

GS8A THRU GS8M

GENERAL PURPOSE RECTIFIERS



VOLTAGE: 50~1000 Volts

CURRENT: 8.0 Amperes

SMC(DO-214AB) Marking and Polarity

FEATURES

- Low cost
- Diffused junction
- Low reverse leakage current
- Low forward voltage drop
- High current capability
- The plastic material carries UL recognition 94V-0

MECHANICAL DATA

- **Case:** Molded Plastic
- **Epoxy:** UL 94V-0 rate flame retardant
- **Mounting position:** Any
- **Weight:** App.0.24 grams

TYPICAL APPLICATIONS

- For use in low voltage ,high frequency inverters ,DC/DC converters,LED driver, free wheeling ,and polarity protection applications



Remark:

- ①.NH=niuhang trademark;
- ②.FF=Production line,According to actual changes;
YWW=Data Code,According to actual changes;
- ③.GS8X=Module;
- ④.White edge=Polarity mark

Maximum Ratings and Electrical Characteristics(Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	GS8A	GS8B	GS8D	GS8G	GS8J	GS8K	GS8M	Unit
Maximum repetitive peak reverse voltage	V_{RRM}	50	100	200	400	600	800	1000	V
Maximum RMS voltage	V_{RMS}	35	70	140	280	420	560	700	V
Maximum DC blocking voltage	V_{DC}	50	100	200	400	600	800	1000	V
Maximum average forward rectified current(see fig.1)	$I_{F(AV)}$	8							A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	I_{FSM}	200							A
Maximum instantaneous forward voltage at 8.0 A (Note 1)	V_F	1.1							V
Maximum instantaneous reversecurrent at rated DC blockingvoltage (Note 2)	I_{RRM}	$T_A=25^{\circ}C$	VR= V_{RRM}					10	uA
		$T_A=125^{\circ}C$	VR= 80%* V_{RRM}					200	
Typical junction capacitance (Note 3)	C_J	65							pF
Operating junction and Storage temperature range	T_J	-65 to +150							°C
Storage temperature range	T_{STG}	-65 to +150							

Thermal Characteristics (Ratings at 25°C ambient temperature unless otherwise specified)

Parameter	Symbol	GS8A THRU GS8M	Unit
Typical thermal resistance (Note 4)	$R_{\theta JA}$	47	°C/W
	$R_{\theta JL}$	13	

- Note:
- 1.Pulse test: 300 μs pulse width,1% duty cycle
 - 2.Pulse test: pulse width≤40ms
 - 3.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
 - 4.Thermal resistance from junction to lead vertical P.C.B. mounted , 0.375"(9.5mm)lead length

