

BR3005 THRU BR310

List

List.....	1
Package outline.....	2
Features.....	2
Mechanical data.....	2
Maximum ratings	2
Rating and characteristic curves.....	3
Pinning information.....	4
Marking.....	4
Bulk packing.....	4
Suggested thermal profiles for soldering processes.....	5
High reliability test capabilities.....	6

BR3005 THRU BR310

3.0A Silicon Passivated Single-Phase Bridge Rectifiers- 50- 1000V

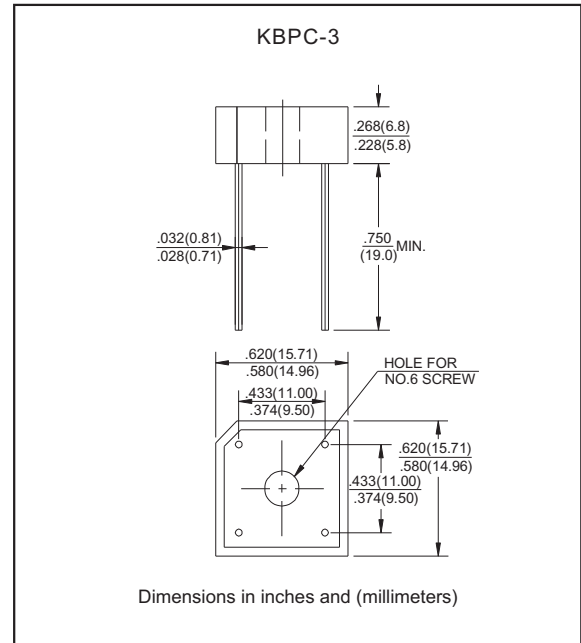
Package outline

Features

- Surge overload rating 40 amperes peak.
- Low forward voltage drop.
- Small size; simple installation.
- Tinned copper leads.
- Lead-free parts for green partner, meet RoHS requirements
- Suffix "-H" indicates Halogen free parts, ex. BR3005-H.

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, KBPC-3
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on body
- Mounting Position : Any



Maximum ratings and Electrical Characteristics (AT $T_A=25^{\circ}C$ unless otherwise noted)

PARAMETER	CONDITIONS	Symbol	MIN.	TYP.	MAX.	UNIT
Forward rectified current	See Fig.1	I_o			3.0	A
Forward surge current	8.3ms single half sine-wave superimposed on rate load (JEDEC methode)	I_{FSM}			40	A
Reverse current	$V_R = V_{RRM} T_J = 25^{\circ}C$	I_R			10.0	uA
	$V_R = V_{RRM} T_J = 100^{\circ}C$				1000	
Storage temperature		T_{STG}	-65		+175	$^{\circ}C$

SYMBOLS	V_{RRM}^{*1} (V)	V_{RMS}^{*2} (V)	V_R^{*3} (V)	V_F^{*4} (V)	Operating temperature $T_J, (^{\circ}C)$
BR3005	50	35	50	1.10	-55 to +125
BR301	100	70	100		
BR302	200	140	200		
BR304	400	280	400		
BR306	600	420	600		
BR308	800	560	800		
BR310	1000	700	1000		

*1 Repetitive peak reverse voltage

*2 RMS voltage

*3 Continuous reverse voltage

*4 Maximum forward voltage
Per Bridge Element@ $I_F=1.5A$

Rating and characteristic curves (BR3005 THRU BR310)

