

25A, 600V Low V_F Standard Bridge Rectifier

FEATURES

- Qualification reference AEC-Q101
- Low forward drop enhances the efficiency
- High surge current capability
- UL Recognized File # E-326243
- High case dielectric strength of 2500 V_{RMS}
- RoHS Compliant
- Halogen-free

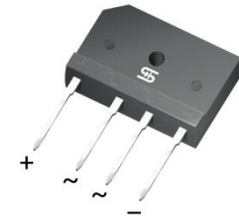
APPLICATIONS

- Switching mode power supply (SMPS)
- AC to DC
- On board charger

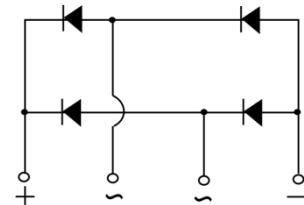
MECHANICAL DATA

- Case: TS-6P
- Molding compound meets UL 94V-0 flammability rating
- Terminal: Matte tin plated leads, solderable per J-STD-002
- Meet JESD 201 class 2 whisker test
- Mounting torque: 0.80 N·m maximum
- Polarity: As marked
- Weight: 7.26g (approximately)

KEY PARAMETERS		
PARAMETER	VALUE	UNIT
I_F	25	A
V_{RRM}	600	V
I_{FSM}	390	A
$T_{J\ MAX}$	175	°C
Package	TS-6P	
Circuit Configuration	In-line	



TS-6P



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

PARAMETER	SYMBOL	VALUE	UNIT
Repetitive peak reverse voltage	V_{RRM}	600	V
Reverse voltage, total rms value	$V_{R(RMS)}$	420	V
Forward current	I_F	25	A
Surge peak forward current, single half sine-wave superimposed on rated load per diode	$t = 8.3\text{ms}$	I_{FSM} 390	A
	$t = 1.0\text{ms}$	900	A
Rating of fusing ($t < 8.3\text{ms}$)	I^2t	631	A^2s
Junction temperature	T_J	- 55 to +175	°C
Storage temperature	T_{STG}	- 55 to +175	°C

THERMAL PERFORMANCE

PARAMETER	SYMBOL	TYP	UNIT
Junction-to-lead thermal resistance	$R_{\theta JL}$	1.0	°C/W
Junction-to-ambient thermal resistance	$R_{\theta JA}$	5	°C/W
Junction-to-case thermal resistance	$R_{\theta JC}$	0.8	°C/W

Thermal Performance Note: Mounted on heat sink with 4" x 6" x 0.25" Al-Plate

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

PARAMETER	CONDITIONS	SYMBOL	TYP	MAX	UNIT
Forward voltage per diode ⁽¹⁾	$I_F = 12.5\text{A}, T_J = 25^\circ\text{C}$	V_F	0.89	0.92	V
	$I_F = 12.5\text{A}, T_J = 125^\circ\text{C}$		0.76	-	V
Reverse current @ rated V_R per diode ⁽²⁾	$T_J = 25^\circ\text{C}$	I_R	-	10	μA
	$T_J = 125^\circ\text{C}$		0.5	-	μA
Junction capacitance per diode	1MHz, $V_R = 4.0\text{V}$	C_J	248	-	pF
Reverse recovery time	$I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{rr} = 0.25\text{A}$	t_{rr}	1050	-	ns

Notes:

