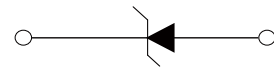


FEATURES

- | Low profile package
- | Ideal for automated placement
- | 200 Watt peak pulse power capability with a 10/1000 μ 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

| | |
|-------------|------------------------------------|
| RoHS | Compliance with 2011/65/EU |
| HF | Compliance with IEC61249-2-21:2003 |

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

| Parameter | Symbol | Value | Unit |
|------------------------------------------------------------------|-----------|-------|-------|
| Peak Pulse Power Dissipation on 10/1000 μ s waveform (Note1) | P_{PPM} | 200 | Watts |
| Steady State Power Dissipation at $T_L=75^{\circ}\text{C}$ | P_D | 0.4 | Watts |

Notes : 1.Non-repetitive current pulse, $T_A=25^{\circ}\text{C}$.
 2.8.3ms single half sine-wave, or equivalent square wave, Duty cycle = 4 pulses per minutes maximum

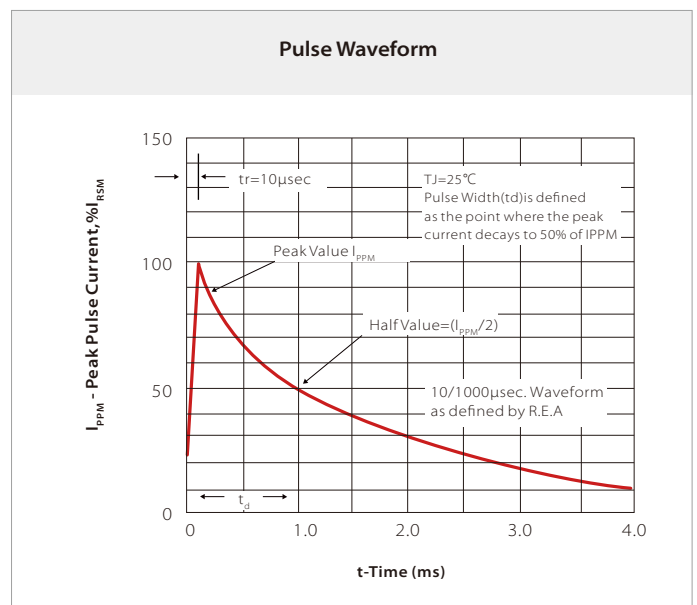
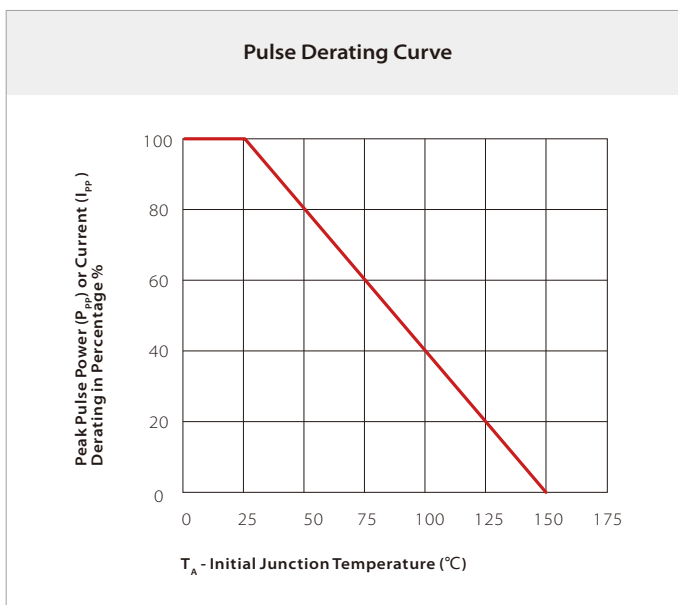
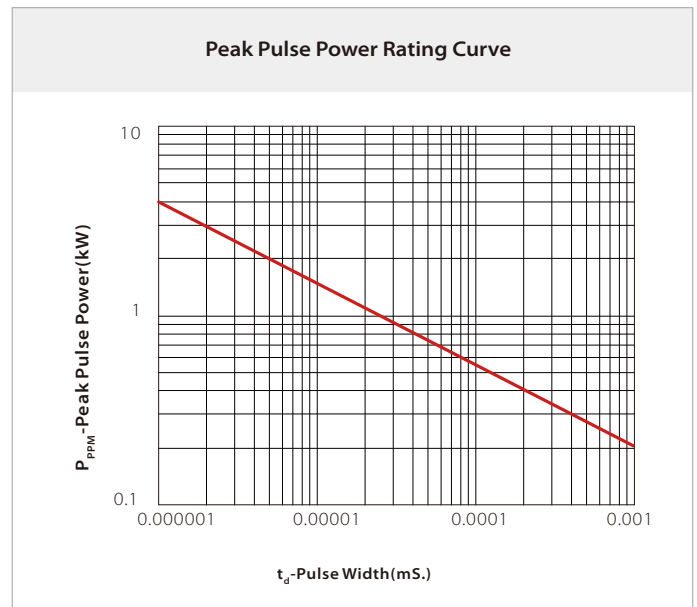
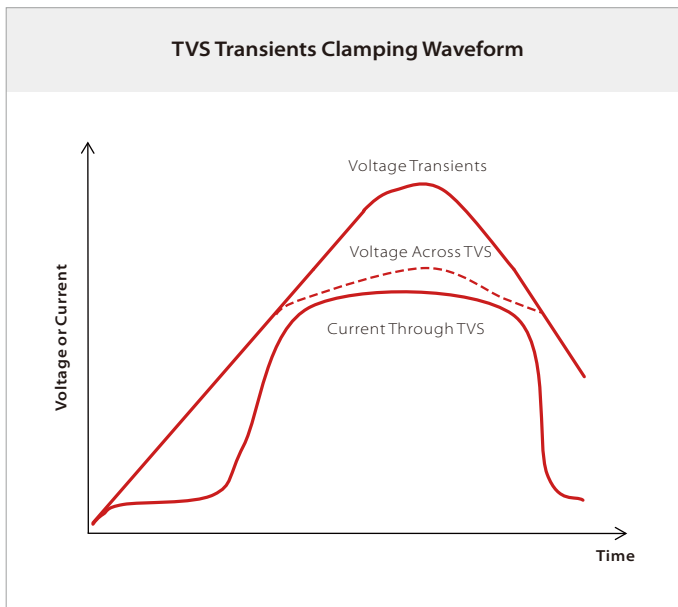
THERMAL CONSIDERATIONS

