

**ES8JH**



**SUPER FAST RECOVERY RECTIFIERS**

**VOLTAGE:** 730 Volts      **CURRENT:** 8.0 Amperes

**SMC(DO-214AB)**      **Marking and Polarity**

**FEATURES**


- Glass passivated chip junction
- Super fast reverse recovery time
- Low Forward Voltage Drop for high efficiency
- Low leakage current for high reliability
- High forward surge capability for high reliability

**MECHANICAL DATA**

- **Terminals:** Plated Leads Solderable per MIL-STD-202, Method 208
- **Mounting Position:** Any
- **Lead Free:** Lead Free Finish, RoHS Compliant
- **Weight:** App. 0.254 grams (0.009 ounce)

**TYPICAL APPLICATIONS**

- For use in high frequency inverter, AC/DC converter, DC/DC converter, LED driver etc. applications



**Remark:**

- ①. NH=niuhang trademark
- ②. FF=Product line, According to actual changes;  
    YW=Periodic code, According to actual changes;
- ③. ES8JH=Model
- ④. White band denotes cathode

**Maximum Ratings (Ratings at 25°C ambient temperature unless otherwise specified.)**

Parameter	Symbol	ES8JH	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	730	V
Maximum RMS voltage	$V_{RMS}$	511	V
Maximum DC blocking voltage	$V_{DC}$	730	V
Maximum average forward rectified current (see fig.1)	$I_{F(AV)}$	5	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC method at rated TL)	$I_{FSM}$	180	A
Maximum instantaneous forward voltage at 5.0 A (Note 1)	$V_F$	1.7	V
Maximum instantaneous reverse current at rated DC blocking voltage (Note 2)	$I_{RRM}$	5 100	uA
Maximum Reverse Recovery Time (Note 3)	$T_{RR}$	35	nS
Typical junction capacitance (Note 4)	$C_J$	90	pF
Operating junction and Storage temperature range	$T_J$	-55 to +150	°C
Storage temperature range	$T_{STG}$	-55 to +150	

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

Parameter	Symbol	ES8JH	Unit
Typical thermal resistance (Note 5)	$R_{\theta JA}$	105	°C/W

- Note 1. Pulse test: 300 μs pulse width, 1% duty cycle
2. Pulse test: pulse width ≤ 40ms
3. Reverse Recovery Time test condition:  $I_F=0.5A$ ,  $I_R=1.0A$ ,  $I_{RR}=0.25A$
4. Measured at 1MHz and applied reverse voltage of 4.0V D.C.
5. Thermal resistance from junction to lead vertical P.C.B. mounted, 0.375"(9.5mm) lead length

ES8JH



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RATING AND CHARACTERISTIC CURVES

