HBS10M

BRIDGE RECTIFIERS

HF halogen-free Pb Pb-Free RoHS COMPLIANT

VOLTAGE:	1000 Volts	CURRENT:	10 Ampers	Package:	HBS	Marking And Polarity

FEATURES

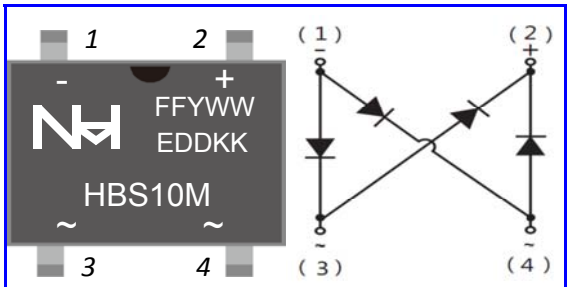
- Glass Passivated Chip Junction
- Super Fast Recovery Time For High Efficiency
- Low Leakage Current For High Reliability
- High Forward Surge Capability For High Reliability

MECHANICAL DATA

- **Package:** Molding Compound Meets UL 94 V-0 Flammability Rating, RoHS-Compliant
- **Polarity:** As Marked On Case
- **Mounting Position:** Any
- **Weight:App. 0.374 Grams（0.01319 Ounce)**

TYPICAL APPLICATIONS

- General Purpose Use In AC/DC BridgeFull Waverectification For PD,Adapter, Power Supply, Monitor,LED Driver,Printer,Audio Equipment, TV And Homeappliances Etc. Applications.



Remark:

①. NH=Niuhang Trademark

②. FF=Product Line Code,According To Actual Changes
YWW=Date Code,According To Actual Changes
EDDKK=Inernal Code,According To Actual Changes

③. HBS10M=Model

④. -~~+=Polarity Mark

Single phase,half wave,60Hz,resistive or inductive load.For capacitive load,derate current by 20%

Maximum Ratings (Ta=25℃ Unless Otherwise Specified)

Parameter	Test Conditions	Symbol	HBS10M	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	1000	V
Maximum RMS Voltag		V_{RMS}	700	V
Maximum DC Blocking Voltage		V_{DC}	1000	V
Maximum Average Forward Rectified Current	@TC= 100 °C	$I_{F(AV)}$	10	A
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	180	A
Current Squared Time Per Diode	t<8.3ms	I^2t	134.5	A^2sec

Electrical Characteristcs (Ta=25℃ Unless Otherwise Specified)

Parameter	Test Conditions		Symbol	HBS10M			Unit
				Min.	Typ.	Max.	
Instaneous Forward Voltage Per Diode (note1)	Ta=25℃ Ta=125℃	I_F= 5.0 A	V_F	-- --	0.92 0.84	0.98 0.90	V
Maximum DC Reverse Current At Rated DC Blocking Voltage (Note 1)	Ta=25℃ Ta=125℃	V_R= V_{RRM} V_R= 80%*V_{RRM}	I_{RRM}	-- --	1.00 50.00	5.00 500.00	uA
Typical Junction Capacitance Per Diode	4.0 V,1MHz		C_J	--	60.00	--	pF

Thermal Characteristcs (Ta=25℃ Unless Otherwise Specified)

Parameter	Symbol	HBS10M	Unit
Operating Junction Temperature Range	T_J	-55 to 150	℃
Storage Temperature Range	T_{STD}	-55 to 150	℃
Typical Thermal Resistance (Note 2)	$R_{\theta JA}$ $R_{\theta JC}$	60.0 8.0	℃/W

Notes: 1.Pulse Test: 300 Us Pulse Width,1% Duty Cycle

2.Device Mounted On Device Mounted On 75mm x 45mm x 5.5mm Aluminum Plate Heatsink.