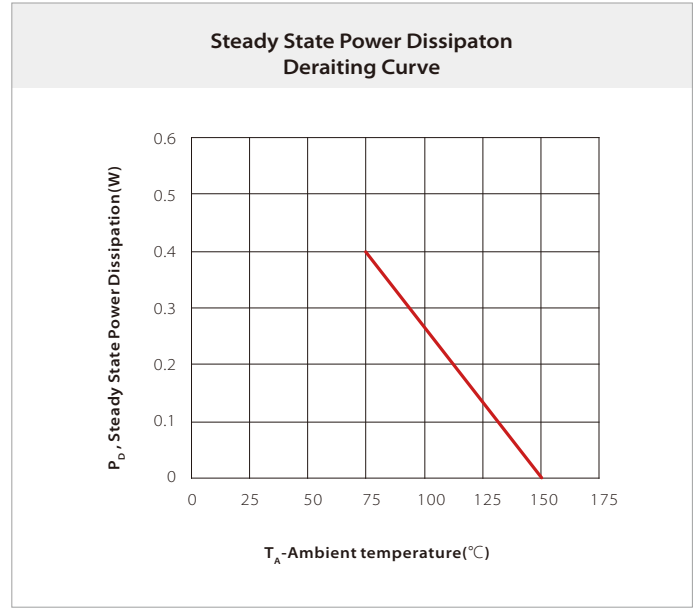
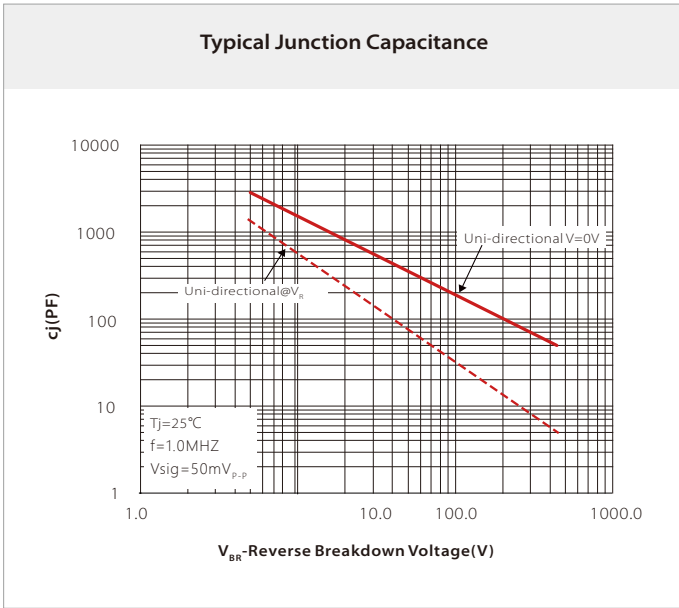
| Parameter | Symbol | Value | Unit |
|----------------------------------------|-----------------|-------------|-----------------------------|
| Operating junction Temperature | T_J | -55 to +150 | $^{\circ}\text{C}$ |
| Storage Temperature Range | T_S | -55 to +150 | $^{\circ}\text{C}$ |
| Junction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