1. Pulse test with $PW = 0.3\text{ms}$
2. Pulse test with $PW = 30\text{ms}$

ORDERING INFORMATION

ORDERING CODE	PACKAGE	PACKING
GBJL25J	TS-6P	15 / Tube

CHARACTERISTICS CURVES

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

Fig.1 Forward Current Derating Curve

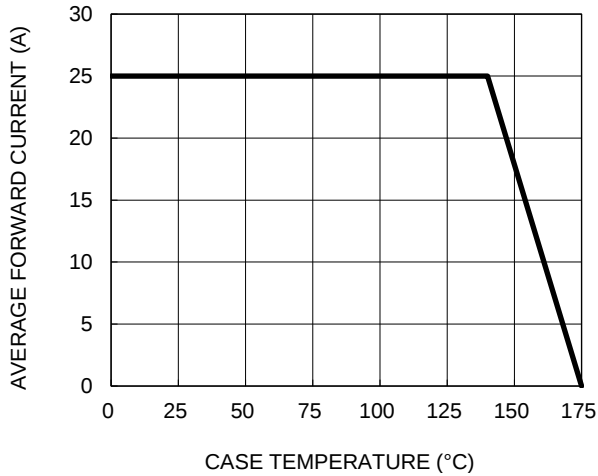


Fig.2 Typical Junction Capacitance

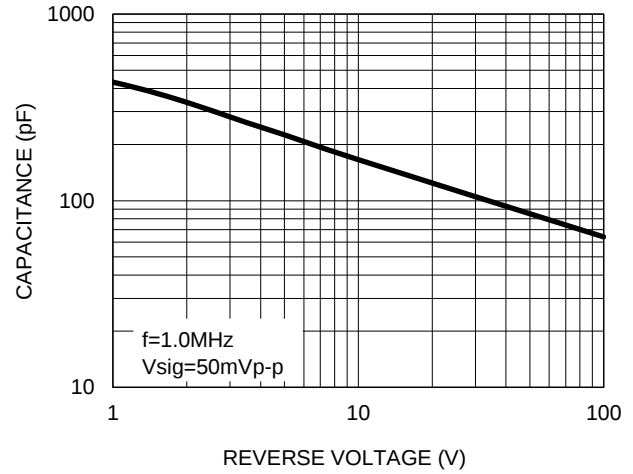


Fig.3 Typical Reverse Characteristics

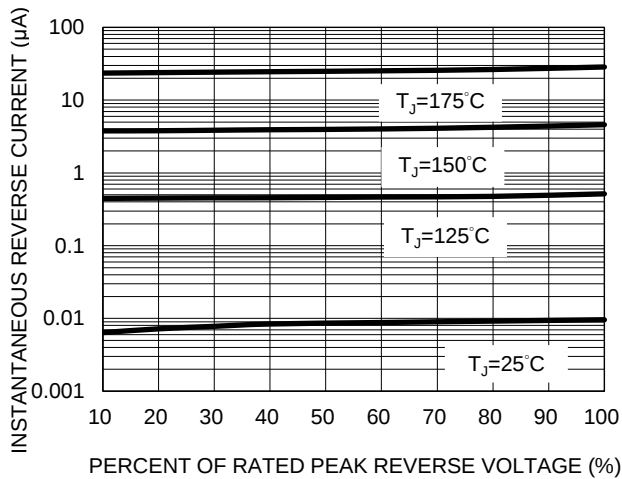


Fig.4 Typical Forward Characteristics

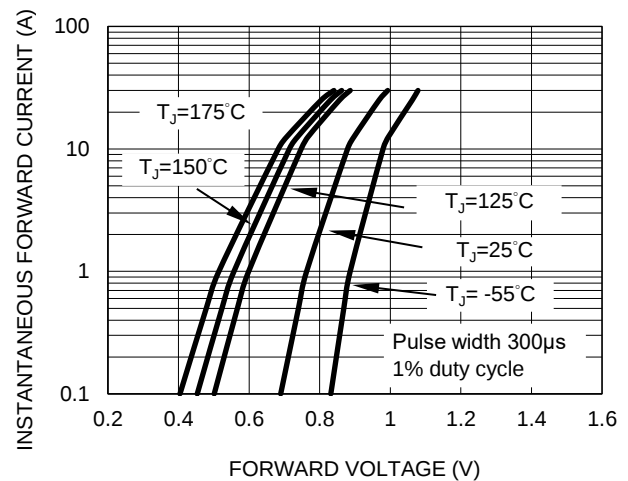
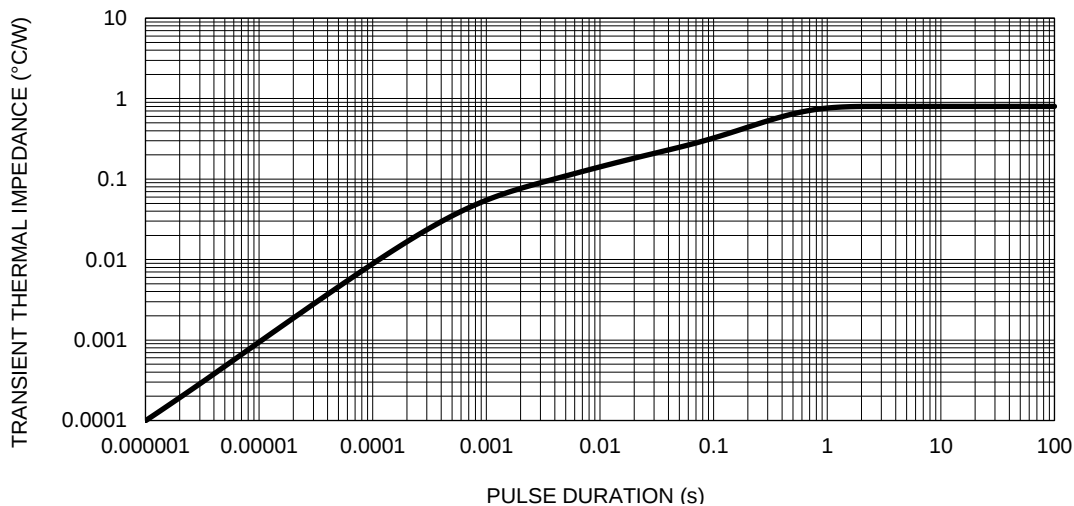
