

BAT46W

SCHOTTKY RECTIFIERS



VOLTAGE: 100 Volts

CURRENT: 250 mA

Package: SOD-123

Marking And Polarity

FEATURES

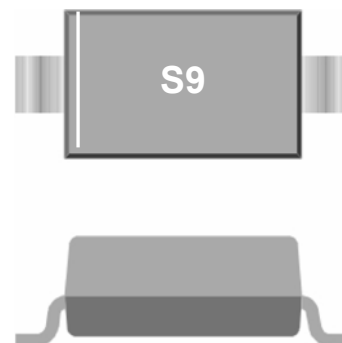
- Plane Schottky Potential Barrier Chip
- Low Forward Voltage Drop For High Efficiency
- Low Leakage Current For High Reliability
- High Forward Surge Capability For High Reliability
- High Frequency Operation

MECHANICAL DATA

- Package:** Molding Compound Meets UL 94 V-0 Flammability Rating, RoHS-Compliant
- Polarity:** As Marked On Case
- Mounting Position:** Any
- Weight:** App. 0.01 Grams (0.00035 Ounce)

TYPICAL APPLICATIONS

- For Use In High Frequency Inverters, Switching Mode Power Supply
AC/DC Converters, LED Driver Etc. Applications



Remark:

- Mark=S9
- White band denotes cathode

Single Phase, Half Wave, 60Hz, Resistive Or Inductive Load. For Capacitive Load, Derate Current By 20%

Maximum Ratings (Ta=25°C Unless otherwise specified)

Parameter	Test Conditions	Symbol	BAT46W	Unit
Maximum Repetitive Peak Reverse Voltage		V_{RRM}	100	V
Maximum RMS Voltage		V_{RMS}	70	V
Maximum DC Blocking Voltage		V_{DC}	100	V
Maximum Average Forward Rectified Current	@TC= 100 °C	$I_{F(AV)}$	250	mA
Peak Forward Surge Current	8.3ms Single Half Sine-wave Superimposed On Rate Load	I_{FSM}	750	mA
Power dissipation		P_D	200	mW

Electrical Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Test Conditions	Symbol	Min.	--	Max.	Unit
Instantaneous forward voltage per diode (note1)	Ta=25°C	$I_F = 0.1 \text{ mA}$	--	--	0.25	V
		$I_F = 10 \text{ mA}$	--	--	0.45	
		$I_F = 250 \text{ mA}$	--	--	1.00	
Maximum DC Reverse Current at Rated DC Blocking Voltage (Note 1)	Ta=25°C	$V_R = 10 \text{ V}$	--	--	0.80	uA
		$V_R = 50 \text{ V}$	--	--	4.00	
		$V_R = 75 \text{ V}$	--	--	6.00	
Typical Junction Capacitance Per Diode	0.0 V, 1MHz	C_J	--	20	--	pF

Thermal Characteristics (Ta=25°C Unless otherwise specified)

Parameter	Symbol	BAT46W	Unit
Operating Junction Temperature Range	T_J	-55 to 125	°C
Storage Temperature Range	T_{STD}	-55 to 150	
Typical thermal resistance (Note 2)	$R_{\theta JA}$	200	°C/W

