

DESCRIPTION and APPLICATIONS

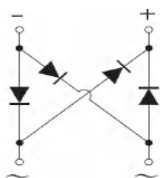
General purpose use in AC-to-DC bridge full wave rectification for Fast Charging, Switching Power Supply, USB PD, Adapter and 3-in-1 DTV Power Board, etc.

FEATURES

- Surface mount bridge, small package;
- Ideal for printed circuit boards;
- Glass passivated chip junction;
- High forward current capability up to 5.0A;
- High surge current capability;
- High heat dissipation capability;
- Low profile package;
- Low forward voltage drop;
- Plastic package has Underwrites Laboratory Flammability Classification 94V-0;

MECHANICAL DATA

- Case: HBS;
- Epoxy meets UL-94V-0 Flammability rating;
- Terminals: Matte tin plated leads, solderable per J-STD-002 and JESD22-B102;
- High temperature soldering guaranteed:
Solder Reflow 260°C, 10seconds;
- Polarity: As marked on body;
- Marking: Type number;



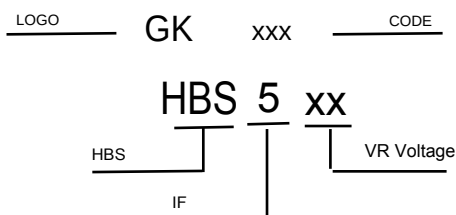
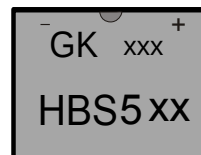
Internal Schematic

VOLTAGE RANGE

200 to 1000 Volts

CURRENT

5.0 Ampere



MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Rating 25°C ambient temperature unless otherwise specified.
Single phase half wave, 60Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

Parameter	Symbols	HBS502	HBS504	HBS506	HBS508	HBS510	Units
Maximum Repetitive Peak Reverse Voltage	V_{RRM}	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	140	280	420	560	700	V
Maximum DC Blocking Voltage	V_{DC}	200	400	600	800	1000	V
Average Rectified Output Current	I_O	5.0					A
Peak Forward Surge Current 8.3 ms Single Half Sine Wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	150					A
I^2t Rating for Fusing	I^2t	93					A ² S
Maximum Forward Voltage at 1.0 A	V_F	0.83 (typ.)					V
Maximum Forward Voltage at 5.0 A	V_F	1.0					V
Maximum DC Reverse Current at Rated DC Blocking Voltage @ $T_A=25^\circ\text{C}$ @ $T_A=125^\circ\text{C}$	I_R	5 100					μA
Typical Junction Capacitance (Note1)	C_j	38					pF
Typical Thermal Resistance (Note2)	$R_{\theta JA}$ $R_{\theta JC}$ $R_{\theta JL}$	69 12 12					$^\circ\text{C/W}$
Operating and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150					$^\circ\text{C}$

Note: 1. Measured at 1MHz and applied reverse voltage of 4 V D.C.