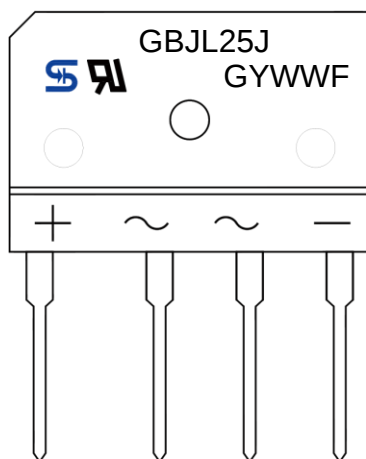
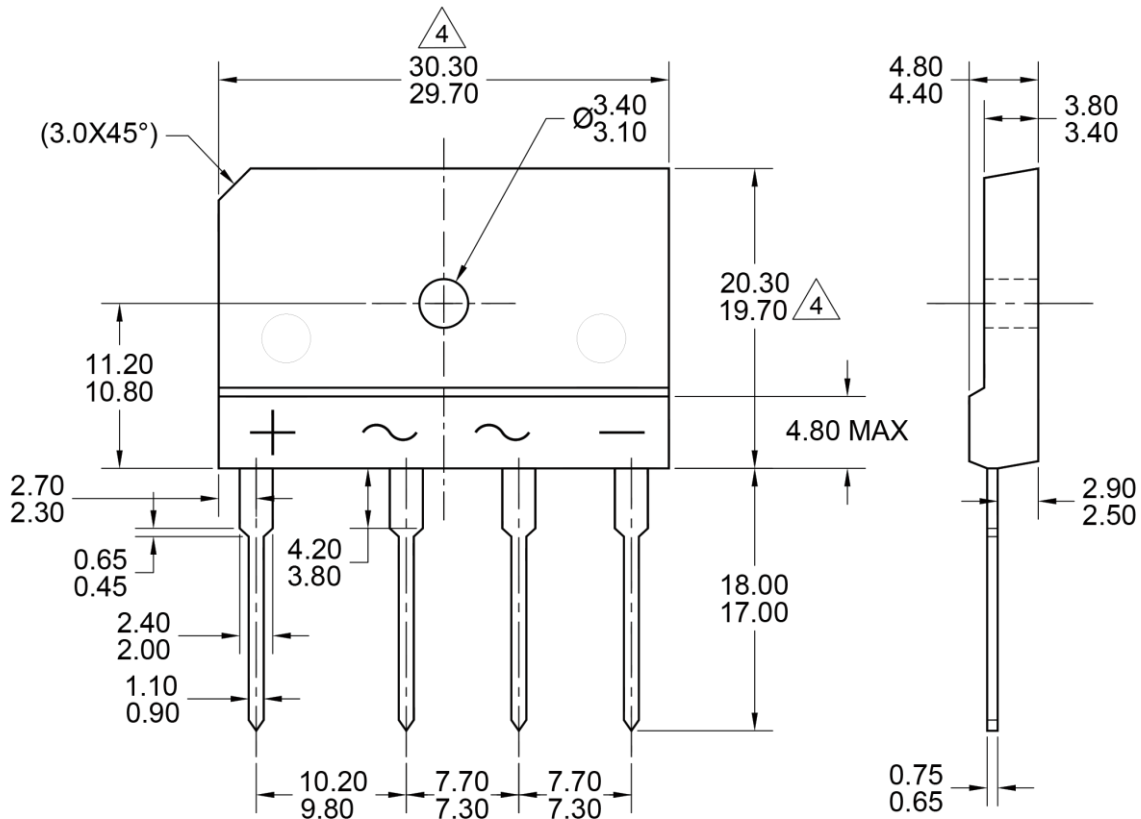


Fig.5 Typical Transient Thermal Impedance



PACKAGE OUTLINE DIMENSIONS

TS-6P



MARKING DIAGRAM

G = GREEN COMPOUND
YWW = DATE CODE
F = FACTORY CODE

NOTES: UNLESS OTHERWISE SPECIFIED

1. ALL DIMENSIONS ARE IN MILLIMETERS.
2. DIMENSIONING AND TOLERANCING PER ASME Y14.5M-1994.
3. THERE IS NO EXISTING PACKAGE OUTLINE INDUSTRY STANDARD FOR THIS PACKAGE.

4 MOLDING PLASTIC BODY DIMENSIONS DO NOT INCLUDE MOLD FLASH, PROTRUSIONS OR GATE BURRS.

5. DWG NO. REF: HQ2SD07-TS6P-069 REV A.

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