GBPC1000 THRU GBPC5010

List

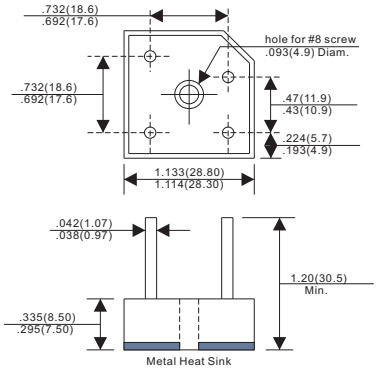
Formosa MS

GBPC1000 THRU GBPC5010

10.0A ~ 50.0A Glass Passivated Single-Phase Bridge Rectifiers - *50V-1000V*

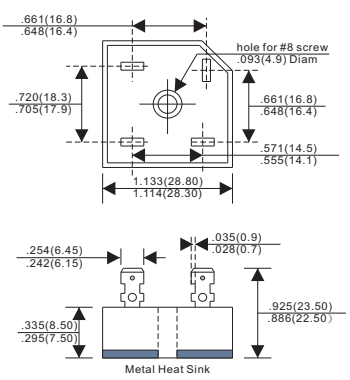
Package outline

GBPC-W



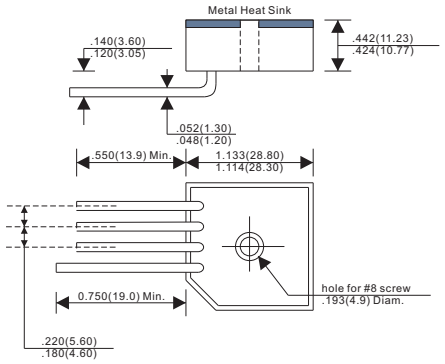
Dimensions in inches and (millimeters)

GBPC-T



Dimensions in inches and (millimeters)

KBPC-PS



Dimensions in inches and (millimeters)

Features

- Surge overload ratings to 450 amperes peak.
- Low Forward drop voltage & reverse leakage current.
- Integrally molded heatsink provides very low thermal Resistance for maximum heat dissipation
- Universal 3-way terminals for selection, faston terminals wire leads and wire-lead single in line.
- Glass passivated chip junctions.
- Lead-free parts meet RoHS requirments.
- UL recognized file # E321971

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, GBPC case with heatsink
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : marked on side body
- Mounting Position : Hole thru for #10 screw(Note A)
- Mounting Torque: 20 in-lb (23cm-kg) max.
- Weight : GBPC-W , 0.53 ounce,15 grams
  GBPC-T, 0.63 ounce, 18 grams
  KBPC-PS, 0.63 ounce, 18 grams

Part Numbering

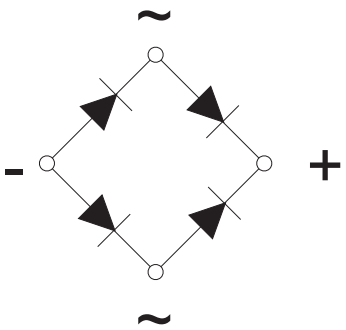
GBPC10 01 - T

Lead Types,
T : faston terminals
W : wire leads
S : wire-lead single in line

Reverse Voltage,
00: 50V 01: 100V 02: 200V
04: 400V 06: 600V 08: 800V
10: 1000V 12: 1200V

Forward Rectified Output Current,
10: 10.0A 15: 15.0A 25: 25.0A
35: 35.0A 40: 40.0A 50: 50.0A

Circuit Diagram



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Maximum ratings (AT T_A=25°C unless otherwise noted)

GBPCXX, XX=10, 15, 25, 35, 40 or 50		Symbols	GBPC xx00	GBPC xx01	GBPC xx02	GBPC xx04	GBPC xx06	GBPC xx08	GBPC xx10	Unit
Maximum Recurrent Peak Reverse Voltage		V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage		V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage		V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Output Current (See Fig. 1)	GBPC10 GBPC15 GBPC25 GBPC35 GBPC40 GBPC50	$I_{(AV)}$	10.0 15.0 25.0 35.0 40.0 50.0							Amps
Peak Forward Surge Current 8.3mS single half sine-wave superimposed on rated load (JEDEC Method)	GBPC10 GBPC15 GBPC25 GBPC35 GBPC40 GBPC50	I_{FSM}	200 300 300 400 400 450							Amps
Rating (Non-Repetitive, for t greater than 1ms and less than 8.3ms) for fusing	GBPC10 GBPC15 GBPC25 GBPC35 GBPC40 GBPC50	I^2t	166 374 374 664 664 840							A^2sec
Maximum Instantaneous Forwared Voltage Drop Per Leg at	GBPC10 I_F= 5.0A GBPC15 I_F= 7.5A GBPC25 I_F=12.5A GBPC35 I_F=17.5A GBPC40 I_F=20.0A GBPC50 I_F=25.0A	V_F	1.1							Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage	T_J= 25°C T_J=125°C	I_R	5.0 500.0							μA
Operating Junction Temperature Range		T_J	-55 ~ +150							°C
Storage Temperature Range		T_{STG}	-65 ~ +150							°C

