

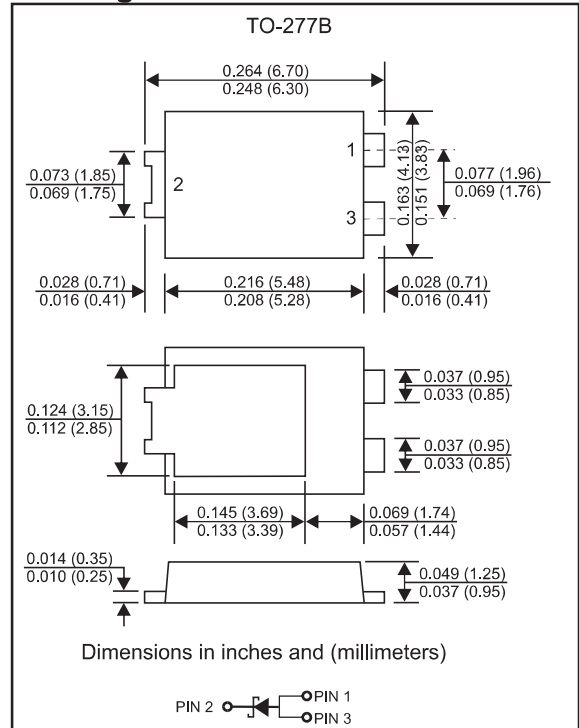
Features

- 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.

Mechanical data

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

Package outline



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

Parameter	Symbol	SB1045L	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($T_A=25^\circ\text{C}$)	I_{FSM}	275	A
Operating junction temperature range	T_J	-55 to +150	$^\circ\text{C}$
Storage temperature range	T_{STG}	-55 to +150	$^\circ\text{C}$

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

Parameter	Test Conditions	Symbol	MIN.	TYP.	MAX.	Unit
Reverse Breakdown Voltage	$I_R=0.5\text{mA}, T_J=25^\circ\text{C}$	V_B	45	-	-	V
Forward voltage	$I_F=8\text{A}, T_J=25^\circ\text{C}$	V_F	-	0.40	-	V
	$I_F=10\text{A}, T_J=25^\circ\text{C}$		-	0.42	0.47	
Reverse current	$V_R=45\text{V}, T_J=25^\circ\text{C}$	I_R	-	0.051	0.5	mA
	$V_R=45\text{V}, T_J=100^\circ\text{C}$		-	5	15	
	$V_R=45\text{V}, T_J=150^\circ\text{C}$		-	27	75	

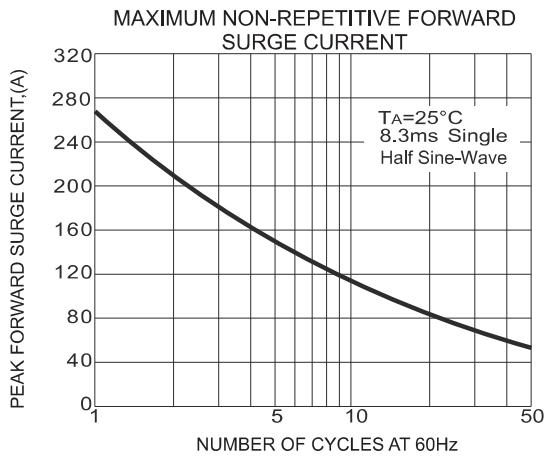
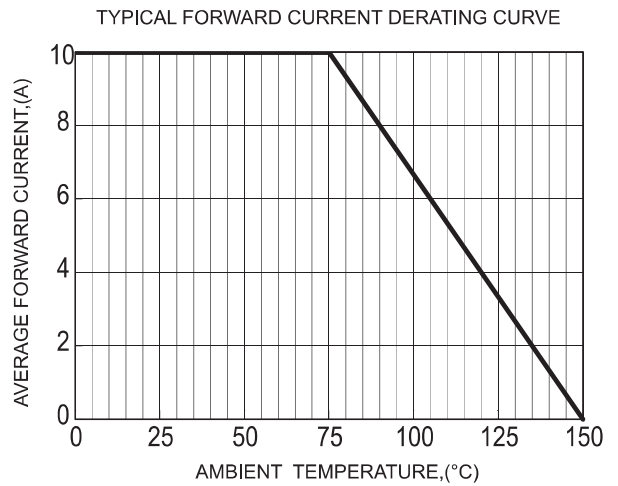
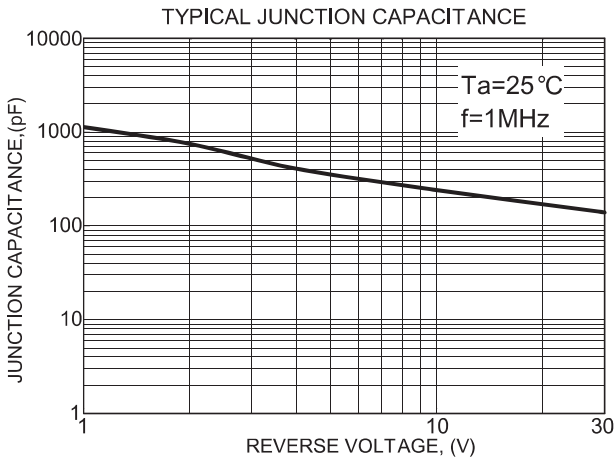
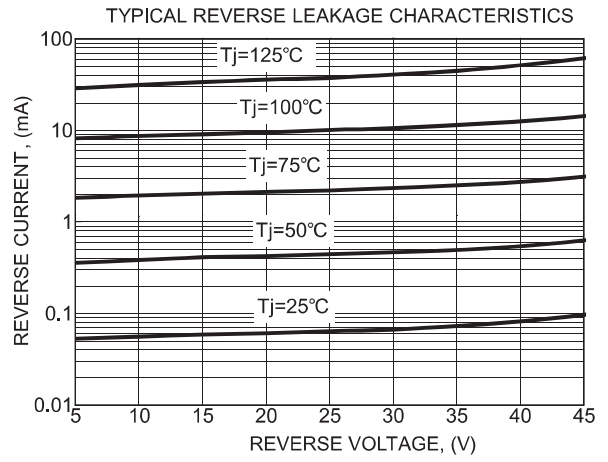
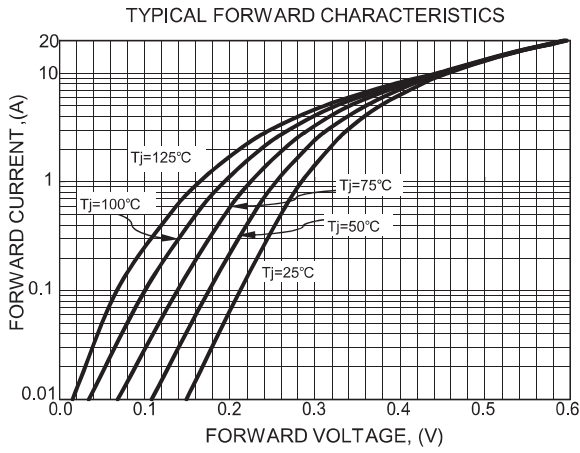
Thermal Characteristics

