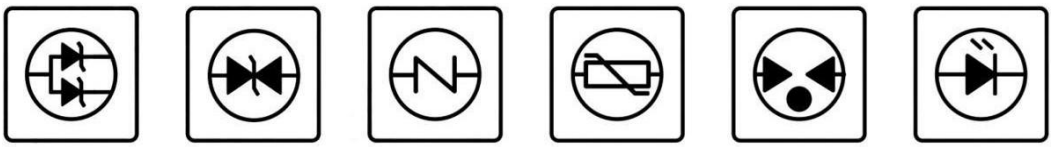
MSKSEMI 美森科
SEMICONDUCTOR



MBRS130LT3G(MS)

Product specification

MBRS130LT3G(MS)

FEATURES

- The plastic package carries underwriters Laboratory Flammability classification 94v-0
- For surface mounted applications
- Metal silicon junction , majority carrier conduction
- Low power loss , high efficiency
- Built-in strain relief, ideal for automated placement
- High forward surge current capability
- High temperature soldering guaranteed: 260℃/1 0 seconds at terminals
- Compliant to ROHS Directive 201 1/65/EU
- Compliant to Halogen-free

Reference News

Outline	Marking
	
SMB	

MECHANICALDATA

- **Case:** JEDEC DO-214AA molded plastic body
- **Terminals:** solder plated , solderable per MIL-STD- 750 , Method 2026
- **Polarity:** color band denotes cathode end
- **Mounting Position:** Any

Maximum ratings and Electrical characteristics (AT T_A= 25℃ unless otherwise noted)

PARAMETER	SYMBOLS	MBRS130LT3G(MS)	UNITS
Maximum repetitive peak reverse voltage	V_{RRM}	30	V
Maximum RMS voltage	V_{RMS}	30	V
Maximum DC blocking voltage	V_{DC}	30	V
Maximum average forward rectified current at T_L(see fig.1)	$I_{(AV)}$	2.0	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load	I_{FSM}	50	A
Maximum instantaneous forward voltage at 1.0A	V_F	0.39	V
Maximum instantaneous forward voltage at 2.0A	V_F	0.44	
Maximum DC reverse current at rated DC blocking voltage T_A=25℃	I_R	0.1	mA
T_J =85℃		10.0	
Typical junction capacitance (NOTE 1)	C_J	200	pF
Typical thermal resistance (NOTE 2)	$R_{\theta JA}$	60	℃/W
Operating junction temperature range	T_J,	-55 to +150	℃
Storage temperature range	T_{STG}	-55 to +150	℃

Note: 1.Measured at 1MHz and applied reverse voltage of 4.0V D.C.
2.P.C.B. mounted with 2.0x2.0"(5.0x5.0cm) copper pad areas