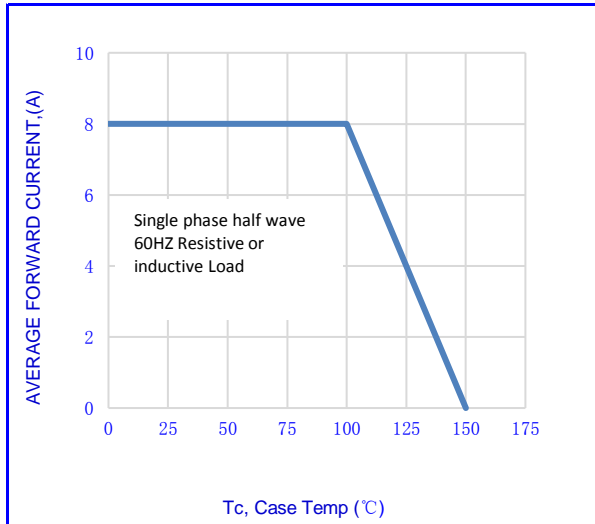


Fig.1-FORWARD CURRENT DERATING CURVE

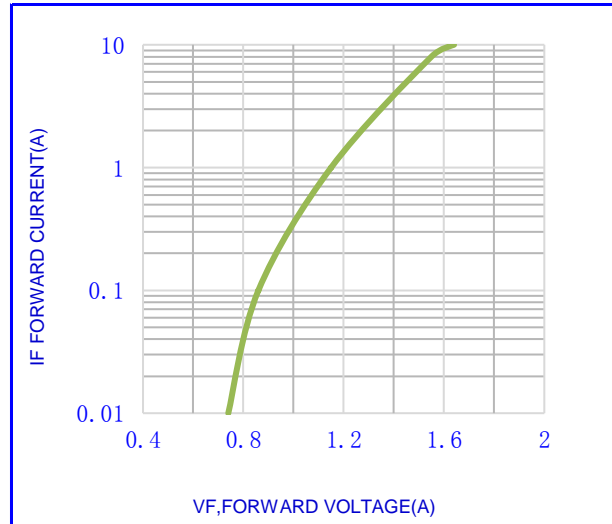


Fig.2-TYPEICAL FORWARD CHARACTERISTICS

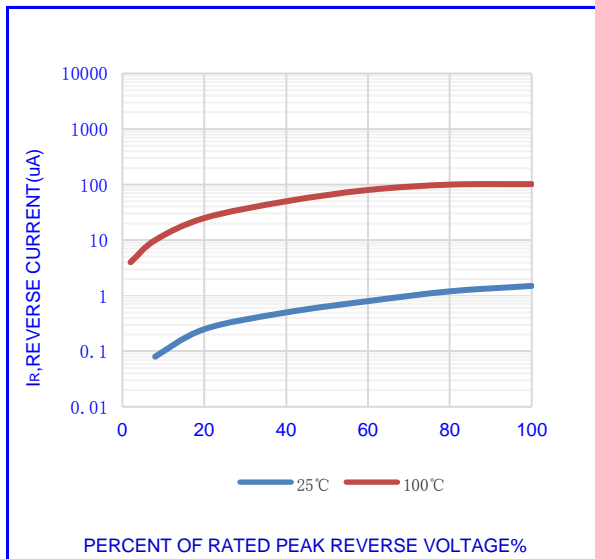


Fig.3- TYPICAL REVERSE CHARACTERISTICS

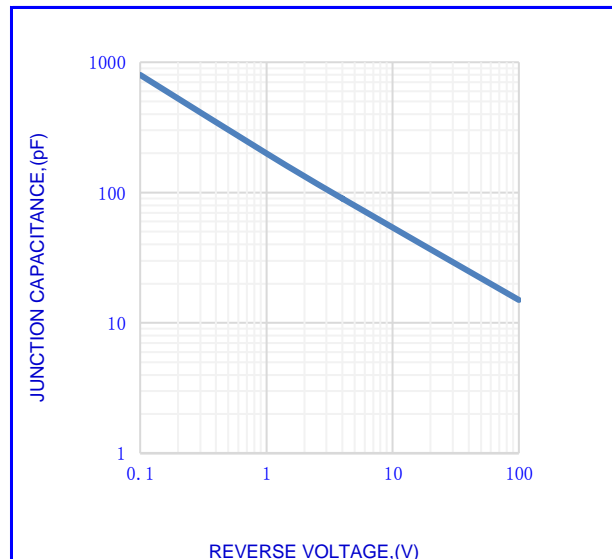


Fig.4- TYPICAL JUNCTION CAPACITANCE

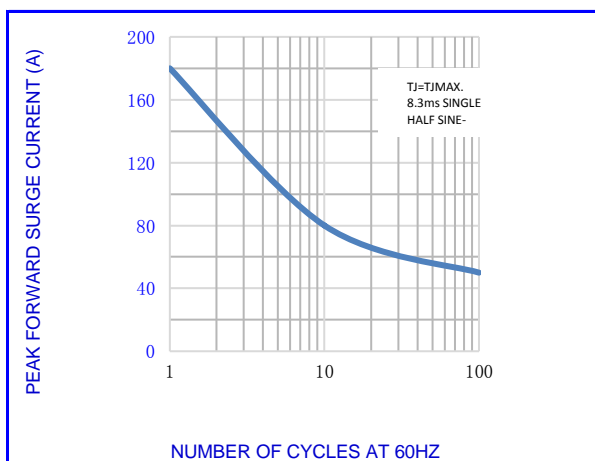


Fig.5-MAX. NON-REPETITIVE SURGE CURRENT

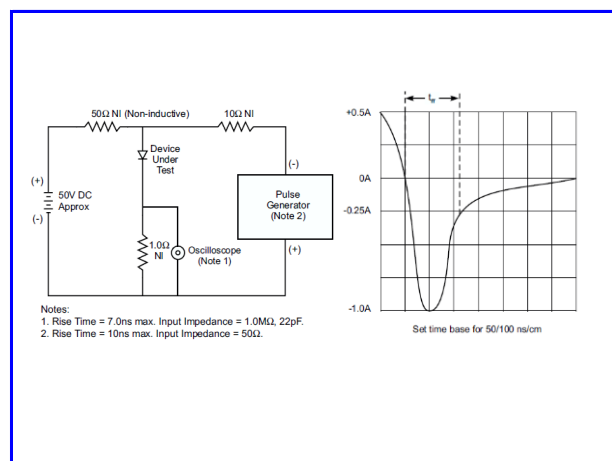


Fig.6-REVERSE RECOVERY TIME CHARACTERISTIC AND TEST CIRCUIT



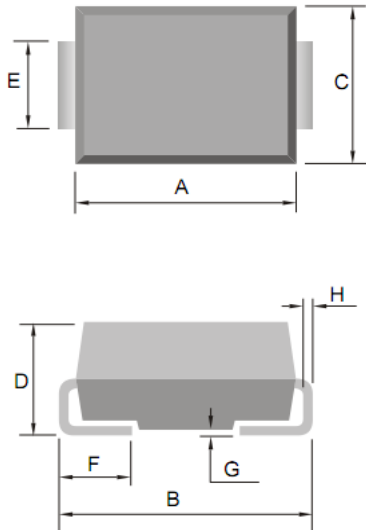