GS8A THRU GS8M

GENERAL PURPOSE RECTIFIERS



RATING AND CHARACTERISTIC CURVES

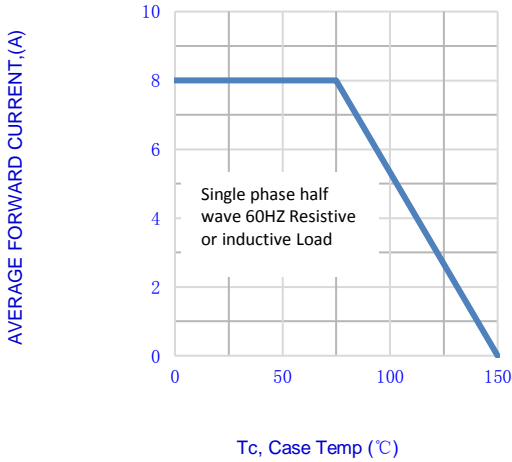


Fig.1-FORWARD CURRENT DERATING CURVE

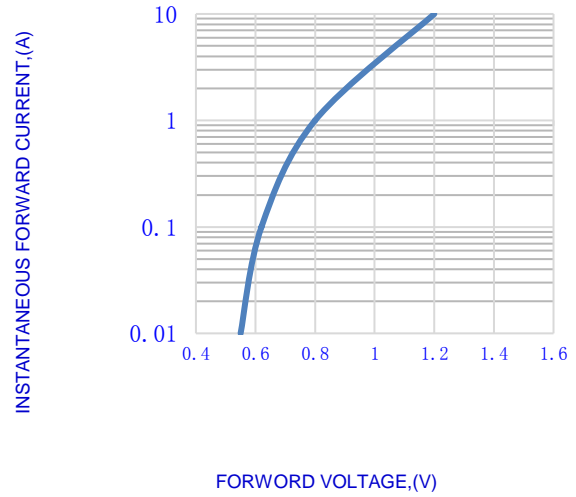


Fig.2- TYPICAL INSTANTANEOUS FORWARD

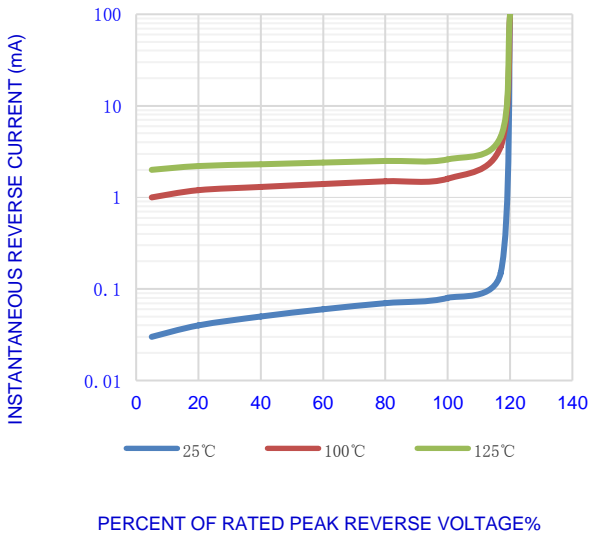


Fig.3- TYPICAL REVERSE CHARACTERISTICS

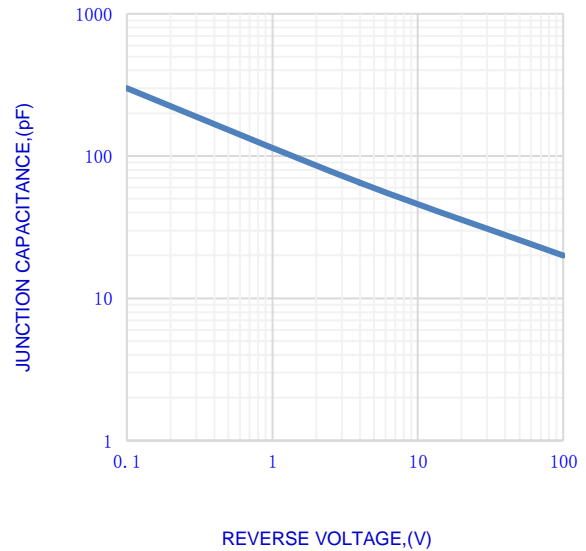


Fig.4- TYPICAL JUNCTION CAPACITANCE

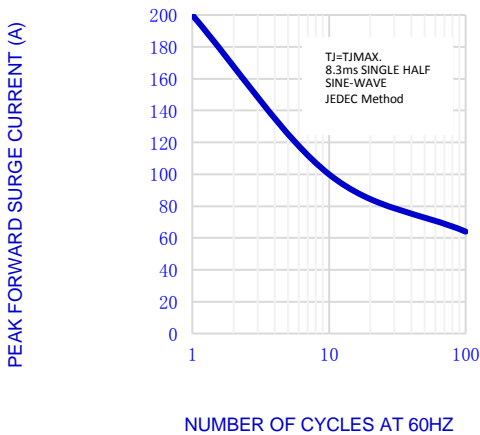
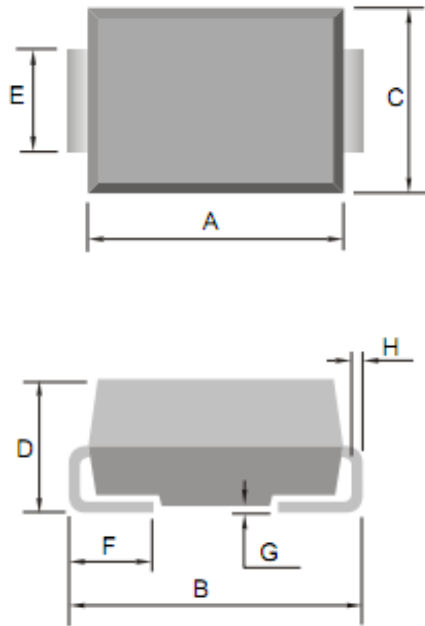


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

GS8A THRU GS8M
GENERAL PURPOSE RECTIFIERS



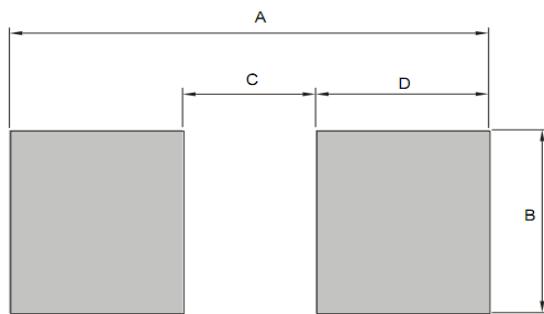
OUTLINE DRAWINGS



SMC(DO-214AB)

