FUXINSEMI
INNOVATOR IN SEMICONDUCTOR

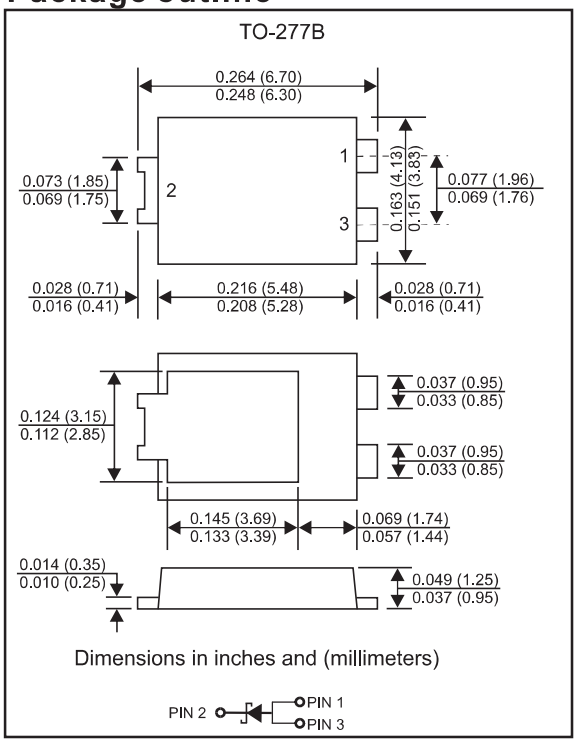
SBR10U45SP5-13-FS

10.0A Low VF Surface Mount Schottky Barrier Rectifiers -45V

Features

- Ultra Low Forward Voltage Drop .
- Very low profile-typical height of 1.10mm
- Low Power Losses,High Efficiency Operation
- Low Thermal Resistance Package.
- High Operating Junction Temperature.

Package outline



Mechanical data

- Epoxy:UL94-V0 rated flame retardant
- Case : TO-277B ,molded Plastic
- Terminals:Solderable per MIL-STD-750,Method 2026
- Marking:SB1045L

Maximum ratings (AT T_A=25°C unless otherwise noted)

Parameter	Symbol	SBR10U45SP5-13-FS	Unit
DC Blocking Voltage Working Peak Reverse Voltage Repetitive Peak Reverse Voltage	V_{DC} V_{RWM} V_{RRM}	45	V
RMS Reverse Voltage	V_{RMS}	31.5	V
Average Forward Rectified Current	$I_{F(AV)}$	10.0	A
Peak Forward Surge Current,8.3ms Half Sine-wave(T_A=25°C)	I_{FSM}	275	A
Operating junction temperature range	T_J	-55 to +150	°C
Storage temperature range	T_{STG}	-55 to +150	°C

Electrical Characteristics (AT T_A=25°C unless otherwise noted)

Parameter	Test Conditions	Symbol	MIN.	TYP.	MAX.	Unit
Reverse Breakdown Voltage	I_R=0.5mA,T_J=25°C	V_B	45	-	-	V
Forward voltage	I_F=8A,T_J=25°C	V_F	-	0.40	-	V
	I_F=10A,T_J=25°C		-	0.42	0.45	
Reverse current	V_R=45V,T_J=25°C	I_R	-	0.051	0.5	mA
	V_R=45V,T_J=100°C		-	5	15	
	V_R=45V,T_J=150°C		-	27	75	

Thermal Characteristics

Parameter	Symbol	SBR10U45SP5-13-FS	Unit
Typical thermal resistance junction to ambient ,Note 1 Typical thermal resistance junction to ambient ,Note 2	$R_{\theta JA}$ $R_{\theta JA}$	73 31	°C/W °C/W

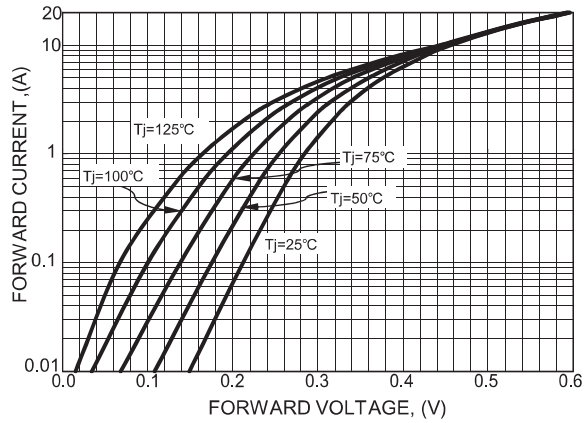
Note : 1.FR-4 PCB, 2oz.Copper.
2.Polymide PCB, 2oz.Copper.Cathode pad dimensions 18.8mm x 14.4mm.Anode pad dimensions 5.6mm x 14.4mm.

