

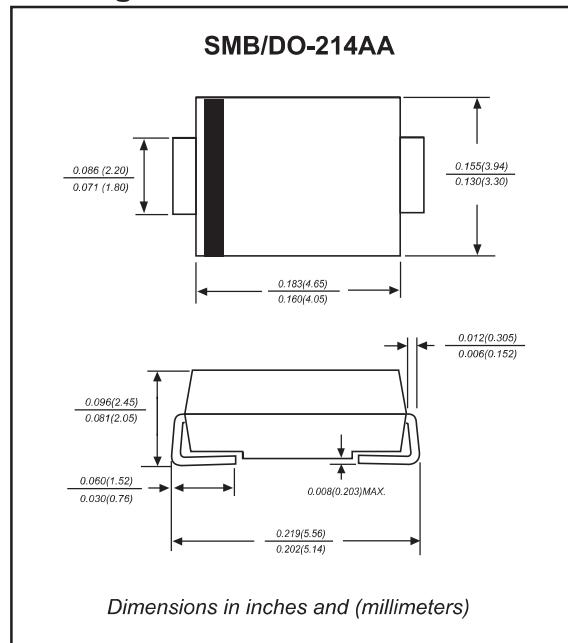
Package outline

Features

- Ideal for surface mounted application
- Low profile surface mounted application in order to optimize board space
- Built-in strain relief design
- Ultra fast recovery time for high efficient
- Glass passivated chip junction
- Lead-free parts meet RoHS requirements
- Compliant to Halogen-free

Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : Molded plastic, SMB/DO-214AA
- Terminals : Solder plated, solderable per MIL-STD-750, Method 2026
- Polarity : Indicated by cathode band
- Mounting Position : Any



Maximum ratings (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MURS120T3G	UNITS
Maximum repetitive peak reverse voltage	V _{RRM}	200	V
Maximum RMS voltage	V _{RMS}	140	V
Maximum continuous reverse voltage	V _R	200	V
Maximum average forward rectified current	I _o	1.0	A
Non-repetitive peak forward surge current 8.3ms single half sine-wave	I _{FSM}	40	A
Typical junction capacitance (Note 1)	C _J	15	pF
Operating junction temperature range	T _J	-55 to +175	°C
Storage temperature range	T _{STG}	-65 to +175	°C

Electrical characteristics (AT $T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOLS	MURS120T3G	UNITS
Maximum instantaneous forward voltage at $I_F=1.0\text{A}$ $T_J=25^\circ\text{C}$	V _F	0.875	V
Maximum instantaneous forward voltage at $I_F=1.0\text{A}$ $T_J=150^\circ\text{C}$	V _F	0.71	V
Maximum reverse leakage current $T_J=25^\circ\text{C}$ at rated V _R	I _R	2.0 50	μA
Maximum reverse recovery time, (Note 2)	t _{rr}	25	ns

Thermal characteristics

PARAMETER	SYMBOLS	MURS120T3G	UNITS
Typical thermal resistance junction to ambient , (Note 3)	R _{θJA}	25	°C / W
Typical thermal resistance junction to case , (Note 3)	R _{θJC}	15	°C / W

Notes 1: Measured at 1 MHz and applied reverse voltage of 4.0 VDC

2: Measured with $I_F = 0.5\text{ A}$, $I_R = 1\text{ A}$, $I_{rr} = 0.25\text{ A}$

3: Mounted on FR-4 PCB Copper, minimum recommended pad layout

Rating and characteristic curves

FIG.1-TYPICAL FORWARD CHARACTERISTICS

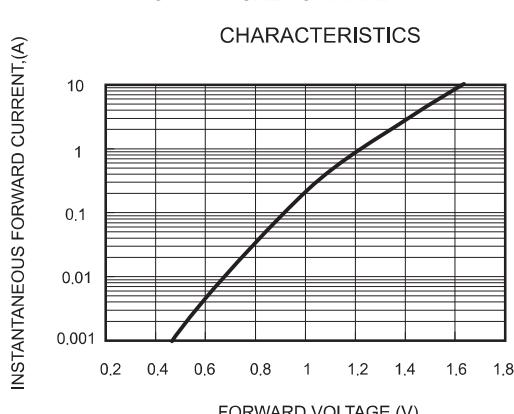


FIG.2-TYPICAL FORWARD CURRENT DERATING CURVE

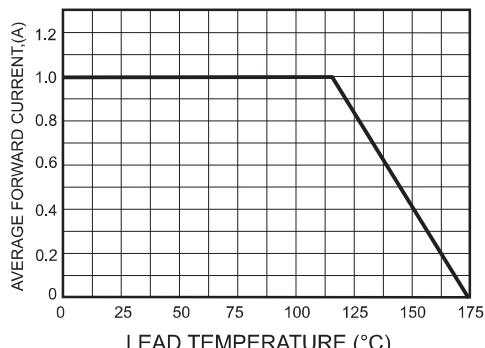
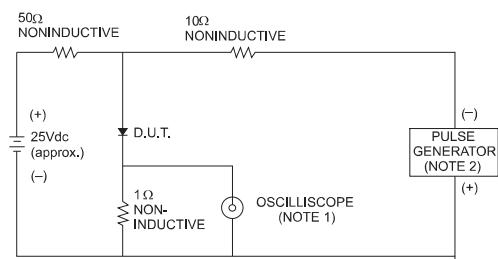


FIG.3- TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTICS



NOTES: 1. Rise Time= 7ns max., Input Impedance= 1 megohm.22pF.