ELECTRICAL CHARACTERISTICS

| Part Number | Device Marking Code | Reverse Stand-off Voltage | Breakdown Voltage Min.@I _T | Breakdown Voltage Max.@I _T | Test Current | Maximum Clamping Voltage @I _{PP} | Maximum Peak Pulse Current | Maximum Reverse Leakage @V _{RWM} |
|-------------|---------------------|---------------------------|---------------------------------------|---------------------------------------|---------------------|-------------------------------------------|----------------------------|-------------------------------------------|
| | | V _{RWM} (V) | V _{BR} (V) | V _{BR} (V) | I _T (mA) | V _C (V) | I _{PP} (A) | I _R (μA) |
| SVF20U33 | CM | 33.0 | 36.7 | 40.6 | 1.0 | 53.3 | 3.8 | 1.0 |

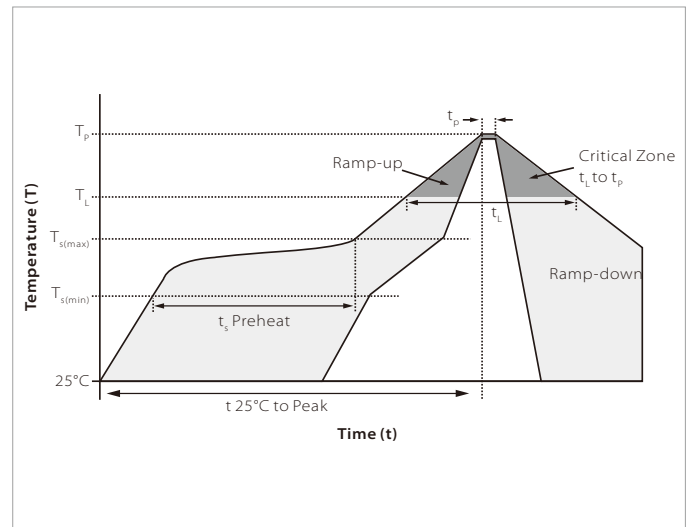
CHARACTERISTIC CURVES



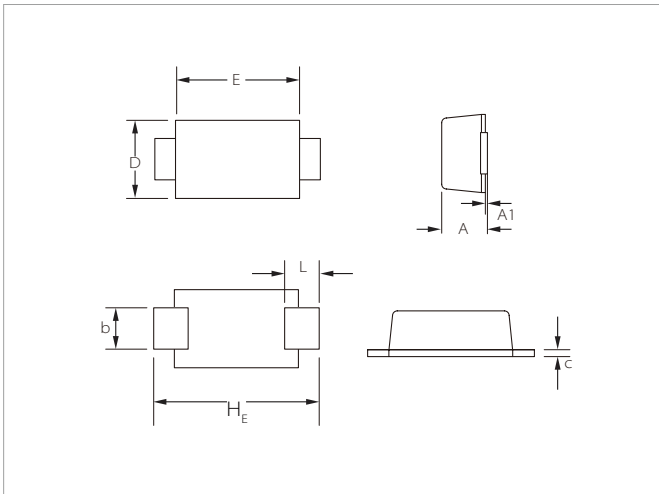


SOLDERING PARAMETERS

| Reflow Condition | | Lead-free assembly |
|---------------------------------------------------------------------|----------------------------------|--------------------------------------|
| Pre Heat | Temperature Max ($T_{s(min)}$) | 150 $^\circ\text{C}$ |
| | Temperature Max ($T_{s(max)}$) | 200 $^\circ\text{C}$ |
| | Time (min to max) (t_s) | 60 – 180 secs |
| Average ramp up rate (Liquidus Temp (T_L) to peak) | | 3 $^\circ\text{C}/\text{second}$ max |
| $T_{s(max)}$ to T_L - Ramp-up Rate | | 3 $^\circ\text{C}/\text{second}$ max |
| Reflow | Temperature (T_L) (Liquidus) | 217 $^\circ\text{C}$ |
| | Time (min to max) (t_r) | 60 – 150 seconds |
| Peak Temperature (T_p) | | 260 $^\circ\text{C}$ |
| Time within 5 $^\circ\text{C}$ of actual peak Temperature (t_p) | | 20 – 40 seconds |
| Ramp-down Rate | | 6 $^\circ\text{C}/\text{second}$ max |
| Time 25 $^\circ\text{C}$ to peak Temperature (T_p) | | 8 minutes max. |
| Do not exceed | | 260 $^\circ\text{C}$ |

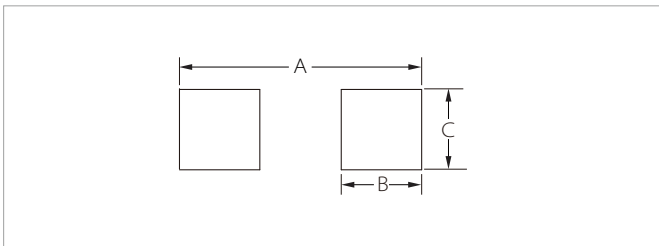


SOD-123FL PACKAGE INFORMATION



| 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 _E | 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 |
|-------------|-------------------|----------|-----------|
| SVF20U33 | SOD-123FL | 3000PCS | 7" |

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