Parameter	Symbol	SB1045L	Unit
Typical thermal resistance junction to ambient ,Note 1	$R_{\theta JA}$	73	$^\circ\text{C}/\text{W}$
Typical thermal resistance junction to ambient ,Note 2	$R_{\theta JA}$	31	$^\circ\text{C}/\text{W}$

Note : 1.FR-4 PCB, 2oz.Copper.

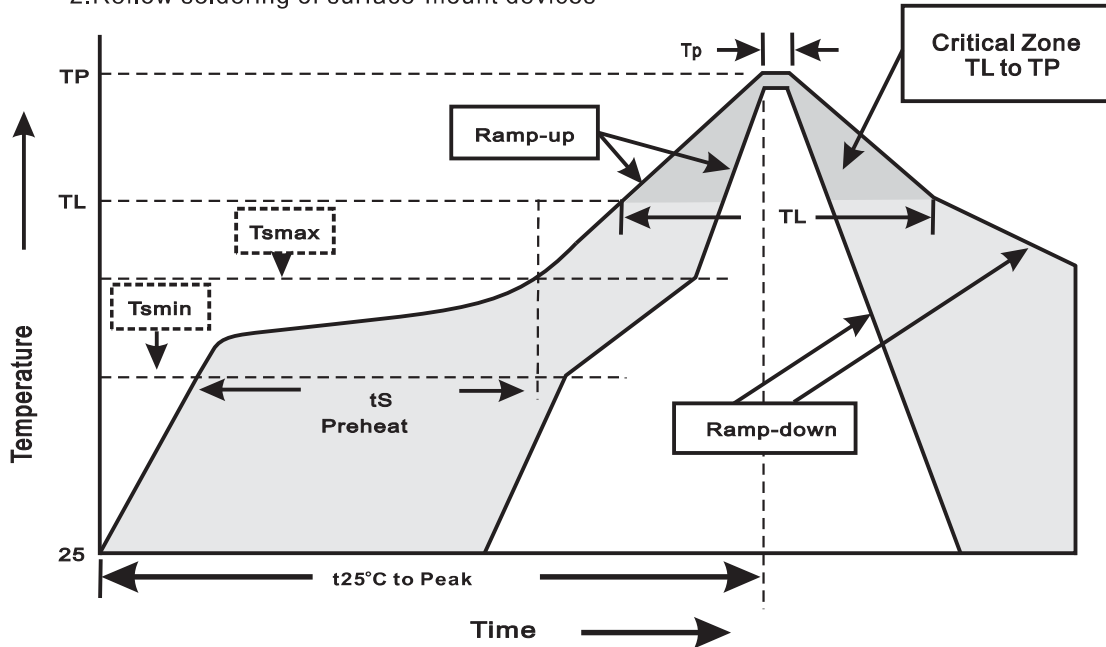
2.Polyimide PCB, 2oz.Copper.Cathode pad dimensions 18.8mm x 14.4mm.Anode pad dimensions 5.6mm x 14.4mm.

Rating and characteristic curves



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(TL to TP)	<3°C/sec
Preheat -Temperature Min(Tsmin) -Temperature Max(Tsmax) -Time(min to max)(ts)	150°C 200°C 60~120sec
Tsmax to TL -Ramp-upRate	<3°C/sec
Time maintained above: -Temperature(TL) -Time(tL)	217°C 60~260sec
Peak Temperature(TP)	255°C-0/+5°C
Time within 5°C of actual Peak Temperature(tp)	10~30sec
Ramp-down Rate	<6°C/sec
Time 25°C to Peak Temperature	<6minutes

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