Fig.1 - Forward Current Derating Curve

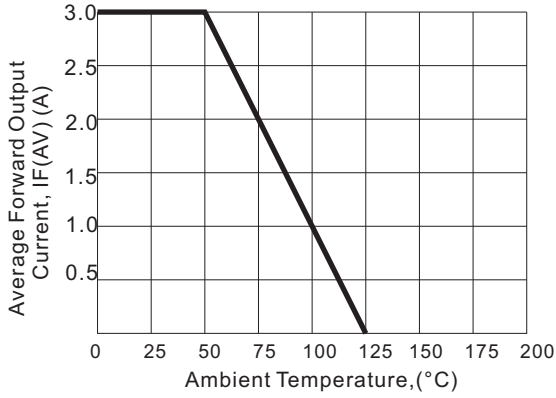


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

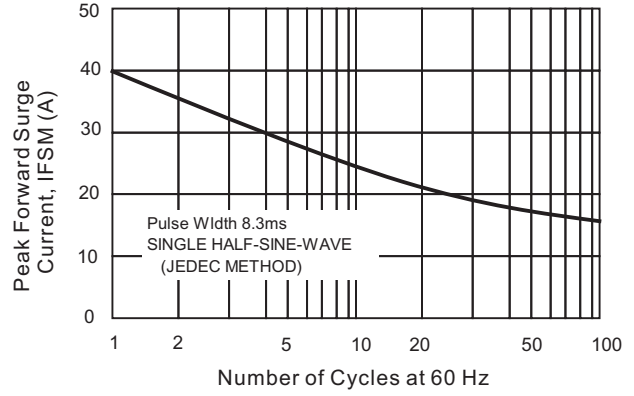


Fig. 3 - Typical Forward Characteristics

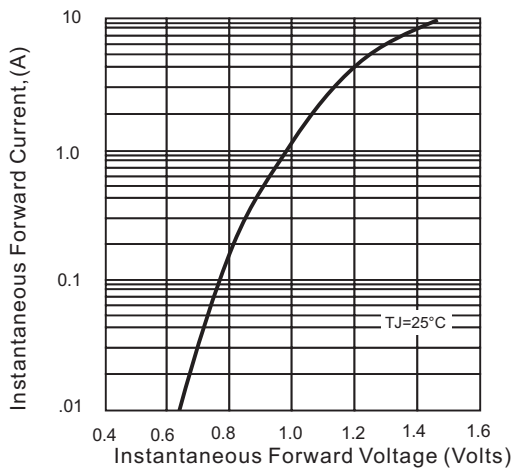
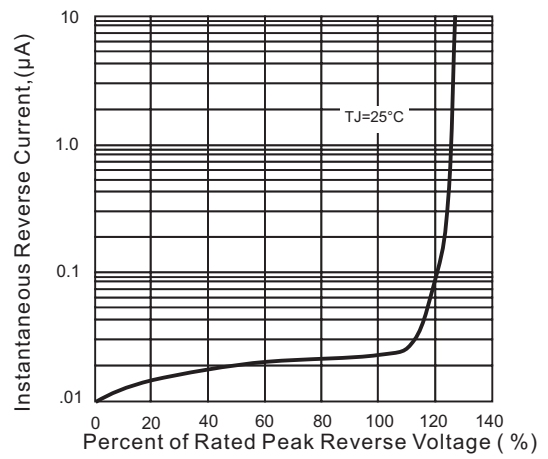
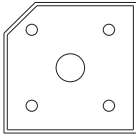
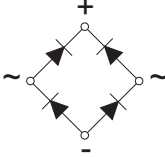


Fig. 4 - Typical Reverse Characteristics



BR3005 THRU BR310

Pinning information

Simplified outline	Symbol
	

Marking

Type number	Marking code
BR3005	BR3005
BR301	BR301
BR302	BR302
BR304	BR304
BR306	BR306
BR308	BR308
BR310	BR310

