MMBD3004S

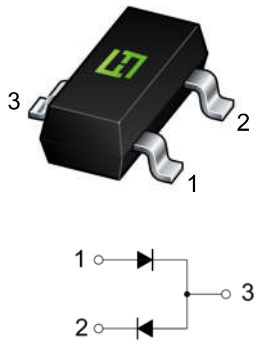
Surface Mount Switching Diode-600V

Features

- Ideal for surface mounted application.
- Fast Switching Speed.
- For General Purpose Switching Applications.
- Epitaxial Planar Diode.
- Lead-free parts meet RoHS requirments.

Package

SOT-23



Mechanical data

- Epoxy : UL94-V0 rated flame retardant
- Case : Molded plastic, SOT-23
- Terminals :Plated terminals, solderable per MIL-STD-750, Method 2026
- Mounting Position : Any

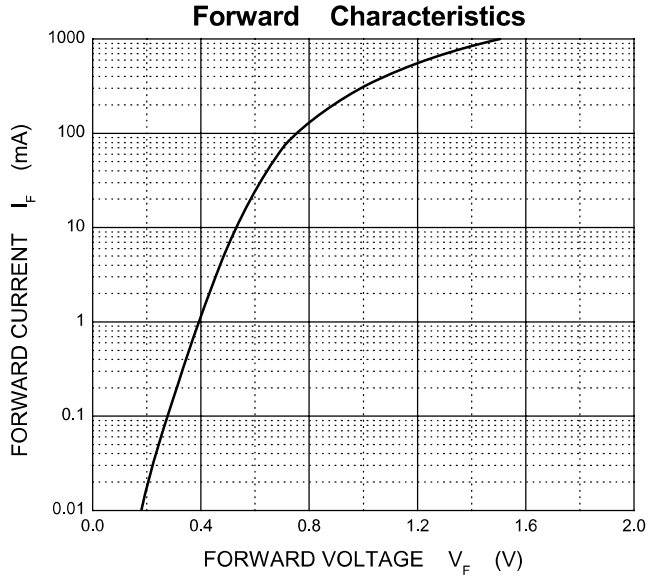
Maximum Ratings @Ta=25℃

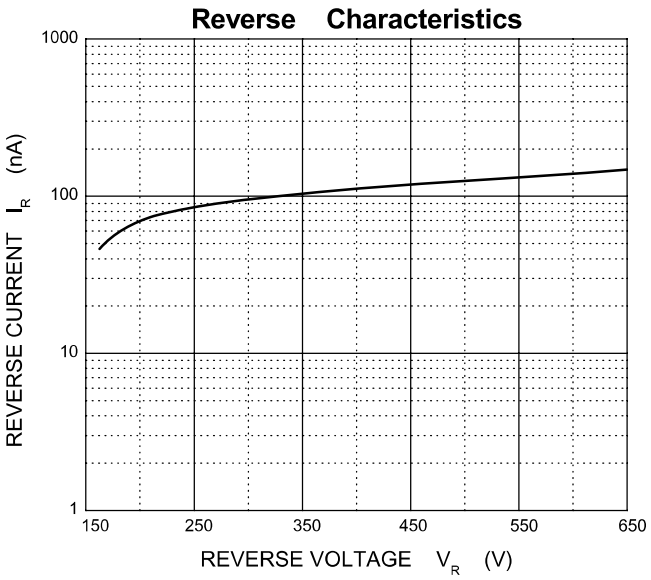
Parameter	Symbol	Limit	Unit
Repetitive peak reverse voltage **DC blocking voltage**	V_{RRM} V_{DC}	600	V
Average rectified output current	$I_{F(AV)}$	500	mA
Non-Repetitive Peak Forward Surge Current	I_{FSM}	8.0	A
Junction temperature	T_J	-55~+150	℃
Storage temperature range	T_{STG}	-55~+150	℃