Rating and characteristic curves (GBPC1000 THRU GBPC5010)

Fig.1 - Derating Curve Output Rectified Current

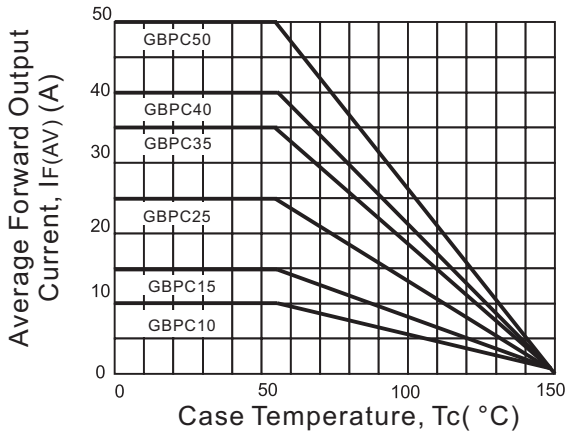


Fig. 2 - Maximum Non-Repetitive Peak Forward Surge Current

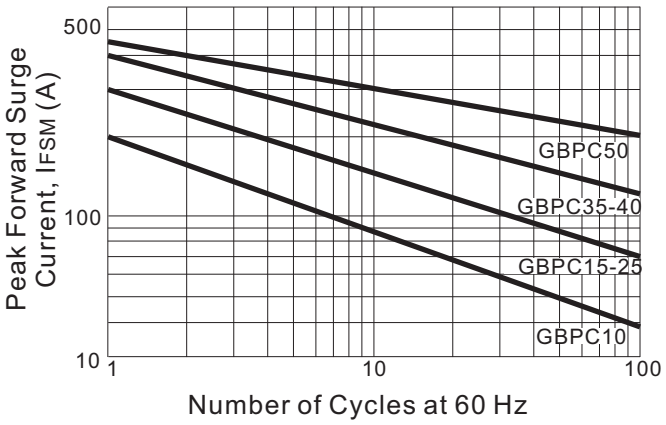


Fig. 3 - Typical Instantaneour Forward Characteristics (Per Leg)

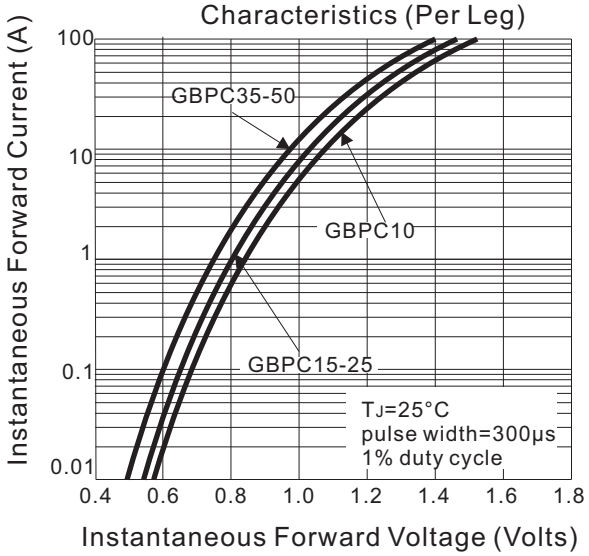
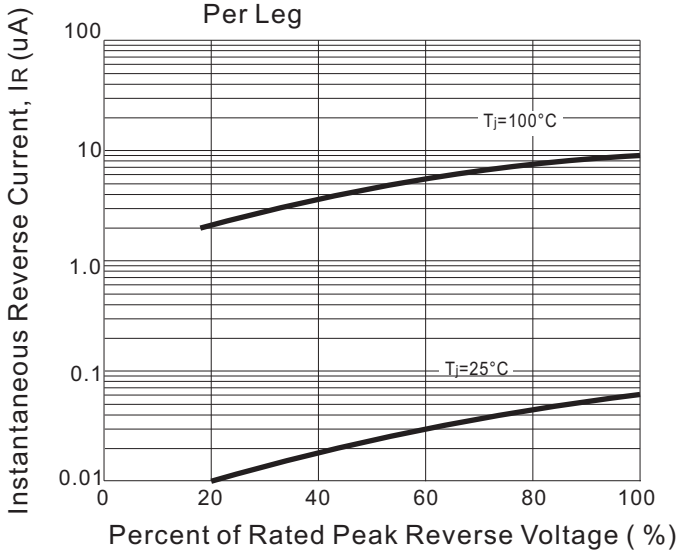


Fig. 4 - Typical Reverse Characteristics Per Leg



Marking

Type number	Marking code
GBPCXX00	GBPCXX00
GBPCXX01	GBPCXX01
GBPCXX02	GBPCXX02
GBPCXX04	GBPCXX04
GBPCXX06	GBPCXX06
GBPCXX08	GBPCXX08
GBPCXX10	GBPCXX10