Rating and characteristic curves

FIG. 1- FORWARD CURRENT DERATING CURVE

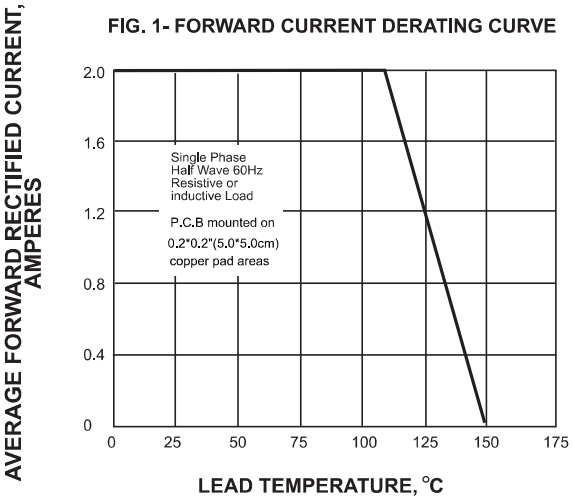


FIG. 2-MAXIMUM NON-REPETITIVE PEAK FORWARD SURGE CURRENT

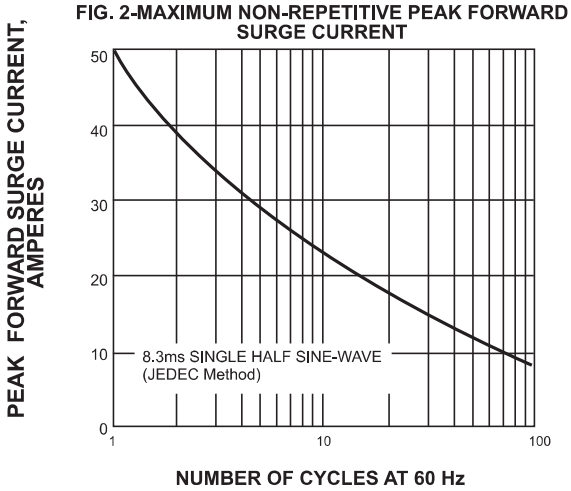


FIG. 3-TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

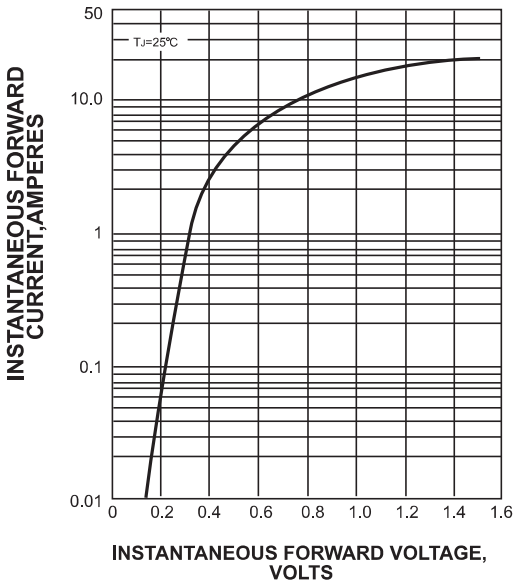


FIG. 4-TYPICAL REVERSE CHARACTERISTICS

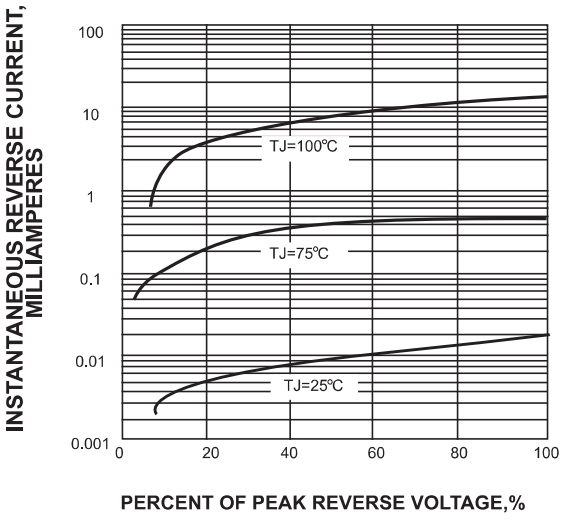


FIG. 5-TYPICAL JUNCTION CAPACITANCE

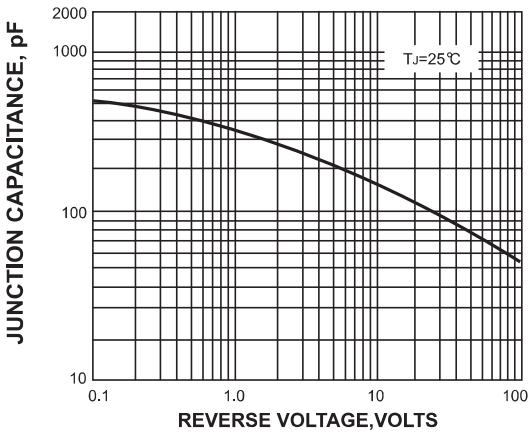
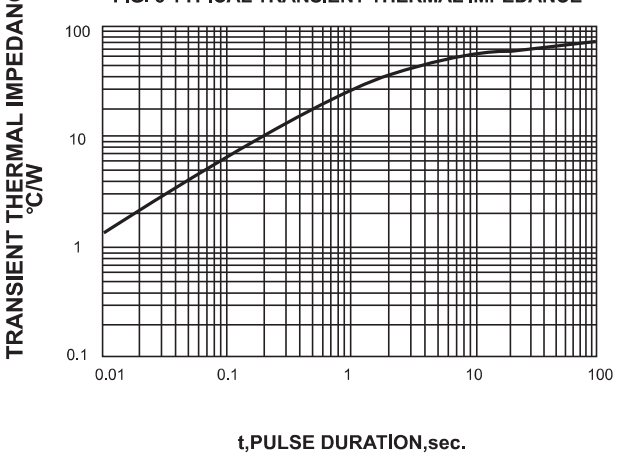
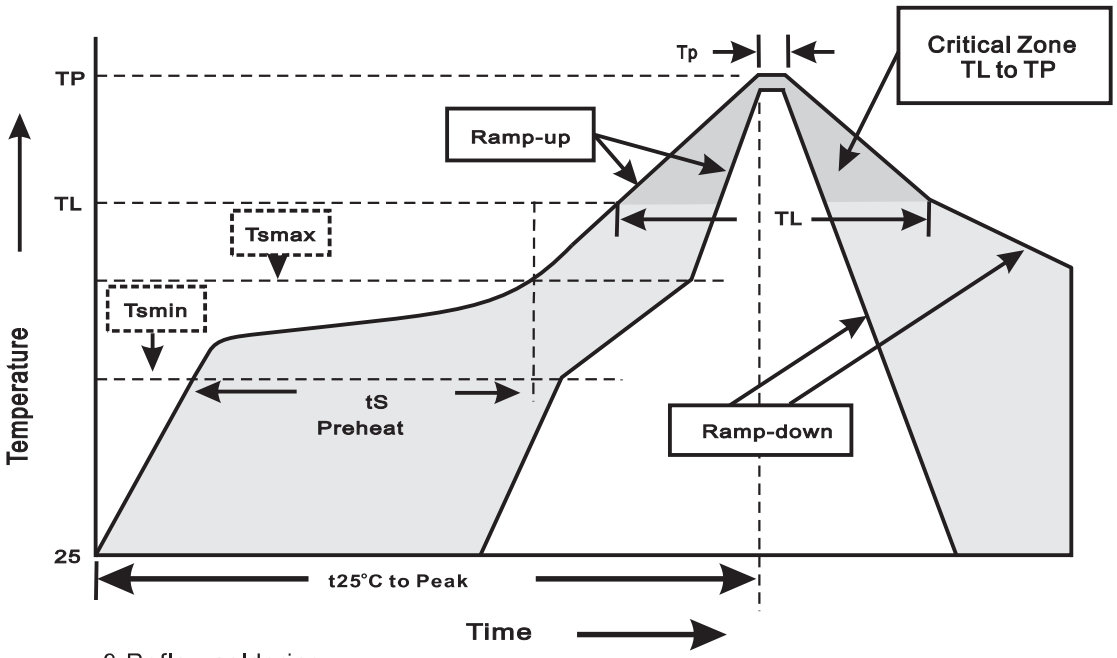


