

Features

- ◆ For surface mounted applications
- ◆ Metal silicon junction, majority carrier conduction
- ◆ Low power loss, high efficiency
- ◆ Built-in strain relief, ideal for automated placement
- ◆ High forward surge current capability
- ◆ Plastic package has underwriters laboratory flammability 94V-0
- ◆ Polarity: Color band denotes cathode end



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

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

Parameter	Symbol	SS								Unit
		22S	24S	26S	28S	210S	212S	215S	220S	
Maximum repetitive peak reverse voltage	V_{RRM}	20	40	60	80	100	120	150	200	V
Maximum RMS voltage	V_{RMS}	14	28	42	56	70	84	105	140	V
Maximum DC blocking voltage	V_{DC}	20	40	60	80	100	120	150	200	V
Maximum average forward rectified current	$I_{F(AV)}$	2.0								A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load (JEDEC Method)	I_{FSM}	50								A
Maximum instantaneous forward voltage at 2A	V_F	0.55	0.70	0.85			0.95		V	
Maximum DC reverse current at rated DC blocking voltage	$I_R@25^{\circ}\text{C}$	0.5			0.3				mA	
	$I_R@100^{\circ}\text{C}$	5			3					
Typical junction capacitance (Note 1)	C_J	220		80						pF
Typical thermal resistance (Note 2)	$R_{\theta JA}$	85								$^{\circ}\text{C}/\text{W}$
Operating junction temperature range	T_J	-55 to +125								$^{\circ}\text{C}$
Storage temperature range	T_{STG}	-55 to +150								$^{\circ}\text{C}$

Notes: 1. Measured at 1MHz and applied reverse voltage of 4.0V D.C.

2. P.C.B. mounted with 0.2x0.2”(5.0x5.0mm) copper pad areas

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

Figure 1. Forward Current Derating Curve **Figure 2. Typical Reverse Characteristics**

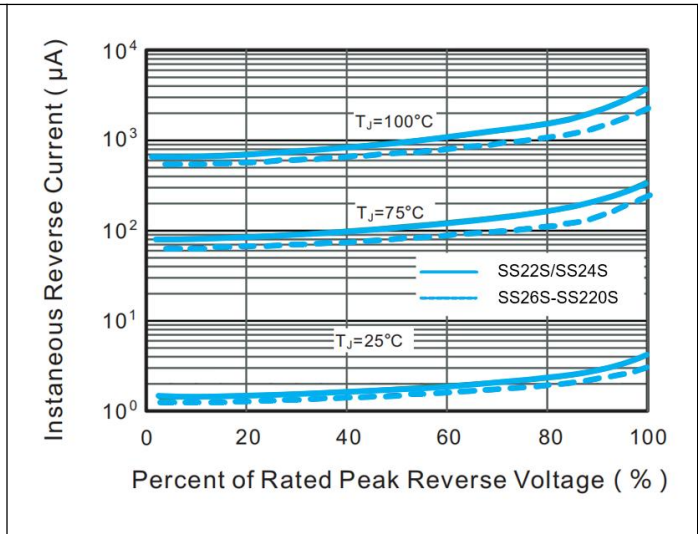
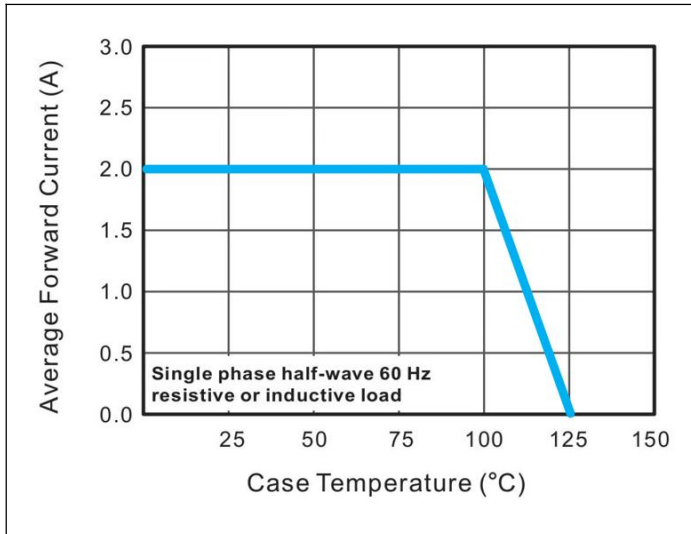