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Typical Characteristics Curves

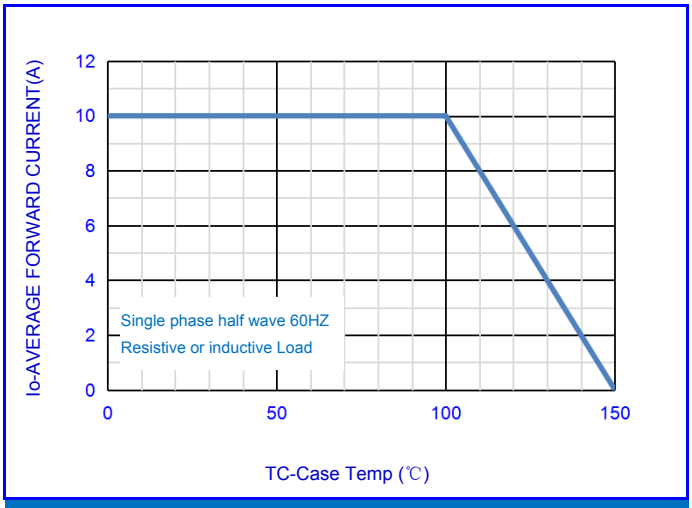

Fig.1-FORWARD CURRENT DERATING CURVE

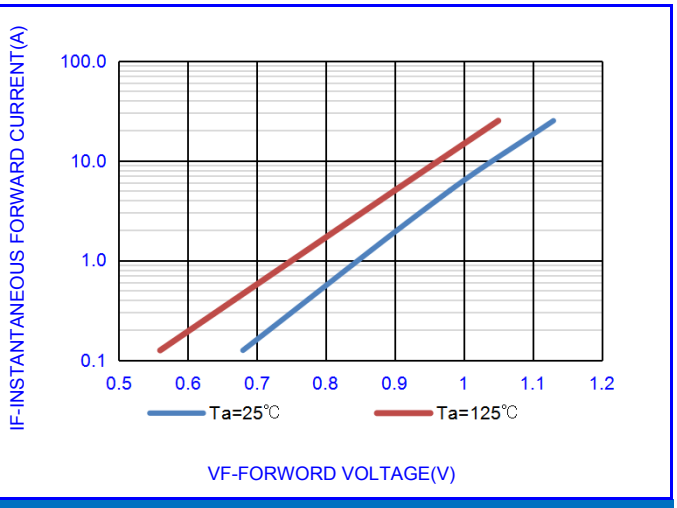

Fig.2- TYPICAL INSTANTANEOUS FORWARD

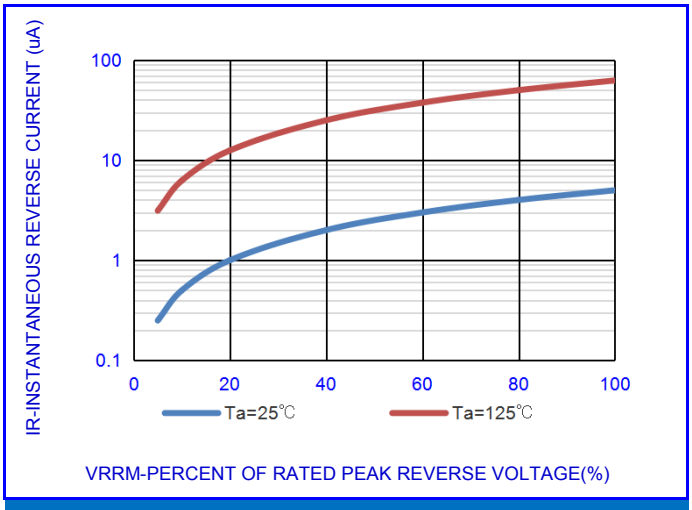

Fig.3- TYPICAL REVERSE CHARACTERISTICS

