

Features

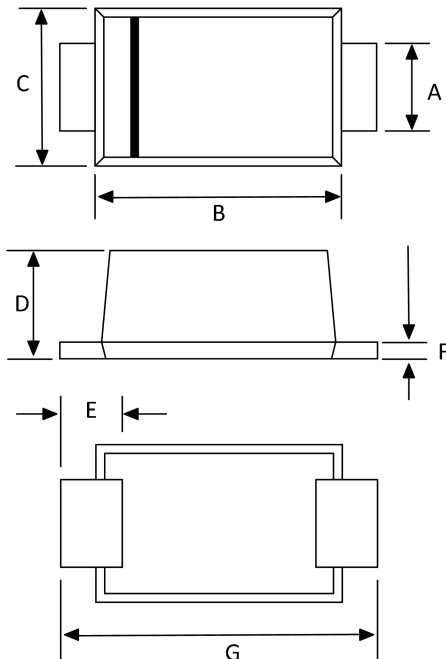
- ◆ For surface mounted applications
- ◆ Low Forward Voltage Drop
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ Plastic package has underwriters laboratory flammability 94V-0



Applications

- ◆ Low voltage,high frequency inverters
- ◆ Freewheeling
- ◆ Polarity protection applications

Dimensions (SOD-123FL)



Ref.	Millimeters		Inches	
	Min	Max	Min.	Max.
A	0.70	1.10	0.028	0.043
B	2.50	2.90	0.098	0.114
C	1.50	1.90	0.059	0.075
D	0.90	1.10	0.035	0.043
E	0.55	0.95	0.022	0.037
F	0.10	0.20	0.004	0.008
G	3.40	3.80	0.134	0.150

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ Unless otherwise specified)

Parameter		Symbol	Value	Unit
Maximum repetitive peak reverse voltage	B5817W	V_{RRM}	20	V
	B5818W		30	
	B5819W		40	
Maximum RMS voltage	B5817W	V_{RMS}	14	V
	B5818W		21	
	B5819W		28	
Maximum DC blocking voltage	B5817W	V_{DC}	20	V
	B5818W		30	
	B5819W		40	
Maximum average forward rectified current at $T_A = 75^{\circ}\text{C}$		$I_{F(AV)}$	1.0	A
Maximum instantaneous forward voltage at 1A	B5817W	V_F	0.45	V
	B5818W		0.55	
	B5819W		0.60	
Maximum DC Reverse Current at Rated DC Blocking Voltage	$T_A = 25^{\circ}\text{C}$	I_R	1	mA
	$T_A = 100^{\circ}\text{C}$		10	
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)		I_{FSM}	25	A
Typical junction capacitance at 4V, 1MHz		C_J	110	pF
Operating junction temperature range		T_J	150	$^{\circ}\text{C}$
Storage temperature range		T_{STG}	-55 to +150	$^{\circ}\text{C}$

Ratings and Characteristic Curves ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Figure 1. Forward Current Derating Curve