XX=10,15, 25, 35, 40, or 50

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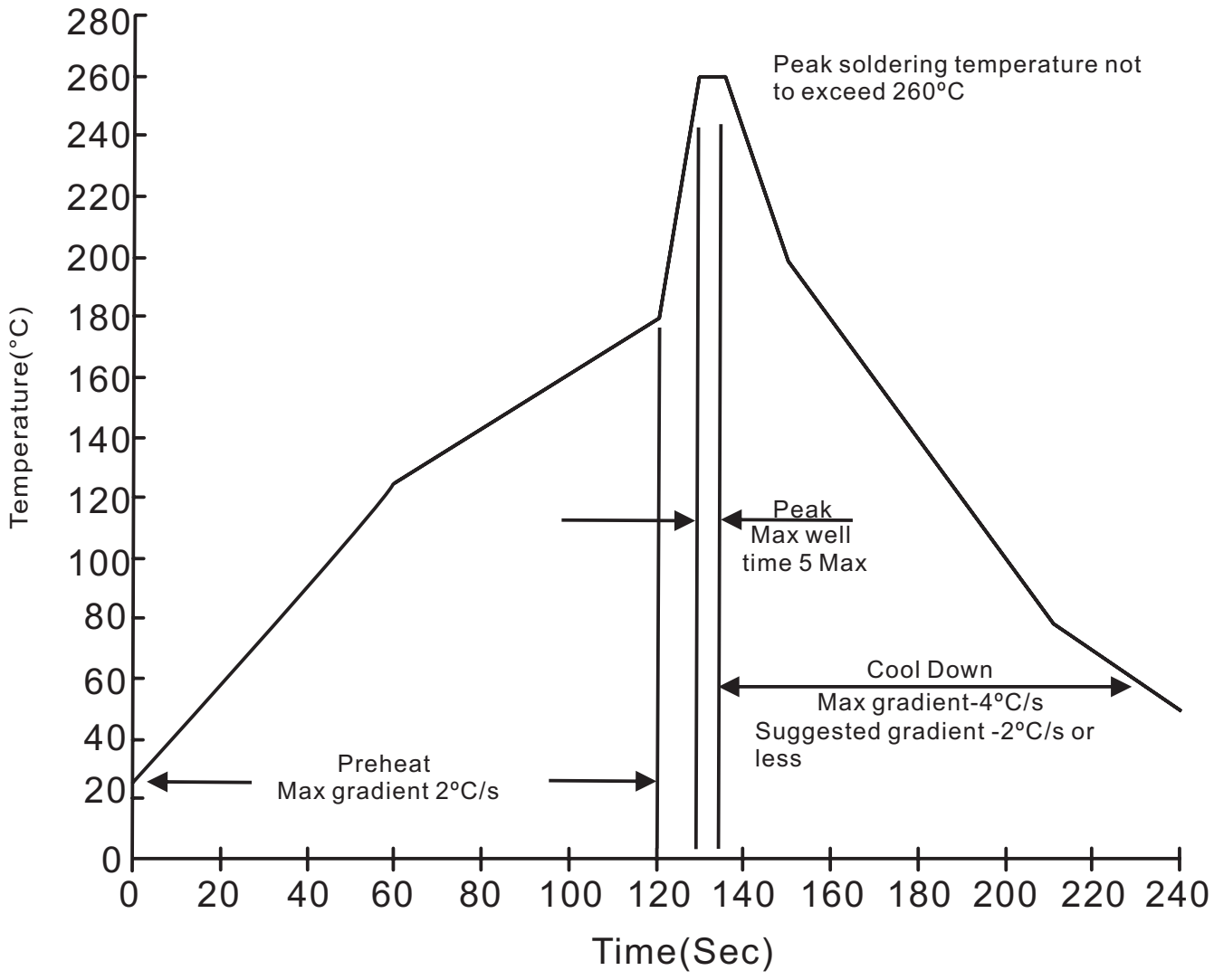
BULK PACKING

DEVICE CASE TYPE	Q'TY 1 (PCS / BOX)	INNER BOX SIZE (m/m)	CARTON SIZE (m/m)	Q'TY 2 (PCS / CARTON)	APPROX. CROSS WEIGHT(kg)
GBPC-T	50	203 * 203 * 44	445 * 215 * 260	500	8.0
GBPC-W	50	203 * 203 * 44	445 * 215 * 260	500	9.0
KBPC-S	120	203 * 203 * 44	445 * 215 * 260	1,200	22.0

Suggested thermal profiles for soldering processes

1.Lead free temperature profile wave-soldering



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High reliability test capabilities

Item Test	Conditions	Reference
1. Solder Resistance	at 260±5°C for 10±2sec. immerse body into solder 1/16"±1/32"	MIL-STD-750D METHOD-2031
2. Solderability	at 245±5°C for 5 sec.	MIL-STD-202F METHOD-208
3. High Temperature Reverse Bias	V_R=80% rate at T_J=125°C for 168 hrs.	MIL-STD-750D METHOD-1038
4. Forward Operation Life	Rated average rectifier current at T_A=25°C for 500hrs.	MIL-STD-750D METHOD-1027
5. Intermittent Operation Life	T_A = 25°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°C for 4 hrs.	JESD22-A102
7. Temperature Cycling	-55°C to +125°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°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