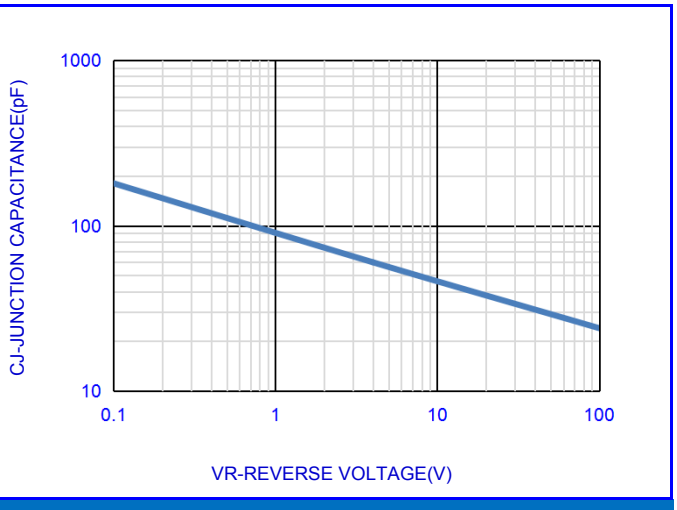

Fig.4- TYPICAL JUNCTION CAPACITANCE

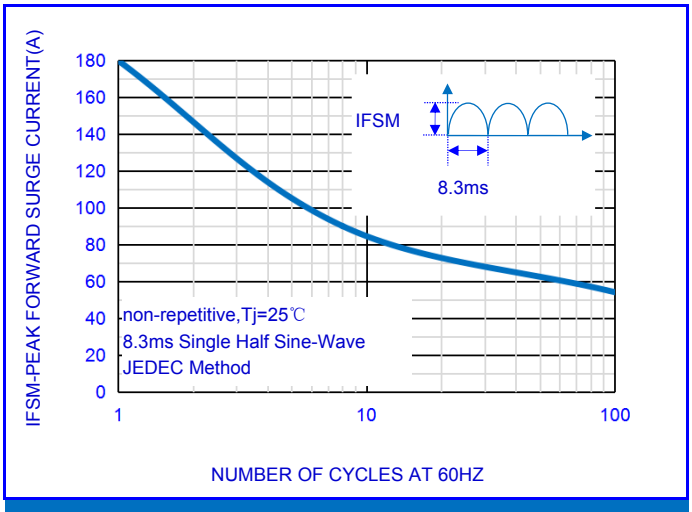

Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

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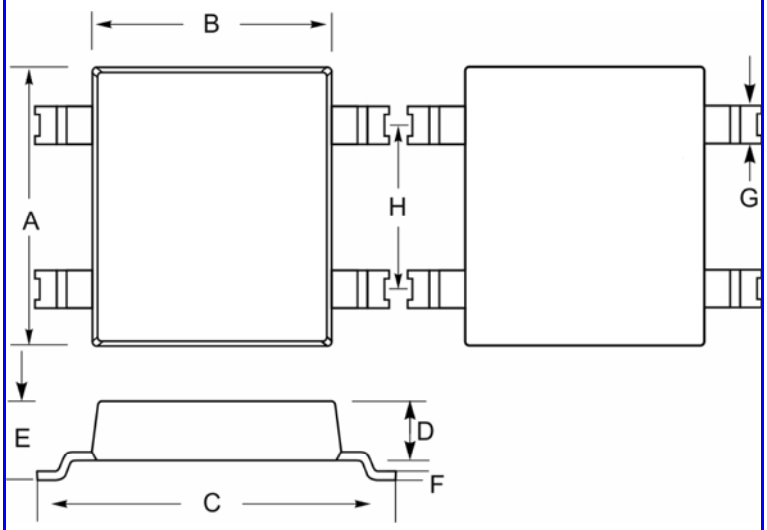
OUTLINE DRAWINGS