FIG. 6-TYPICAL TRANSIENT THERMAL IMPEDANCE



Suggested thermal profiles for soldering processes

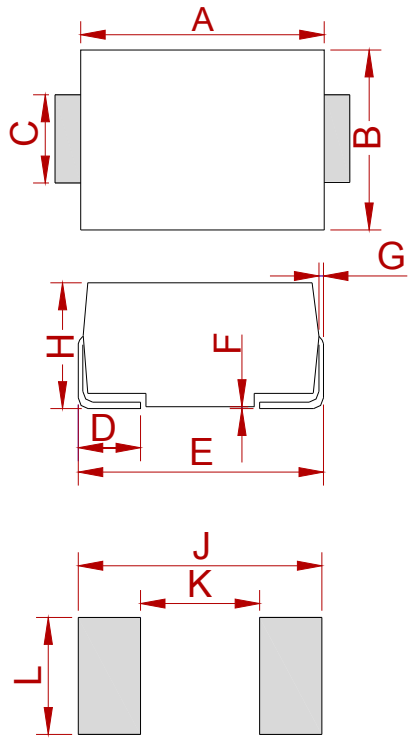
1.Storage environment: Temperature=5°C~40°C Humidity=55%±25%
2.Reflow soldering of surface-mount devices



3.Reflow soldering

Profile Feature	Soldering Condition
Average ramp-up rate(T_L to T_P)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(t_s)	 150°C 200°C 60~120sec
Tsmax to T_L -Ramp-upRate	 <3°C/sec
Time maintained above: -Temperature(T_L) -Time(t_L)	 217°C 60~260sec
Peak Temperature(T_P)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(t_P)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

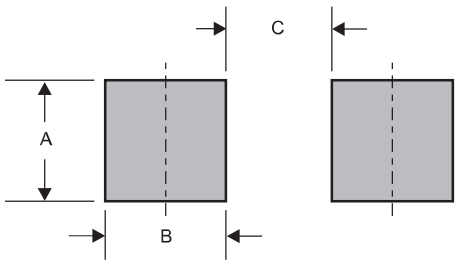
PACKAGE MECHANICAL DATA



DO-214AA (SMB)

Ref.	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	4.25	4.75	0.167	0.187
B	3.30	3.94	0.130	0.155
C	1.85	2.21	0.073	0.087
D	0.76	1.52	0.030	0.060
E	5.08	5.59	0.200	0.220
F	0.051	0.203	0.002	0.008
G	0.15	0.31	0.006	0.012
H	2.11	2.44	0.083	0.096
J	6.80		0.270	
K		2.60		0.100
L	2.40		0.090	

Suggested solder pad layout



Dimensions in inches and (millimeters)

PACKAGE	A	B	C
SMB	0.078 (2.00)	0.059 (1.50)	0.110 (2.80)

REELSPECIFICATION

P/N	PKG	QTY
MBRS130LT3G(MS)	SMB	3000

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