Rating for fusing ($t < 8.3$ ms), $T_J = 25$ °C	I^2t	1490	A ² s
Operating junction and storage temperature range	T_J, T_{STG}	-55 to +175	°C

Notes

(1) With heatsink, 50Hz sine wave, resistance load

(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 = 25 A	T _J = 25 °C	V _F ⁽¹⁾	0.89	0.93	V
		T _J = 125 °C		0.77	-	
Reverse current per diode	V _R = 600 V	T _J = 25 °C	I _R ⁽²⁾	0.03	10	μA
		T _J = 125 °C		35	-	
Typical reverse recovery time	I _F = 0.5 A, I _R = 1.0 A, I _{rr} = 0.25 A		t _{rr}	300	-	ns
Typical junction capacitance	4.0 V, 1 MHz		C _J	372	-	pF

Notes

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

(2) Pulse test: pulse width $\leq 40\text{ ms}$

THERMAL CHARACTERISTICS ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)			
PARAMETER	SYMBOL	LVE5060E	UNIT
Maximum thermal resistance	$R_{\theta JA}^{(1)(2)}$	22	$^{\circ}\text{C/W}$
	$R_{\theta JC}^{(3)}$	1.2	

Notes

(1) The heat generated must be less than the thermal conductivity from junction-to-ambient: $dP_D/dT_J < 1/R_{\theta JA}$

(2) Thermal resistance junction-to-ambient to follow JEDEC[®] 51-2A, device mounted on FR4 PCB, 2 oz.

(3) Thermal resistance junction-to-caseto follow JEDEC[®] 51-14 transient dual interface test method (TDIM)

ORDERING INFORMATION (Example)				
PREFERRED P/N	UNIT WEIGHT (g)	PREFERRED PACKAGE CODE	BASE QUANTITY	DELIVERY MODE
LVE5060E-M3/P	6.9	P	20	Tube

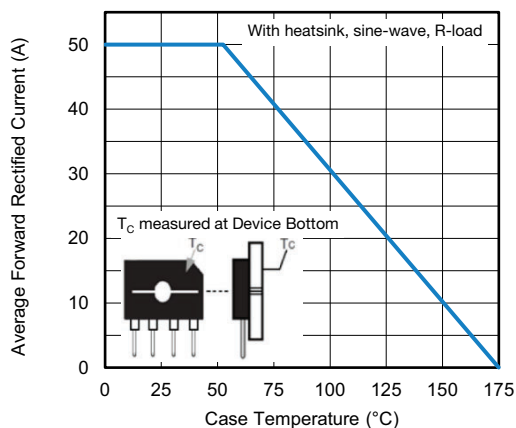
RATINGS AND CHARACTERISTICS CURVES ($T_A = 25\text{ }^{\circ}\text{C}$ unless otherwise noted)