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

2. Mounted on P.C.B. with 0.2" x 0.2" (5.08 mm x 5.08 mm) copper pad areas

BAT46W

SCHOTTKY RECTIFIERS



Typical Characteristics Curves

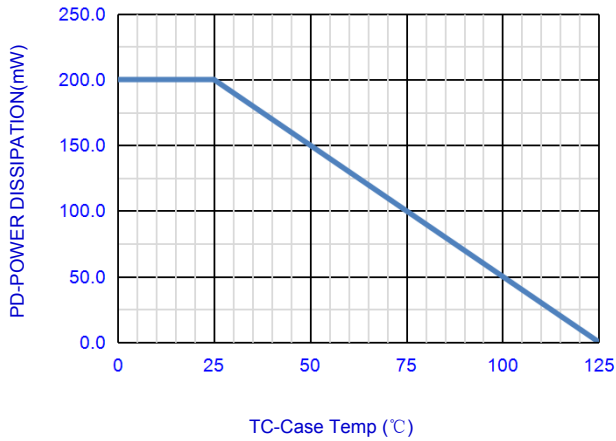


Fig.1-POWER DERATING CURVE

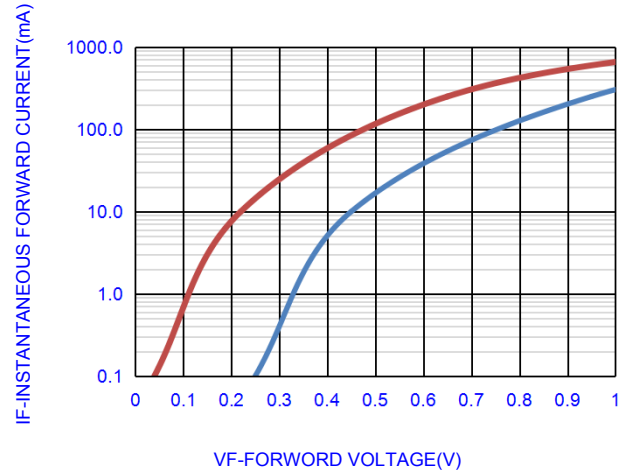


Fig.2- TYPICAL INSTANTANEOUS FORWARD

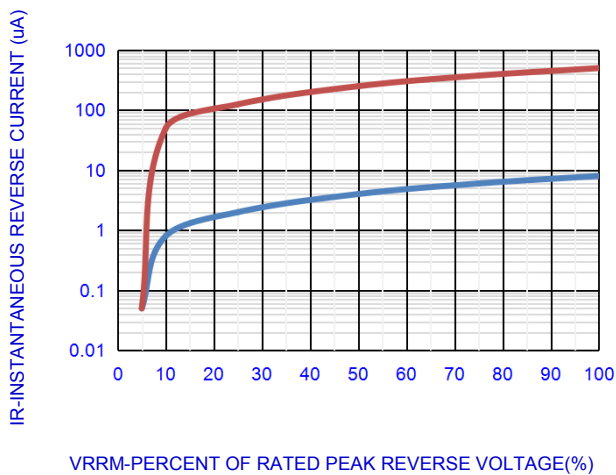


Fig.3- TYPICAL REVERSE CHARACTERISTICS

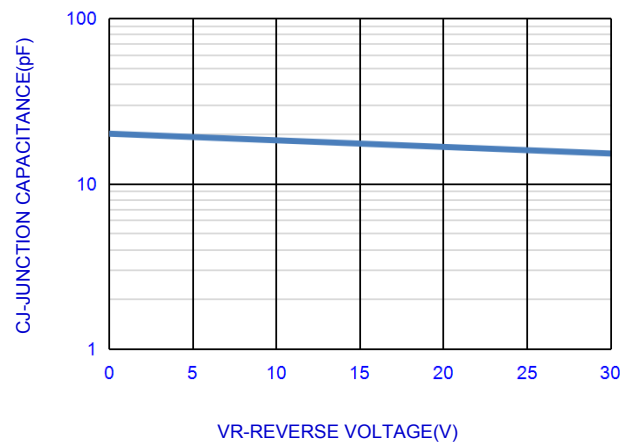


Fig.4- TYPICAL JUNCTION CAPACITANCE

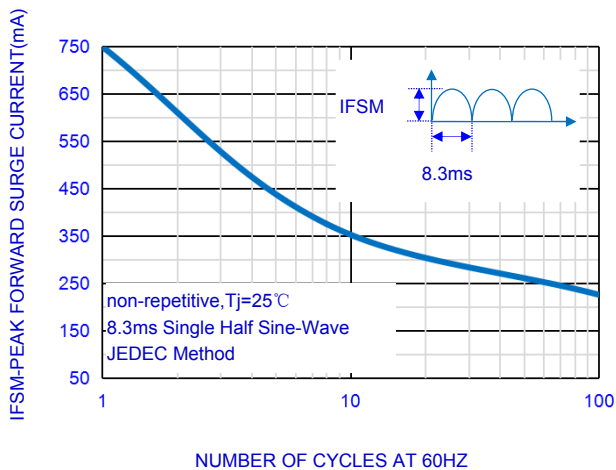


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

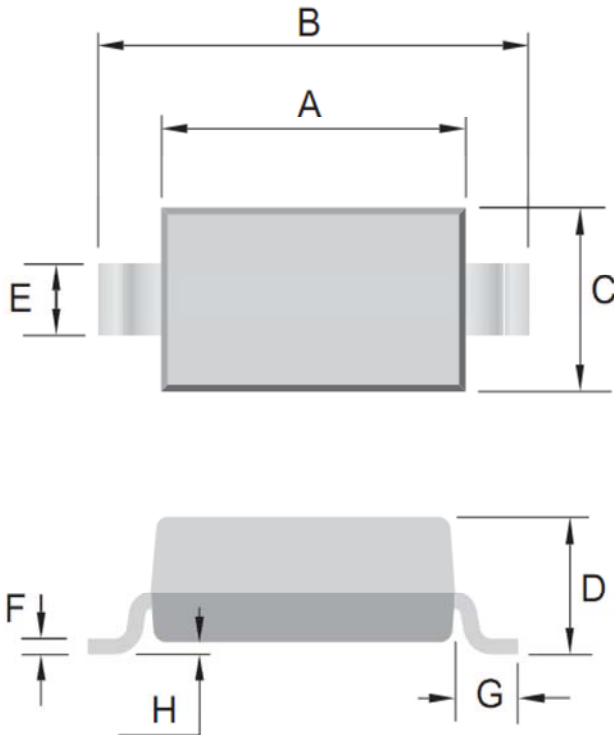
BAT46W

SCHOTTKY RECTIFIERS



OUTLINE DRAWINGS

SOD-123

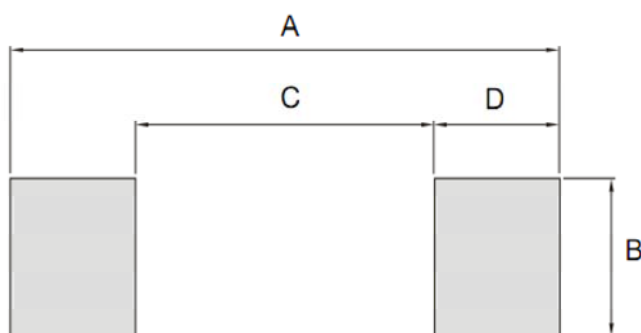


OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	2.500	-	2.800	0.098	-	0.110
