



GBP4005 THRU GBP410

VOLTAGE RANGE 50 to 1000 Volts  
CURRENT 4.0 Ampere

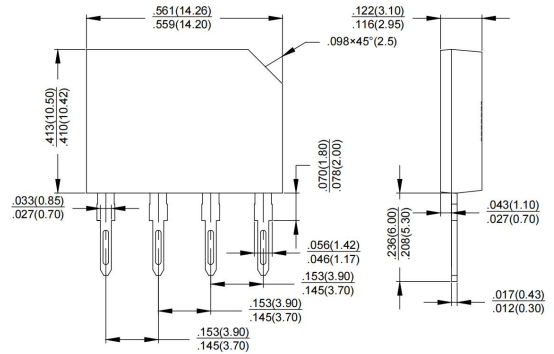
Features

- Glass passivated chip junction
- Ideal for surface mounted applications
- Low leakage
- High forward surge current capability
- High temperature soldering guaranteed: 260°C/10 seconds at terminals

Mechanical Data

- Case: Molded plastic body
- Epoxy: UL94V-0 rate flame retardant
- Polarity: Molded on body
- LeadP: Plated terminals solderable per MIL-STD-202E method 208C
- Weight: 0.039 ounce, 1.1gram

GBP



Dimensions in inches and(milimeters)

Maximum Ratings and Electrical Characteristics

- Ratings at 25°C ambient temperature unless otherwise specified
- Single Phase, half wave, 60Hz, resistive or inductive load
- For capacitive load derate current by 20%

TYPE NUMBER	SYMBOL	GBP 4005	GBP 401	GBP 402	GBP 404	GBP 406	GBP 408	GBP 410	UNIT
Maximum Reverse Peak Repetitive 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, 0.06" (1.5mm) lead length at $T_C=100^\circ C$	$I_{(AV)}$	4.0							Amps
Peak Forward Surge Current 8.3ms single half sine wave superimposed on rated load (JEDEC Method)	$I_{FSM}$	125							Amps
Rating for Fusing ( $t < 8.3ms$ )	$I^2t$	112							A <sup>2</sup> s
Maximum Instantaneous Forward Voltage drop Per Bridge element 4.0A	$V_F$	1.1							Volts
Maximum Reverse Current at rated DC blocking voltage per element	TA=25°C	5							µAmps
	TA=125°C	50							
Typical Thermal Resistance (NOTE 2)	$R_{\theta JC}$	5							°C/W
	$R_{\theta JL}$	4							°C/W
	$R_{\theta JA}$	39							°C/W
Operating and Storage Temperature Range	$T_J, T_{STG}$	(-55 to +150)							°C

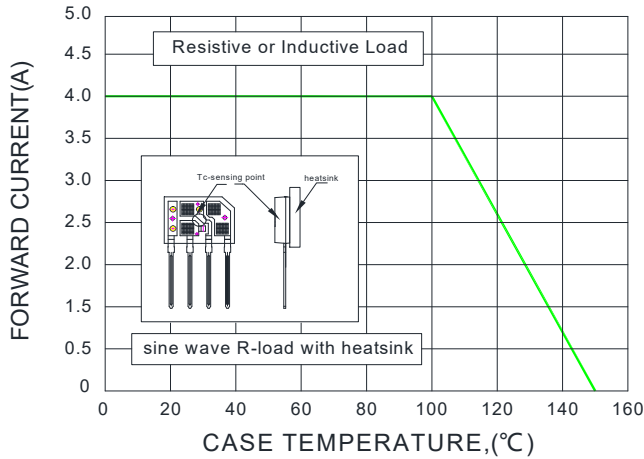
Notes:

1. Measured at 1.0MHz and applied reverse voltage of 4.0 Volts.
2. Unit mounted on P.C.B. with 0.033"x0.043"(1.00mm×1.30mm) copper pads.

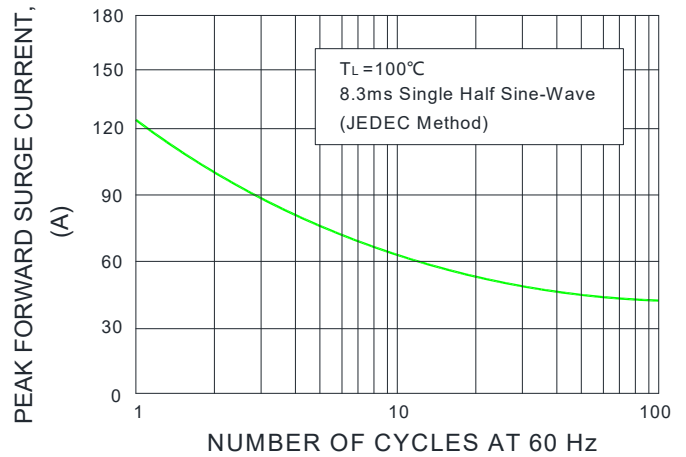


Ratings and Characteristic Curves ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