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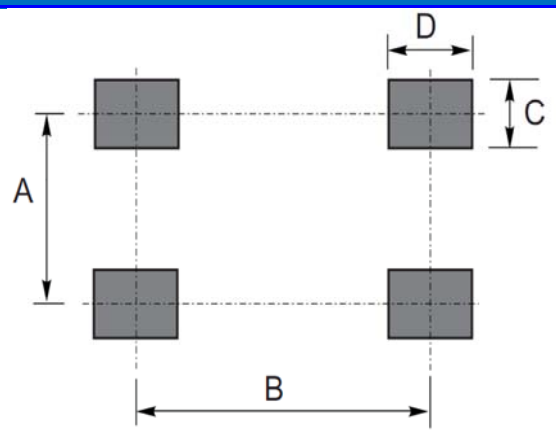
OUTLINE DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	9.550	-	11.050	0.376	-	0.435
B	6.900	-	7.900	0.272	-	0.311
C	9.350	-	10.650	0.368	-	0.419
D	1.400	-	1.900	0.055	-	0.075
E	1.400	-	2.000	0.055	-	0.079
F	0.150	-	0.350	0.006	-	0.014
G	1.600	-	2.000	0.063		0.079
H	4.500	-	5.500	0.177	-	0.217

RECOMMEDNED LAYOUT DRAWINGS



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RECOMMENDED LAYOUT DIMENSIONS						
Dim.	Milimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	8.920	-	-	0.351	-
B	-	4.500	-	-	0.177	-
C	-	1.500	-	-	0.059	-
D	-	2.000	-	-	0.079	-

PACKING INFORMATION

Package Code	Package Method	Inner Box Size L×W×H(mm)	Quantity (Pcs/Inner Box)	Outer Carton Size L×W×H(mm)	Quantity (Pcs/Carton)
HBS	Tape Reel	340X340X40	10000	360X360X260	60000

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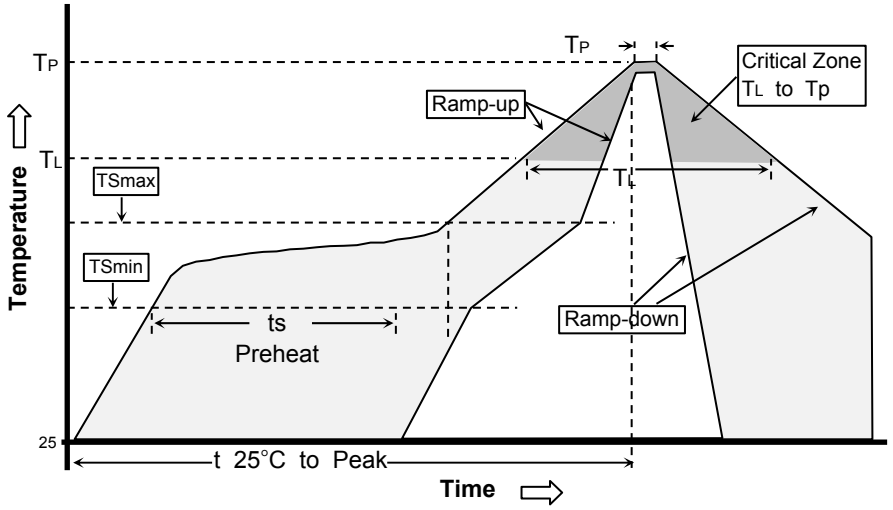
Recommended wave soldering condition

Product	Peak Temperature	Soldering Time
Pb-free devices	260 +0/-5 °C	5 +1/-1 seconds

Recommended temperature profile for IR reflow



Profile feature	Sn-Pb eutectic Assembly	Pb-free Assembly
Average ramp-up rate (Tsmax to Tp)	3°C/second max.	3°C/second max.
Preheat −Temperature Min(TS min) −Temperature Max(TS max) −Time(ts min to ts max)	 100°C 150°C 60-120 seconds	 150°C 200°C 60-180 seconds
Time maintained above: −Temperature (TL) − Time (tL)	 183°C 60-150 seconds	 217°C 60-150 seconds
Peak Temperature(TP)	240 +0/-5 °C	260 +0/-5 °C
Time within 5°C of actual peak temperature(tp)	10-30 seconds	20-40 seconds
Ramp down rate	6°C/second max.	6°C/second max.
Time 25 °C to peak temperature	6 minutes max.	8 minutes max.

Note : All temperatures refer to topside of the package, measured on the package body surface.

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