B	3.550	-	3.900	0.140	-	0.154
C	1.400	-	1.800	0.055	-	0.071
D	0.950	-	1.350	0.037	-	0.053
E	0.450	-	0.700	0.018	-	0.028
F	-	-	0.200	-	-	0.008
G	0.400	-	-	0.016	-	-
H	-	-	0.120	-	-	0.005

OUTLINE DRAWINGS

SOD-123



OUTLINE DIMENSIONS

Dim.	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	-	4.040	-	-	0.159	-
B	-	1.000	-	-	0.039	-
C	-	2.440	-	-	0.096	-
D	-	0.800	-	-	0.031	-

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)
SOD-123	T/R	210×210×203	45000	455×455×240	180000

BAT46W

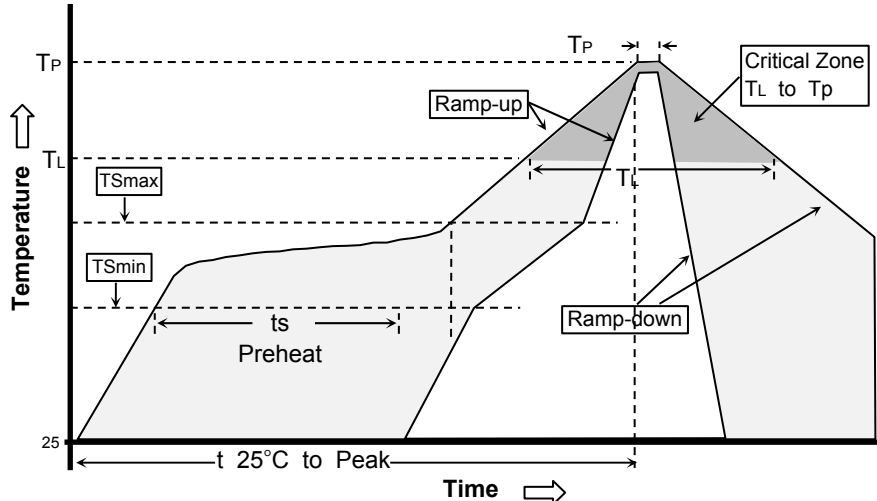
SCHOTTKY RECTIFIERS



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(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 (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.



BAT46W

SCHOTTKY 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