Figure 3. Typical Forward Characteristic **Figure 4. Typical Junction Capacitance**

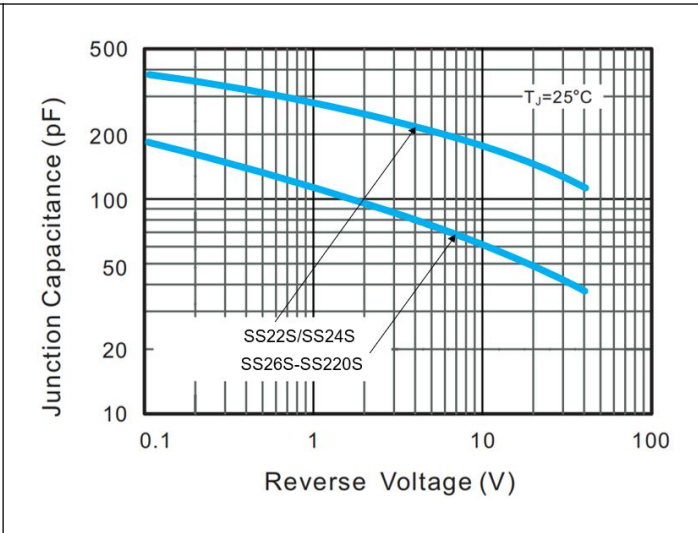
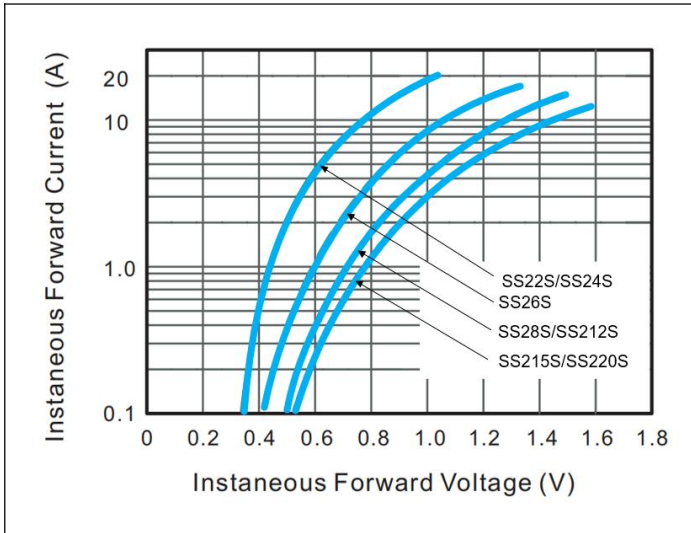
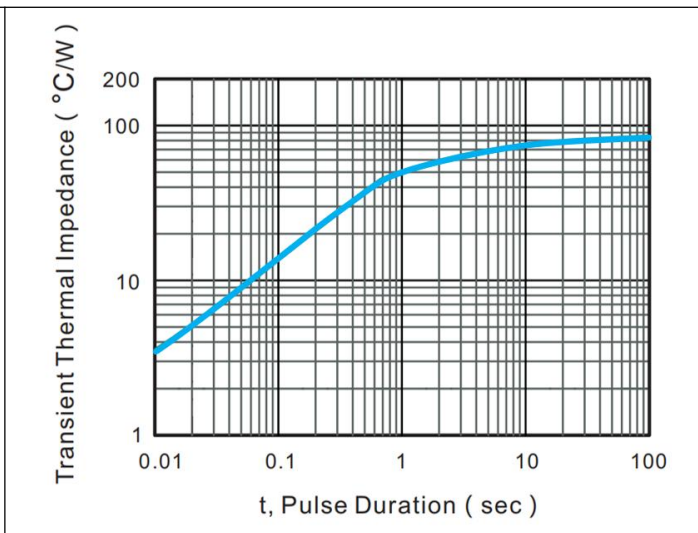
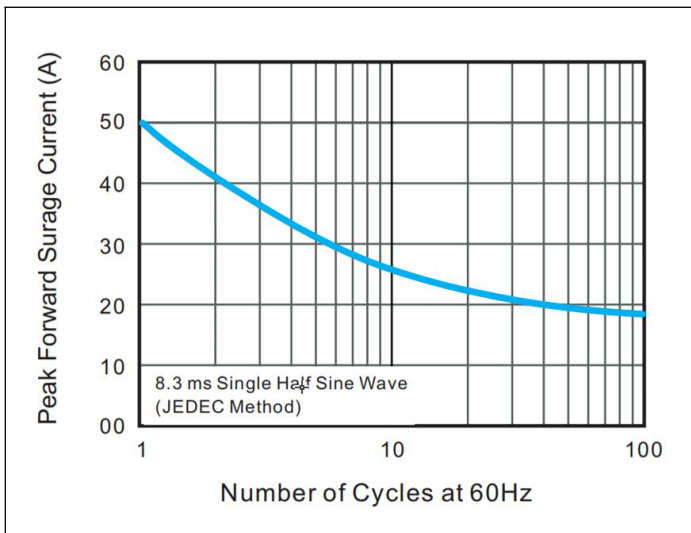
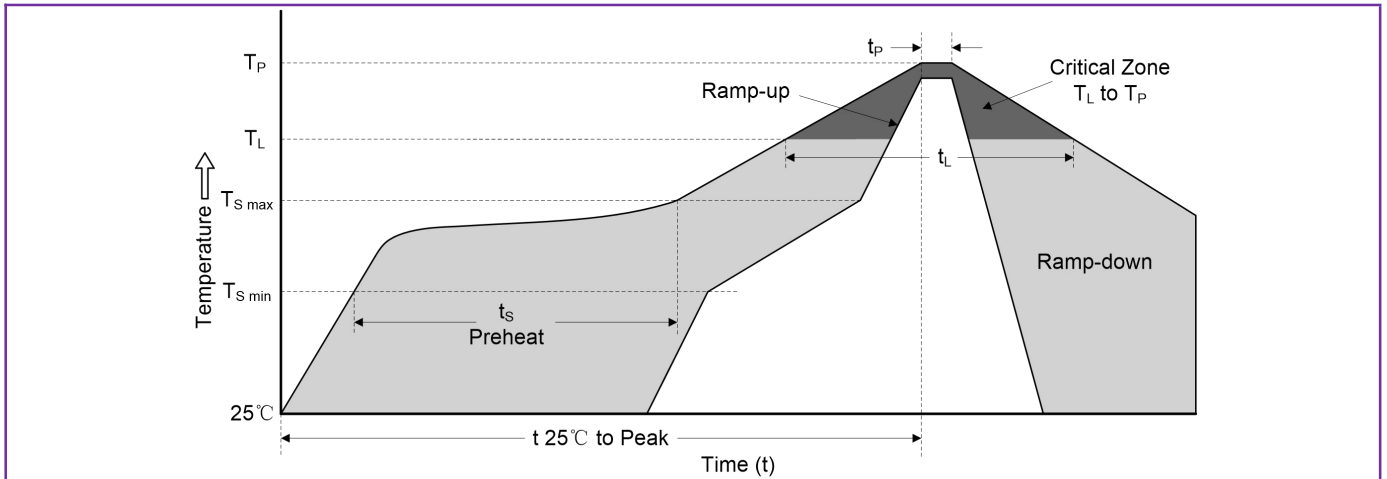


Figure 5. Maximum Non-Repetitive Peak Forward Surge Current **Figure 6. Typical Transient Thermal Impedance**



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)		250(+0/-5)°C
Time within 5°C of actual Peak Temperature (t_p)		10 seconds Max
Ramp-down Rate		6°C/second max.
Time 25°C to Peak Temperature(T_p)		8 minutes max.
Do not exceed		260°C