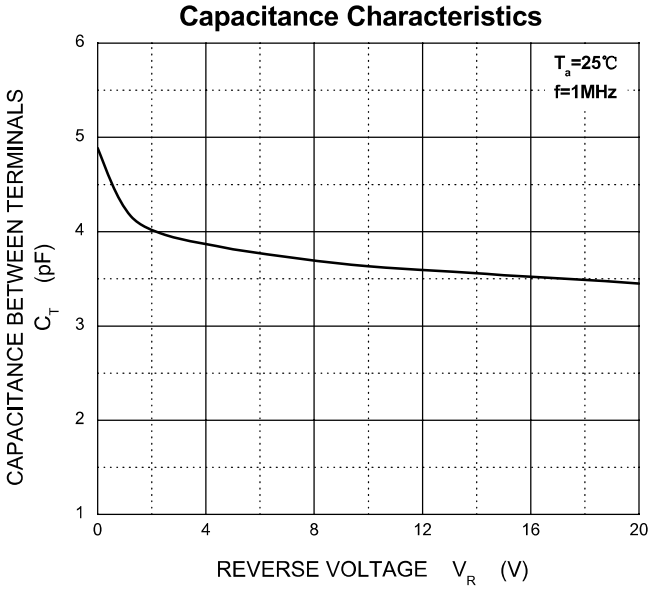
ELECTRICAL CHARACTERISTICS (Ta=25℃ unless otherwise specified)

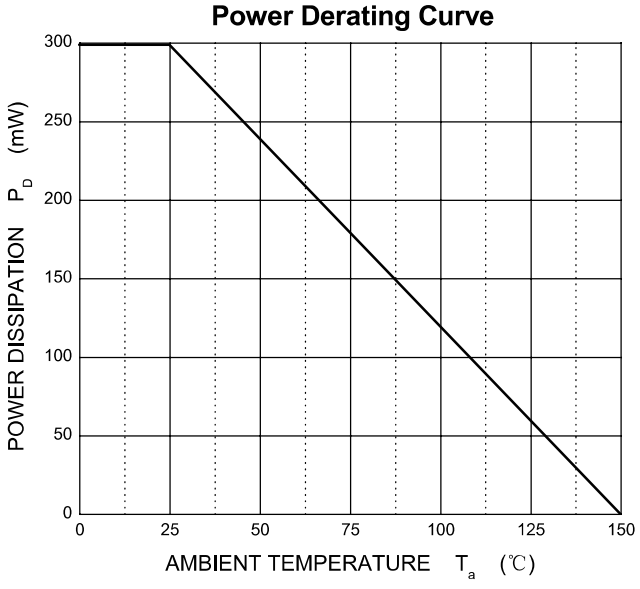
Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Reverse breakdown voltage	$V_{(BR)}$	I_R= 100μA	600			V
Reverse voltage leakage current	I_R	V_R=600V			10	μA
Forward voltage	V_F	I_F=300mA			1.3	V
Diode capacitance	C_T	V_R=0V, f=1MHz		5		pF
Reveres recovery time	t_{rr}	I_F=I_R=10mA,I_{rr}=0.1×I_R			80	ns