OUTLINE DIMENSIONS						
DIM	MILLIMETERS			INCHES		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	6.600	-	7.110	0.260	-	0.280
B	7.750	-	8.130	0.305	-	0.320
C	5.590	-	6.220	0.220	-	0.245
D	2.000	-	2.620	0.079	-	0.103
E	2.750	-	3.250	0.108	-	0.128
F	0.760	-	1.520	0.030	-	0.060
G	0.051	-	0.203	0.002	-	0.008
H	0.152	-	0.305	0.006	-	0.012

RECOMMENDED LAYOUT DRAWINGS



SMC(DO-214AB)

RECOMMENDED MOUNTING PAD DIMENSIONS						
Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	9.900	-	-	0.390	-
B	-	3.820	-	-	0.150	-
C	-	3.840	-	-	0.151	-
D	-	3.030	-	-	0.119	-

000008

PACKING INFORMATION

SMC(DO-214AB)

Package Method	Reel Size (mm)	Quantity (pcs/reel)	Inner Box Size LxWxH(mm)	Quantity (pcs/Inner Box)	Carton Size LxWxH(mm)	Quantity (pcs/carton)
Tape Reel	Φ330	3000	340x340x45	6000	360x360x470	60000

GS8A THRU GS8M

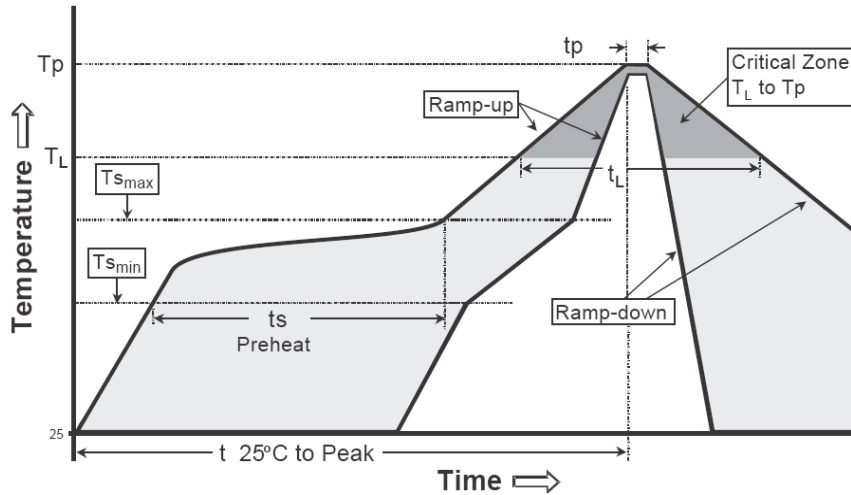
GENERAL PURPOSE RECTIFIERS



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 (T _{smax} to T _p)	3°C/second max.	3°C/second max.
Preheat -Temperature Min(T _{smin}) -Temperature Max(T _{smax}) -Time(ts min to ts max)	100°C 150°C 60-120 seconds	150°C 200°C 60-180 seconds
Time maintained above: -Temperature (T _L) - Time (t _L)	183°C 60-150 seconds	217°C 60-150 seconds
Peak Temperature(T _p)	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.

GS8A THRU GS8M
GENERAL PURPOSE RECTIFIERS



Disclaimer

- Reproducing and modifying information of the document is prohibited without permission from niuhang Electronics co., LTD
- Niuhan Electronics co., LTD. reserves the rights to make changes of the content herein the document anytime without notification.
- Niuhan Electronics co., LTD. disclaims any and all liability arising out of the application or use of any product including damages incidentally and consequentially occurred.
- Niuhan Electronics co., LTD. does not assume any and all implied warranties, including warranties of fitness for particular purpose, non-infringement and merchantability.
- Applications shown on the herein document are examples of standard use and operation. Customers are responsible in comprehending the suitable use in particular applications. Niuhan Electronics co., LTD. makes no representation or warranty that such applications will be suitable for the specified use without further testing or modification.
- The products shown herein are not designed and authorized for equipments requiring high level of reliability or relating to human life and for any applications concerning life-saving or life-sustaining, such as medical instruments, transportation equipment, aerospace machinery et cetera. Customers using or selling these products for use in such applications do so at their own risk and agree to fully indemnify Niuhan Electronics co., LTD. for any damages resulting from such improper use or sale.
- When the appearance of the product and chip size does not change, in order to product the customer quality, change the internal structure and the production process Niuhan can not notify