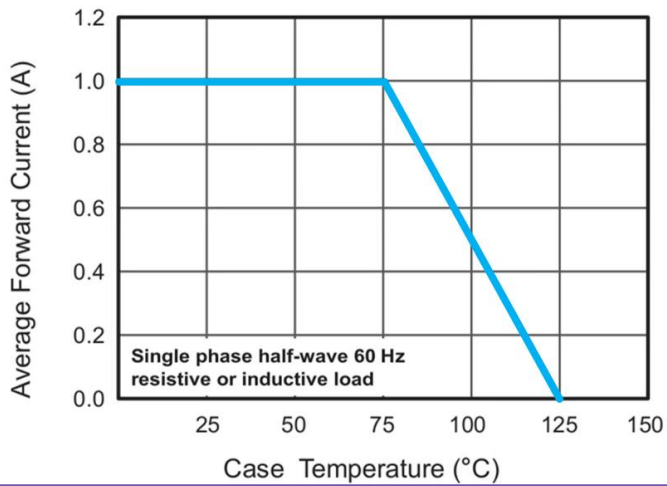


Figure 2. Maximum Non-Repetitive Peak Forward Surge Current

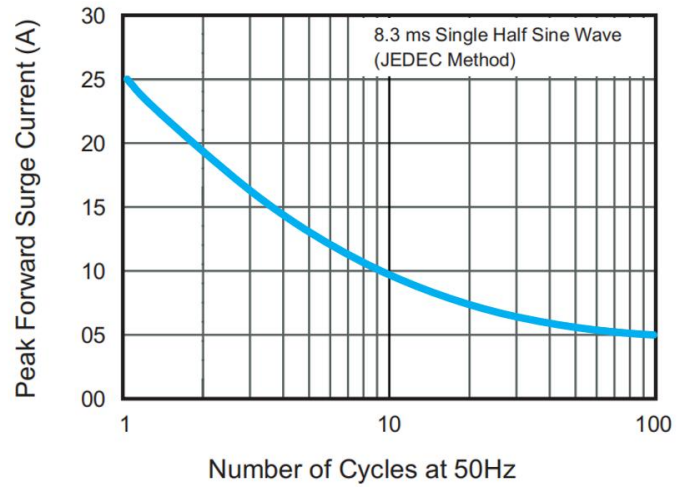


Figure 3. Typical Instantaneous Forward Characteristics

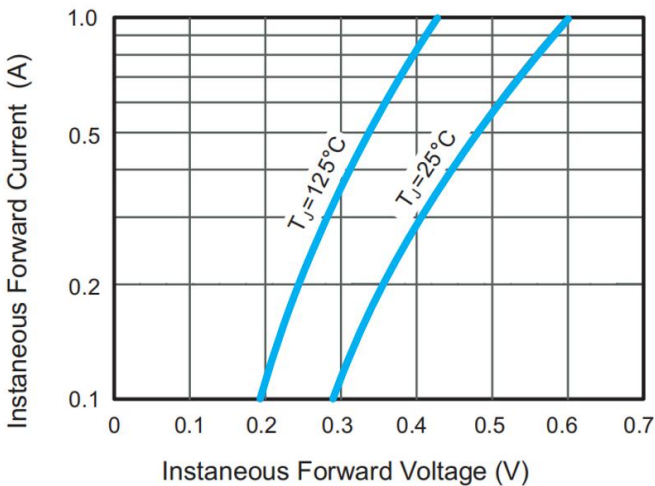


Figure 4. Junction Capacitance vs. Reverse Voltage

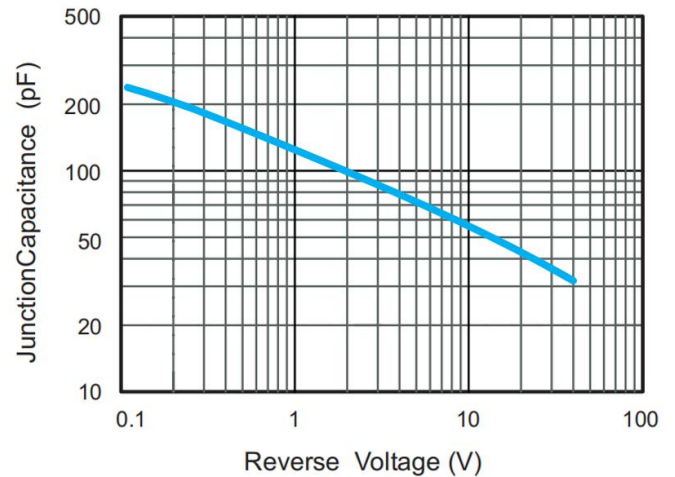
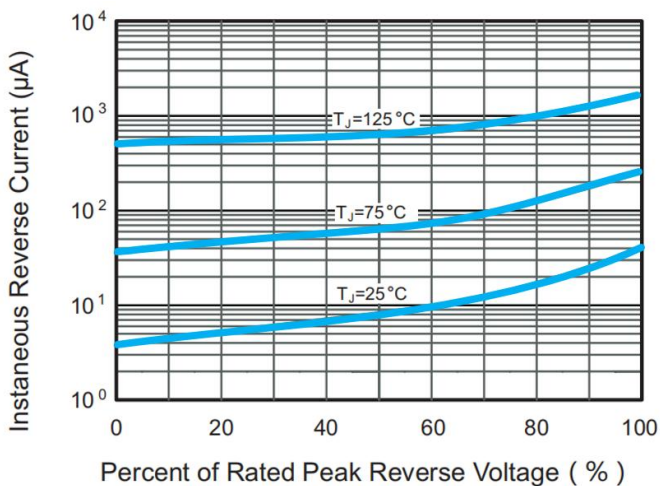
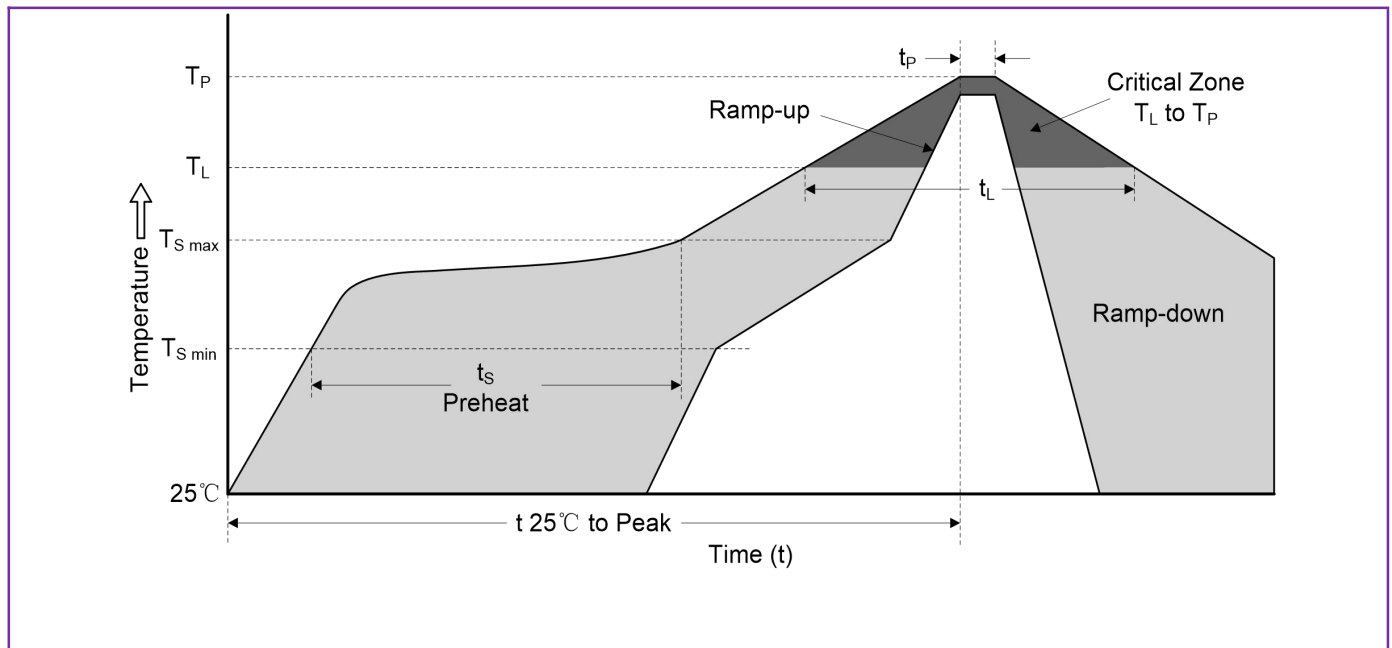


Figure 5. Typical Reverse Leakage Characteristics



Reflow Soldering Parameters



Reflow Condition		Lead-free Assembly
Pre heat	-Temperature Min ($T_{S\ min}$)	150°C
	-Temperature Max ($T_{S\ max}$)	200°C
	-Time (min to max) (t_s)	60-180 seconds
Average ramp-up rate (T_L to T_P)		3°C/second max.
$T_{S\ max}$ to T_L -Ramp-up Rate		3°C/second max.
Reflow	-Temperature (T_L) (Liquidus)	217°C
	-Time (min to max) (t_s)	60-150 seconds
Peak Temperature (T_P)		260(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_p)		20-40 seconds
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_P)		8 minutes max.
Do not exceed		260°C