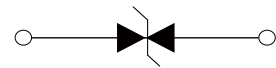


## FEATURES

- | Low profile package
- | Ideal for automated placement
- | 5900 Watt peak pulse power capability with a 8/20 $\mu$ s waveform
- | For surface mounted applications to optimize board space
- | Excellent clamping capability
- | Very fast response time
- | Low incremental surge resistance



SOD-123FL



Schematic Symbol

## APPLICATIONS

- | Power supply protection
- | Automotive application
- | Industrial application
- | Power management

## APPROVALS

<b>RoHS</b>	Compliance with 2011/65/EU
<b>HF</b>	Compliance with IEC61249-2-21:2003

## MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$ )

Parameter	Symbol	Value	Unit
Peak Pulse Power Dissipation on 8/20 $\mu$ s waveform (Note1)	$P_{PPM}$	5900	Watts
Steady State Power Dissipation at $T_L=75^{\circ}\text{C}$	$P_D$	2.8	Watts
ESD Per IEC 61000-4-2 (Air)	$V_{ESD}$	$\pm 30$	kV
ESD Per IEC 61000-4-2 (Contact)	$V_{ESD}$	$\pm 30$	kV

**Notes :** 1. Non-repetitive current pulse,  $T_A=25^{\circ}\text{C}$ .

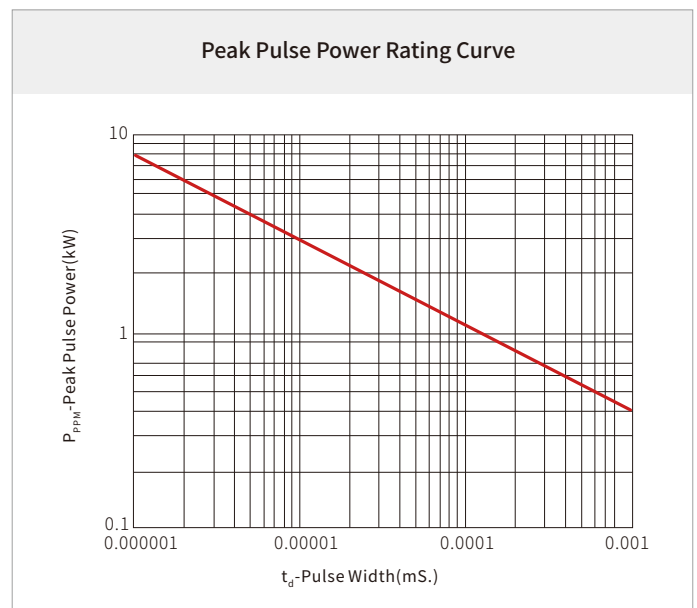
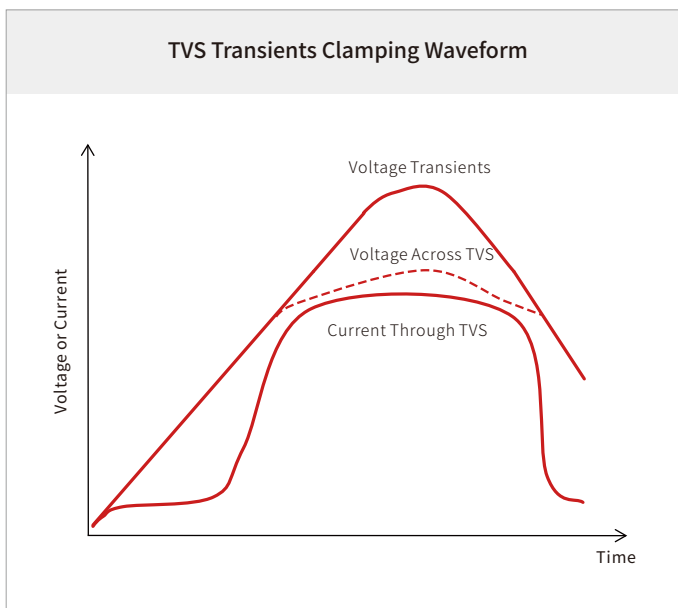
## THERMAL CONSIDERATIONS

Parameter	Symbol	Value	Unit
Operating junction Temperature	$T_J$	-55 to +150	$^{\circ}\text{C}$
Storage Temperature Range	$T_S$	-55 to +150	$^{\circ}\text{C}$
Junction to Ambient on Printed circuit	$R_{\theta JA}$	220	$^{\circ}\text{C}/\text{W}$