**ES8JH**

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**OUTLINE DRAWINGS**

**SMC(DO-214AB)**

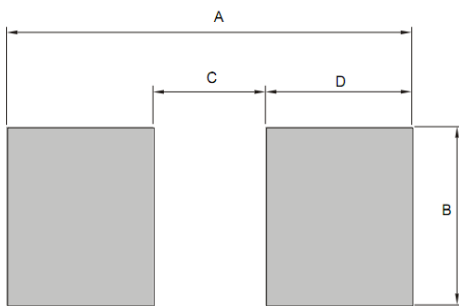


**OUTLINE DIMENSIONS**

Dim.	Milimeters			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.	Milimeters			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	-

**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

ES8JH

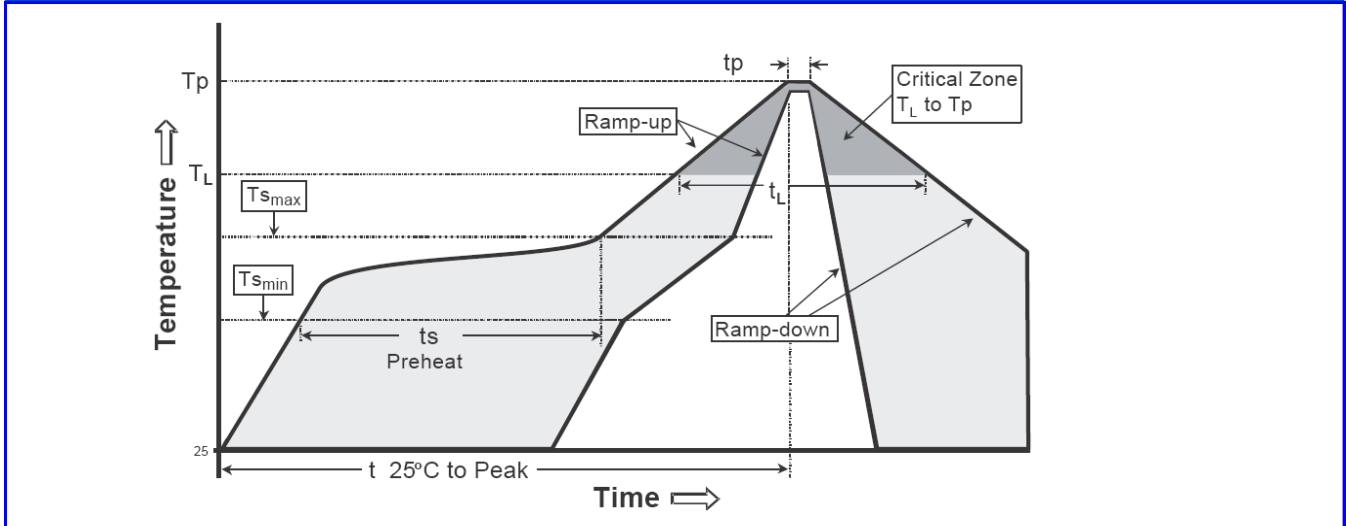
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Recommended wave soldering condition

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.

**ES8JH**

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