SBR10U45SP5-13-FS

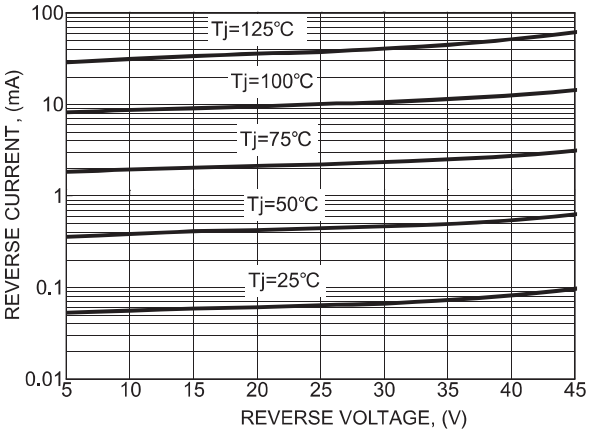
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Rating and characteristic curves

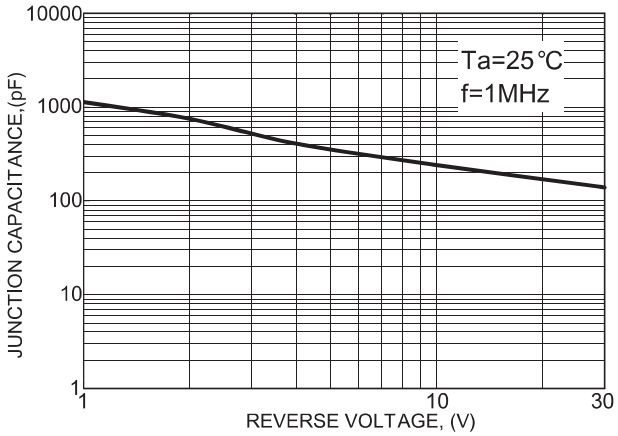
TYPICAL FORWARD CHARACTERISTICS



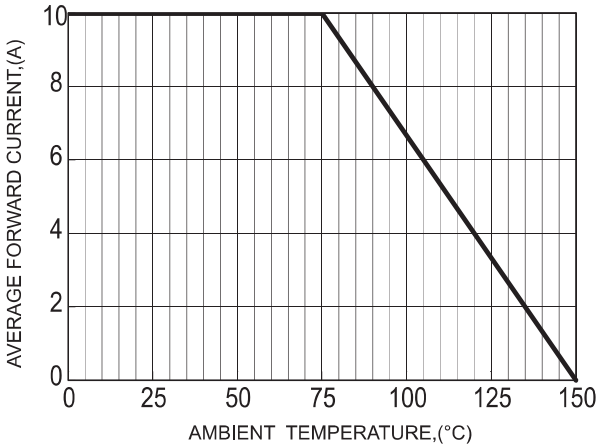
TYPICAL REVERSE LEAKAGE CHARACTERISTICS



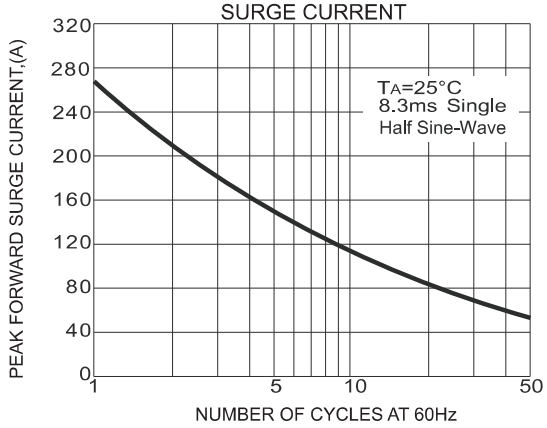
TYPICAL JUNCTION CAPACITANCE



TYPICAL FORWARD CURRENT DERATING CURVE

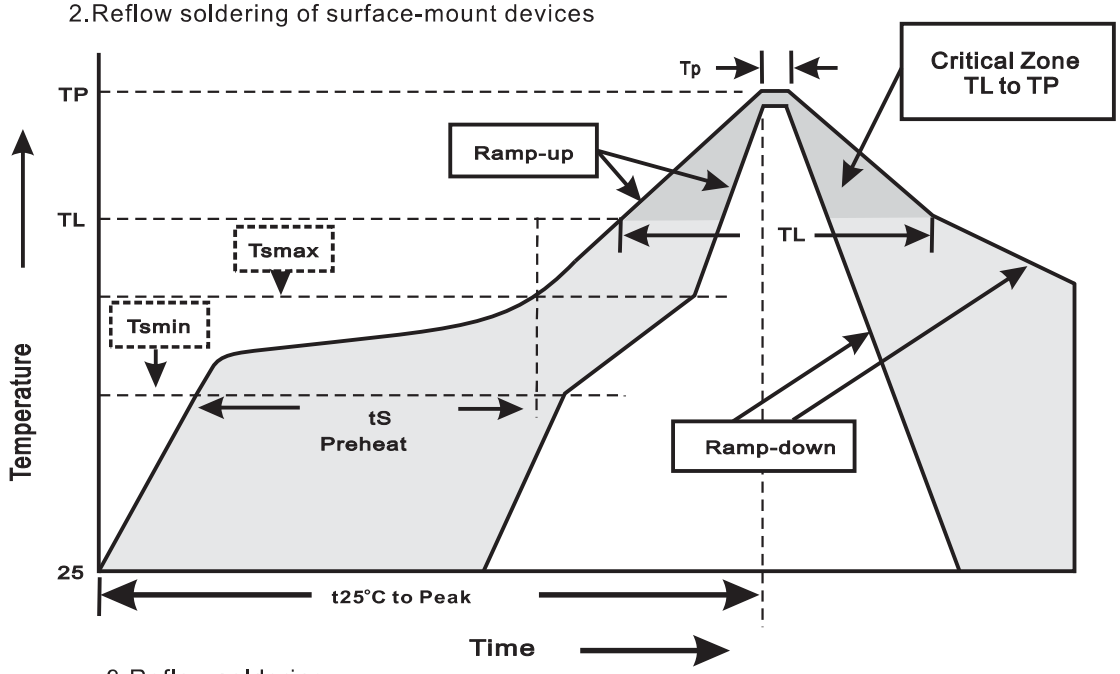


MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT



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