2. Mounted on glass epoxy PC board with 4×1.5"×1.5" (3.81×3.81 cm) copper pad.

RATING AND CHARACTERISTIC CURVES

FIG.1-TYPICAL FORWARD CURRENT DERATING CURVE

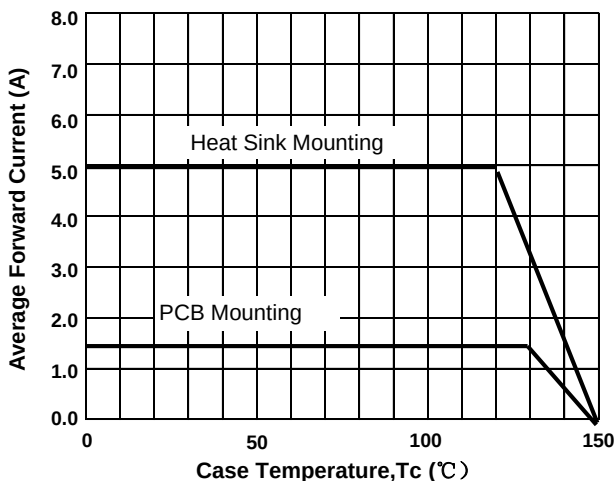


FIG.2-TYPICAL FORWARD CHARACTERISTICS PER DIODE

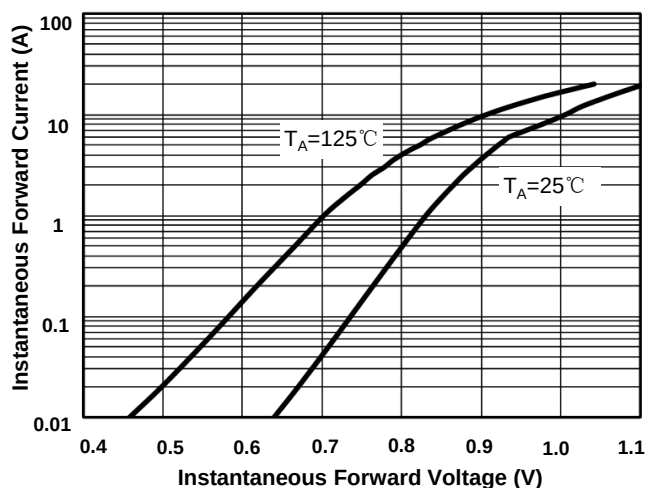


FIG.3 - TYPICAL REVERSE CHARACTERISTICS

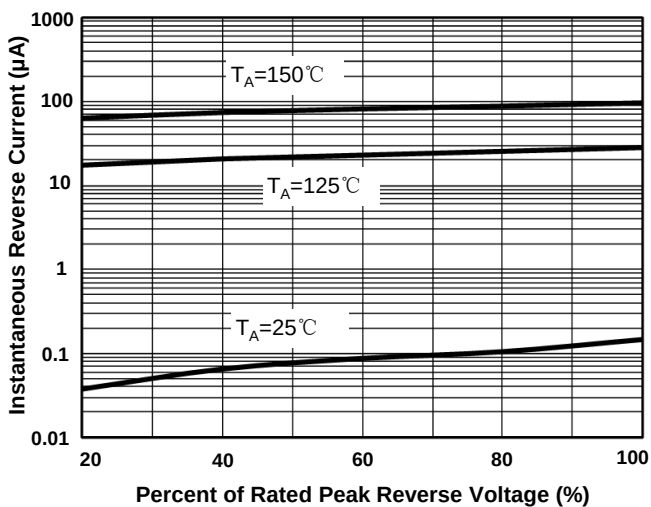


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT PER DIODE

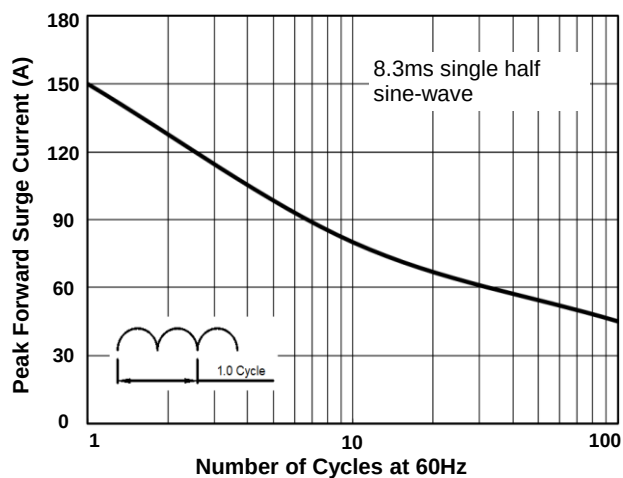
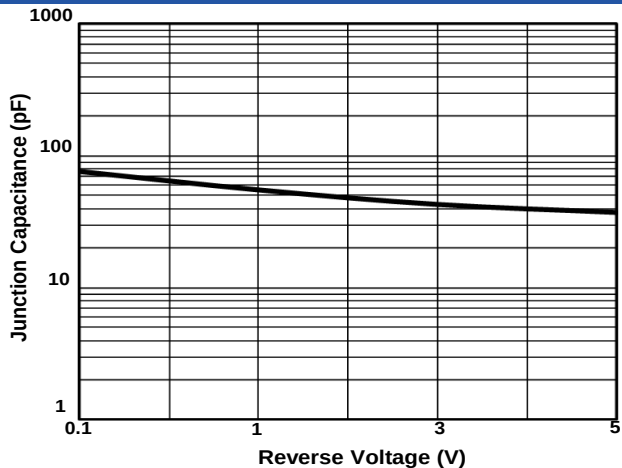
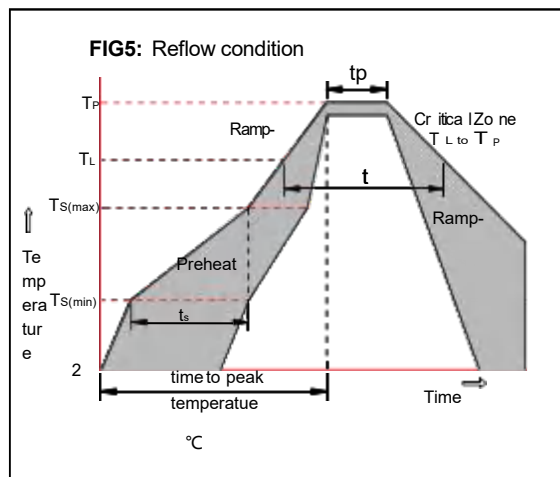