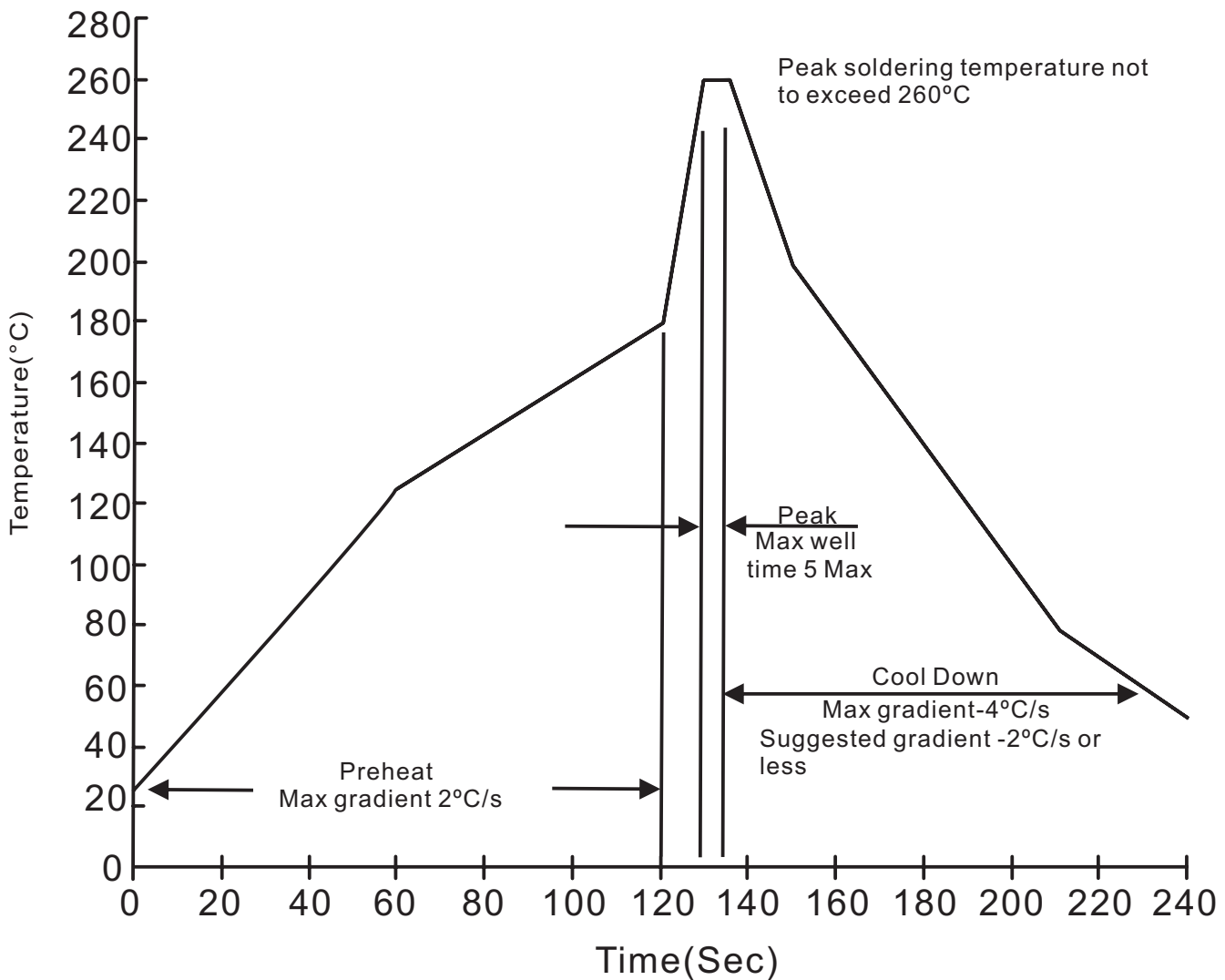
Bulk packing

PACKAGE	BOX (pcs)	INNER BOX (m/m)	CARTON SIZE (m/m)	CARTON (pcs)	APPROX. GROSS WEIGHT (kg)
KBPC-3	200	203*203*44	445*215*260	2,000	8.0

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Suggested thermal profiles for soldering processes

1. Lead free temperature profile wave-soldering



BR3005 THRU BR310**High reliability test capabilities**

Item Test	Conditions	Reference
1. Solder Resistance	at $260\pm 5^{\circ}\text{C}$ for $10\pm 2\text{sec.}$ immerse body into solder $1/16''\pm 1/32''$	MIL-STD-750D METHOD-2031
2. Solderability	at $245\pm 5^{\circ}\text{C}$ for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	$V_R=80\%$ rate at $T_J=125^{\circ}\text{C}$ for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at $T_A=25^{\circ}\text{C}$ for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	$T_A = 25^{\circ}\text{C}$, $I_F = I_o$ On state: power on for 5 min. off state: power off for 5 min. on and off for 500 cycles.	MIL-STD-750D METHOD-1036
6. Pressure Cooker	$15P_{SIG}$ at $T_A=121^{\circ}\text{C}$ for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to $+125^{\circ}\text{C}$ dwelled for 30 min. and transferred for 5min. total 10 cycles.	MIL-STD-750D METHOD-1051
8. Thermal Shock	0°C for 5 min. rise to 100°C for 5 min. total 10 cycles.	MIL-STD-750D METHOD-1056
9. Forward Surge	8.3ms single half sine-wave superimposed on rated load, one surge.	MIL-STD-750D METHOD-4066-2
10. Humidity	at $T_A=85^{\circ}\text{C}$, RH=85% for 1000hrs.	MIL-STD-750D METHOD-1021
11. High Temperature Storage Life	at 175°C for 1000 hrs.	MIL-STD-750D METHOD-1031