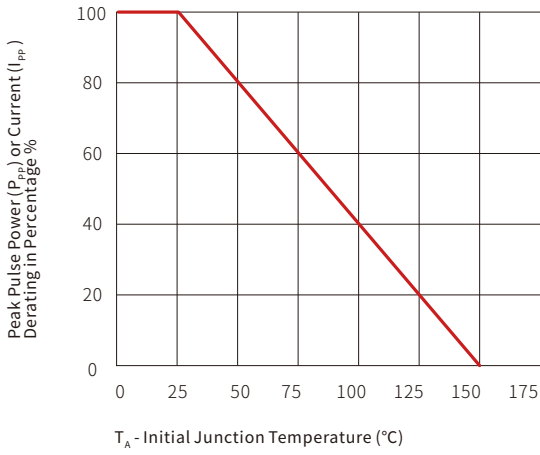
## ELECTRICAL CHARACTERISTICS

Symbol	Parameter	Condition	Min.	Typ.	Max.	Unit
$V_{RWM}$	Reverse Stand-off Voltage				24	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T=1mA$	25			V
$I_R$	Reverse Leakage Current	$V_{RWM}=24V$			1.0	$\mu A$
$V_C$	Clamping Voltage	$I_{PP}=90A, tp=8/20\mu s$			28	V
$V_C$	Clamping Voltage	$I_{PP}=185A, tp=8/20\mu s$			32	V
$I_{PP}$	Peak Pulse Current	$tp=8/20\mu s$			185	A
$C_J$	Off State Junction Capacitance	$V_R=0V, f=1MHz$		300		pF