FIG.5 Typical Junction Capacitance per Diode



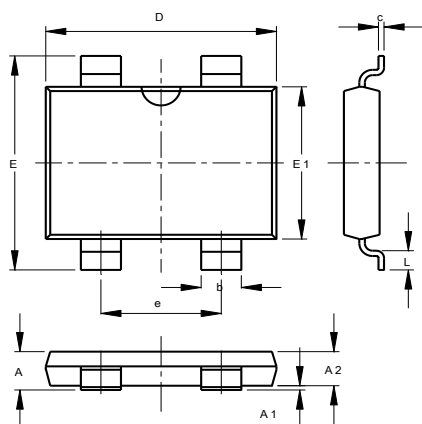
Soldering parameters

Reflow Condition		Pb-Free assembly (see as bellow)
Pre Heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (ts)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_P)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_P)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
Time 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C

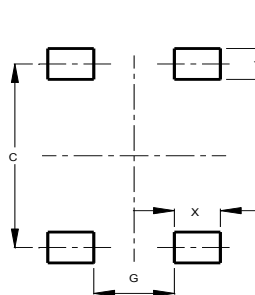


Package Dimensions & Suggested Pad Layout

HBS

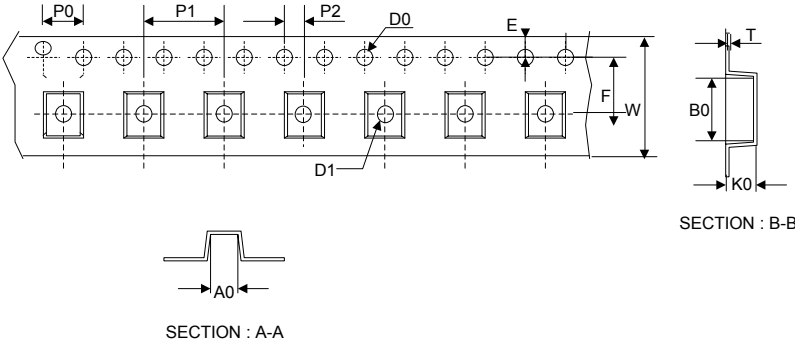
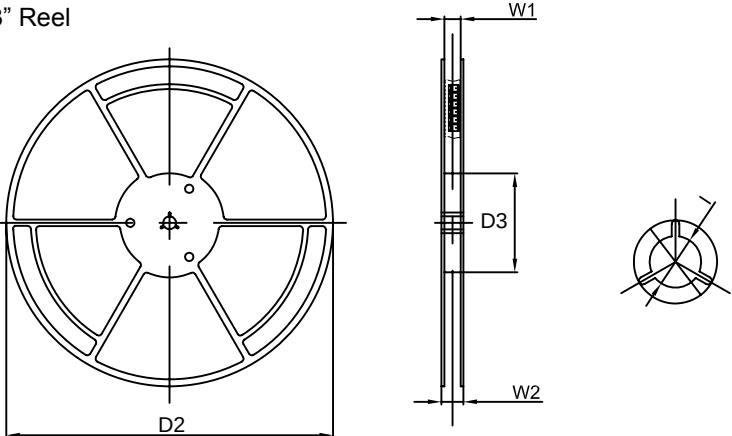


HBS			
Dim	Min	Max	Typ
A	1.45	1.80	--
A1	0.00	0.20	--
A2	1.45	1.65	--
b	1.70	1.90	--
c	0.15	0.35	--
D	10.05	10.35	--
E	9.75	10.05	--
E1	6.85	7.15	--
e	5.25	5.60	--
L	0.45	0.95	--
All Dimensions in mm			



Dimensions	Value (in mm)
C	8.92
G	3.50
X	2.00
Y	1.50

Tape & reel specification

Tape		Symbol	Dimension (mm)
		P0	4.00±0.20
		P1	12.00±0.20
		P2	2.00±0.20
		D0	1.55±0.15
		D1	1.55±0.20
		E	1.75±0.20
		F	11.50±0.20
		W	24.00±0.20
		A0	11.40±0.20
		B0	11.20±0.20
		K0	2.20±0.20
		T	0.30±0.10
		D2	330.0±5.0
		D3	100.0±4.0
		W1	24.0±5.0
13" Reel		W2	27.0±5.0
		I	13.0±2.0
		Quantity: 2500PCS	