Fig. 1 - Derating Curve Output Rectified Current

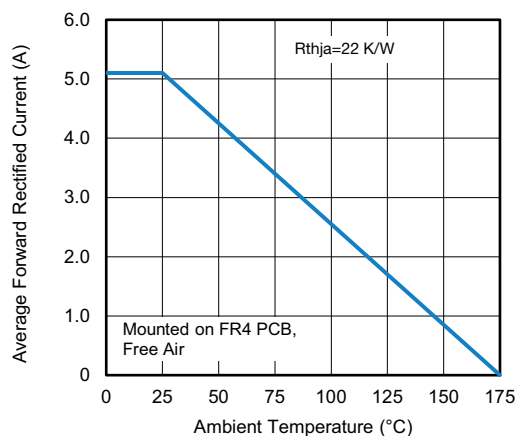


Fig. 2 - Forward Current Derating Curve

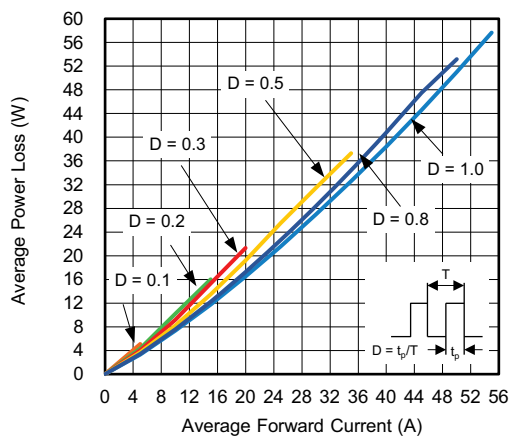


Fig. 3 - Forward Power Dissipation

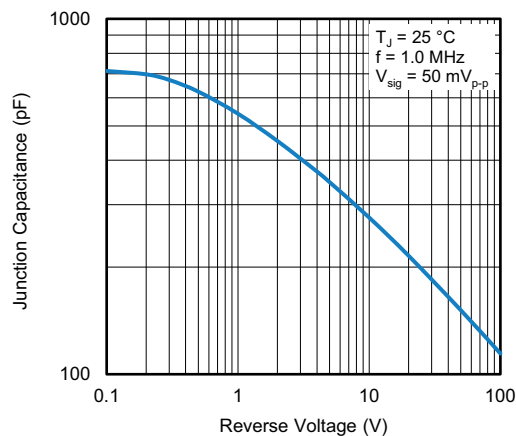


Fig. 6 - Typical Junction Capacitance Per Diode

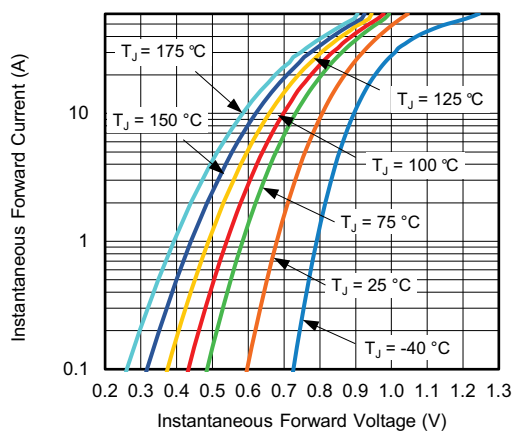


Fig. 4 - Typical Forward Characteristics Per Diode

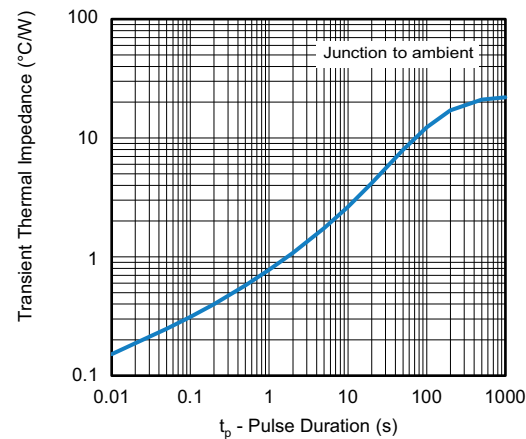


Fig. 7 - Typical Transient Thermal Impedance

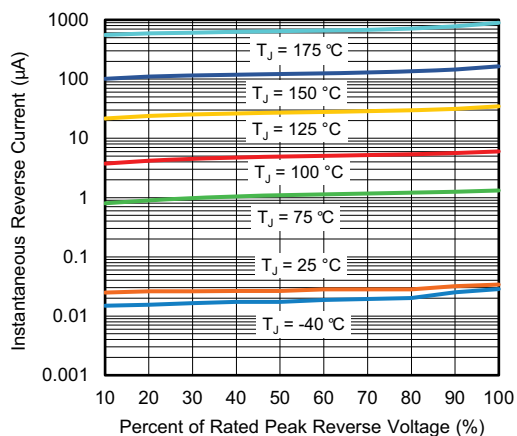
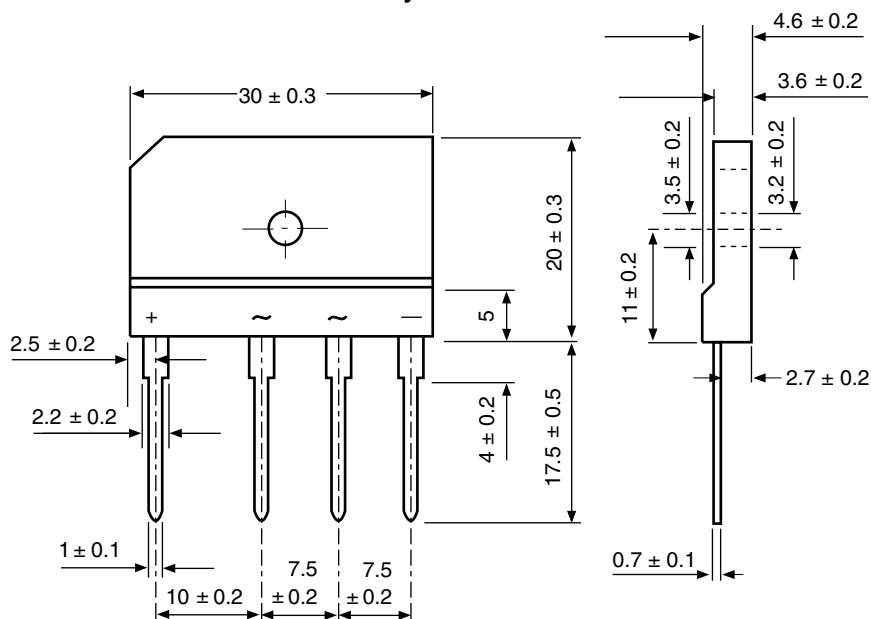


Fig. 5 - Typical Reverse Characteristics Per Diode



PACKAGE OUTLINE DIMENSIONS in millimeters

Case Style GSIB-5S





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