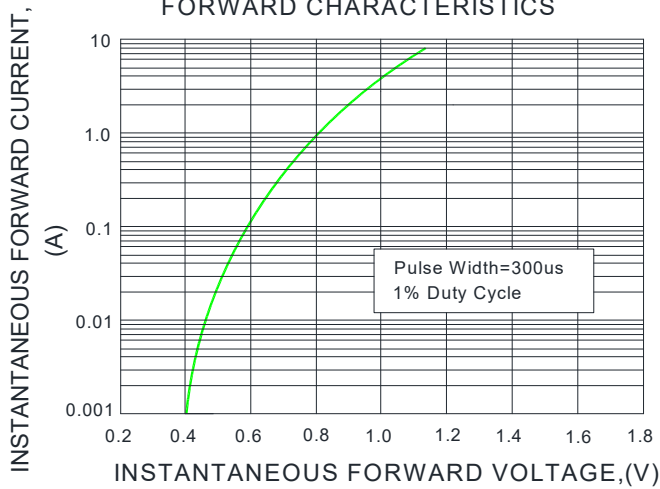
F1G.1-FORWARD CURRENT DERATING CURVE



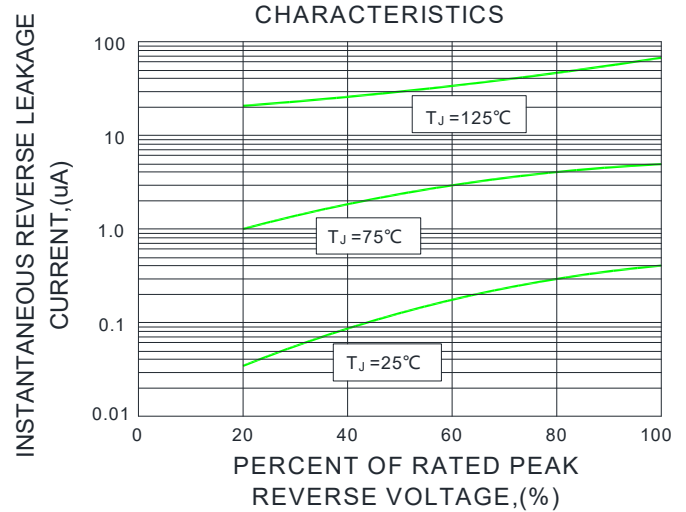
F1G.2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT



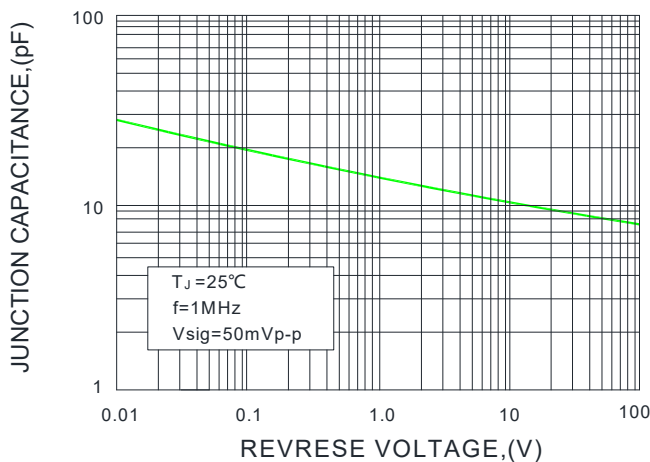
F1G.3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS



F1G.4-TYPICAL REVERSE CHARACTERISTICS

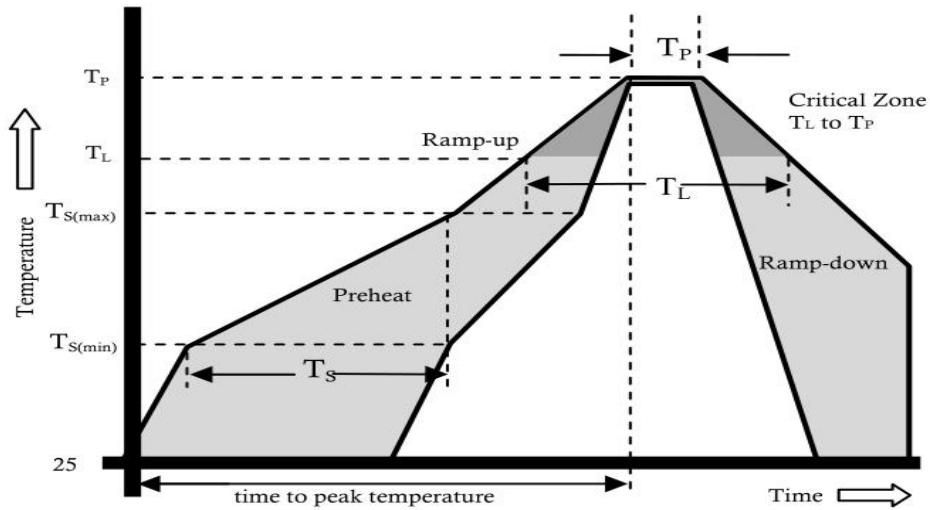


F1G.5-TYPICAL JUNCTION CAPACITANCE





Reflow Profile



Reflow Condition		Pb-Free Assembly
Pre Heat	Temperature Min.	+150°C
	Temperature Max.	+200°C
	Time(Min to Max)	60-180 secs.
Average ramp up rate(Liquidus Temp(T <sub>L</sub> ) to peak)		3°C/sec. Max.
T <sub>S</sub> (max) to T <sub>L</sub> - Ramp-up Rate		3°C/sec. Max.
Reflow	Temperature (T <sub>L</sub> )(Liquidus)	+217°C
	Temperature (T <sub>L</sub> )	60-150 secs.
Peak Temp (T <sub>P</sub> )		+(260±0/-5)°C
Time within 5°C of actual Peak Temp (T <sub>P</sub> )		25 secs.
Ramp-down Rate		6°C/sec. Max.
Time 25°C to peak Temp (T <sub>P</sub> )		8 min. Max.
Do not exceed		+260°C

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