2. Rise Time= 10ns max., Source Impedance= 50 ohms.

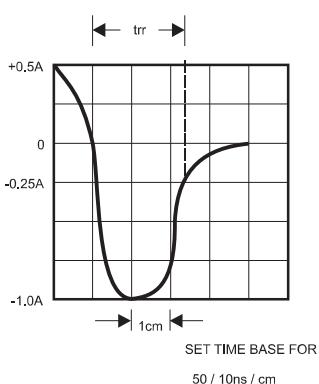


FIG.4-MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

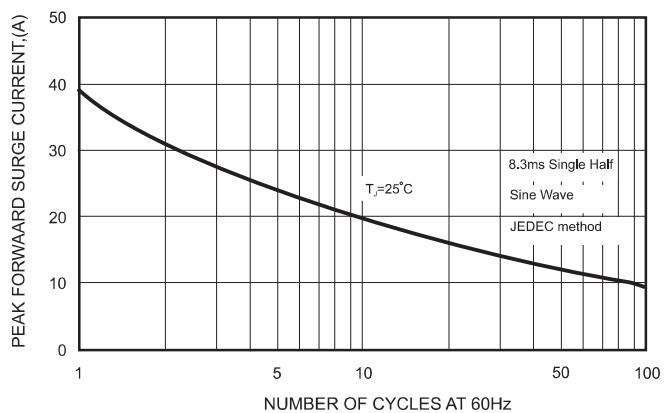
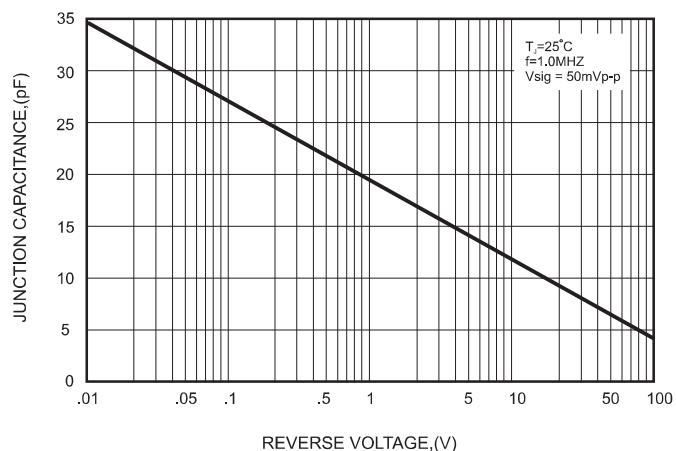


FIG.5-TYPICAL JUNCTION CAPACITANCE



Pinning information

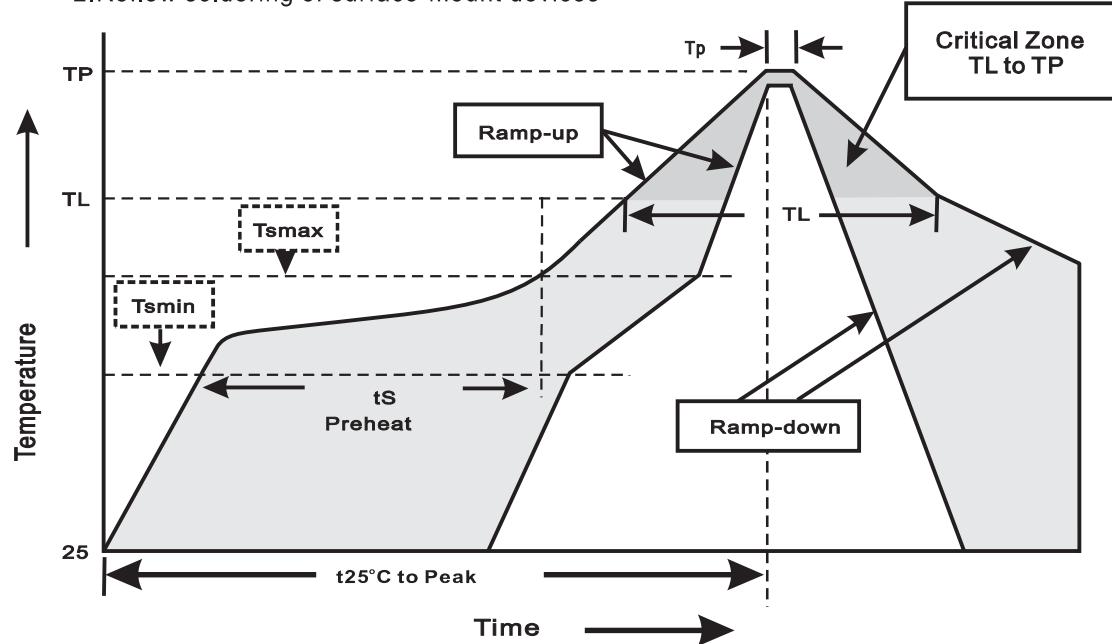
Pin	Simplified outline	Symbol
Pin1 cathode Pin2 anode		

Marking

Type number	Marking code
MURS120T3G	U1D

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(T_{smin}) -Temperature Max(T_{smax}) -Time(min to max)(t_s)	150°C 200°C 60~120sec
T_{smax} 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