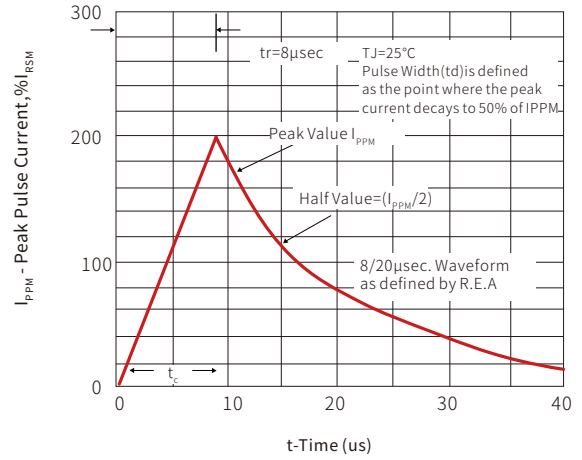
## CHARACTERISTIC CURVES



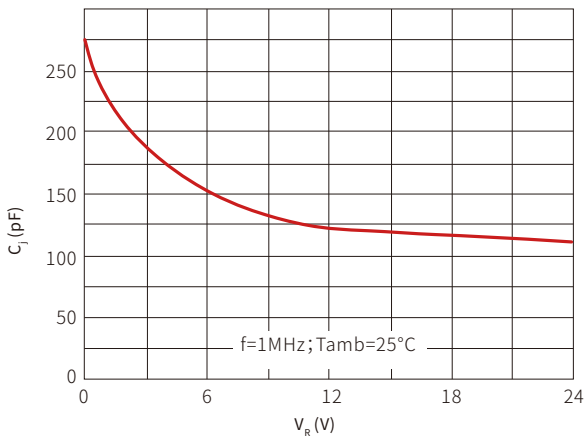
**Pulse Derating Curve**



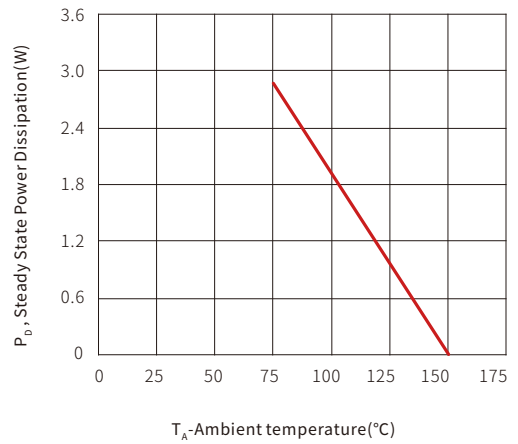
**Pulse Waveform**



**Junction Capacitance vs  $V_R$**

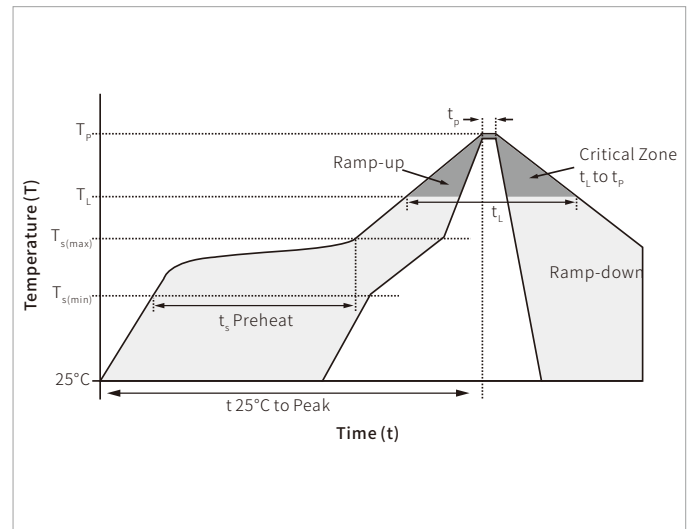


**Steady State Power Dissipation Derating Curve**

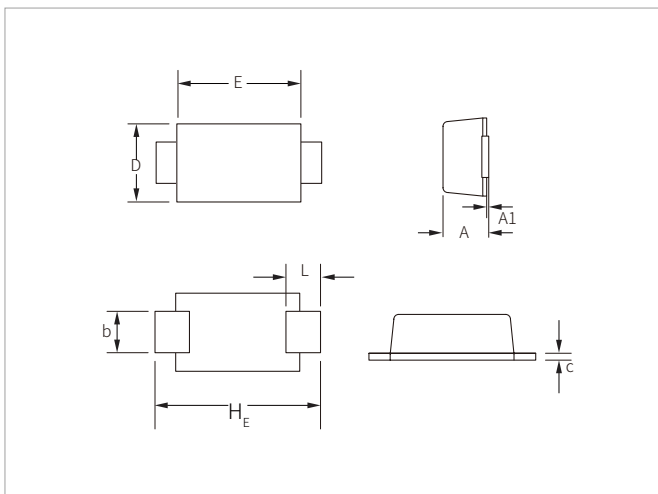


## SOLDERING PARAMETERS

Reflow Condition		Lead-free assembly
Pre Heat	Temperature Max ( $T_{s(min)}$ )	150°C
	Temperature Max ( $T_{s(max)}$ )	200°C
	Time (min to max) ( $t_s$ )	60 – 180 secs
Average ramp up rate (Liquidus Temp ( $T_L$ ) to peak		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) ( $t_l$ )	60 – 150 seconds
Peak Temperature ( $T_p$ )		260°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

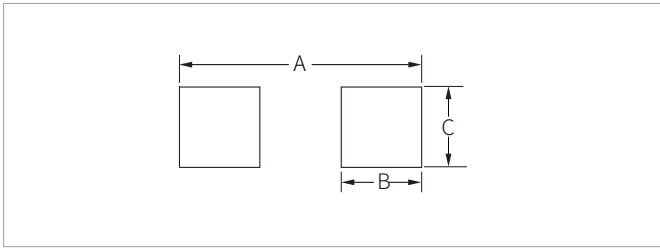


## SOD-123FL PACKAGE INFORMATION



Ref.	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.95	1.45	0.037	0.057
A1	0.00	0.10	0.000	0.004
b	0.70	1.20	0.028	0.047
c	0.05	0.30	0.002	0.012
D	1.50	2.00	0.059	0.079
E	2.50	2.90	0.098	0.114
L	0.35	0.90	0.014	0.035
H <sub>E</sub>	3.40	3.90	0.134	0.154

## RECOMMENDED PAD LAYOUT DIMENSIONS



Ref.	Millimeters	Inches
A	4.20	0.165
B	1.50	0.059
C	1.20	0.047

## ORDERING INFORMATION

Part Number	Component Package	QTY/Reel	Reel Size
SVF600B24	SOD-123FL	3000PCS	7"

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