Rating and characteristic curves

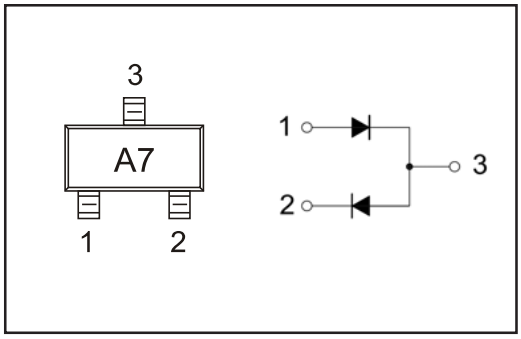




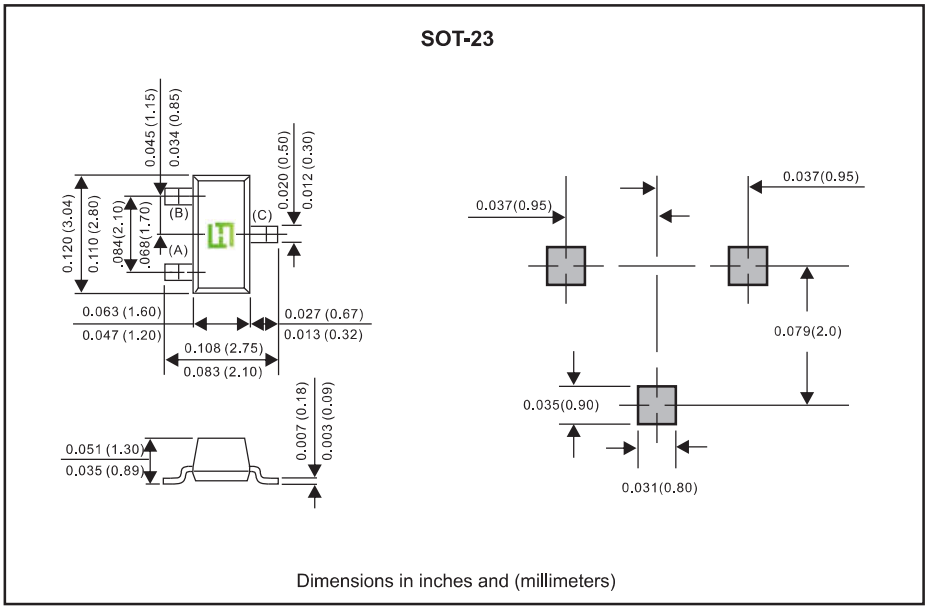




Pinning information

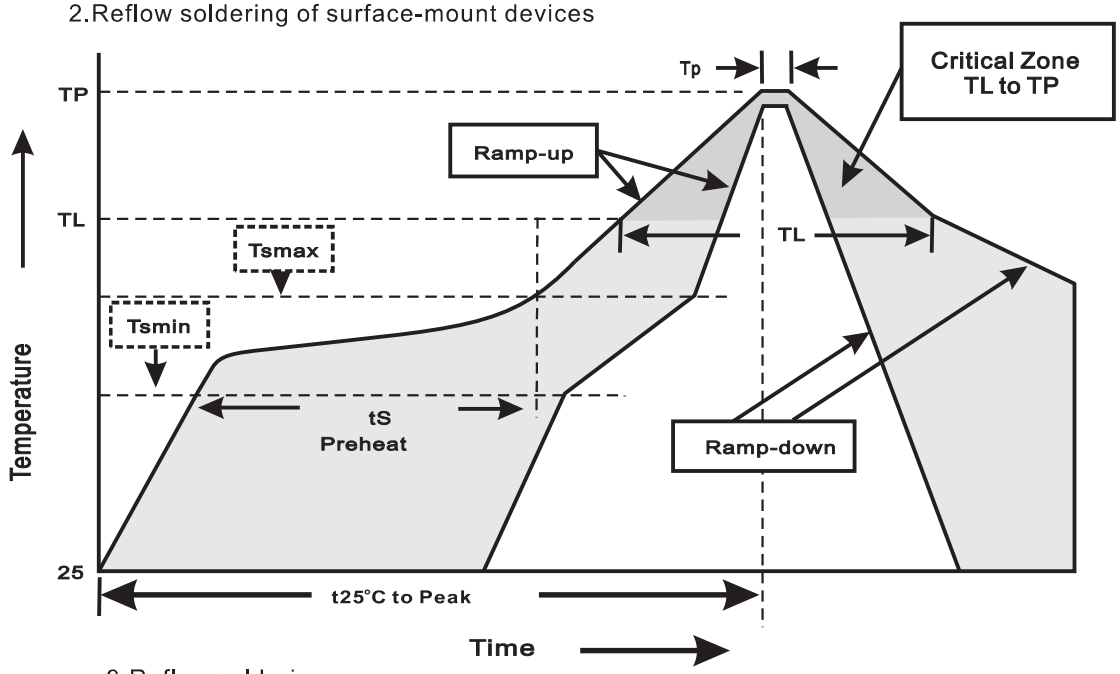


Package Outline



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