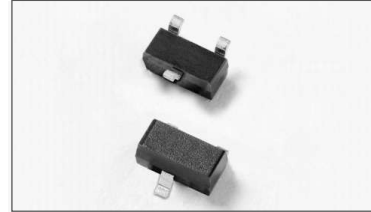


Features

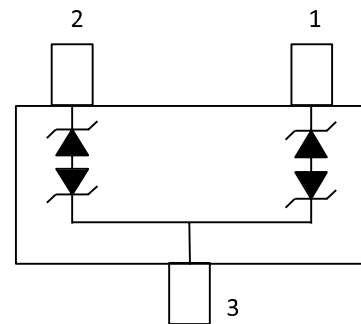
- RoHS compliant and lead-free
- ESD, IEC 61000-4-2, $\pm 24\text{kV}$ contact, $\pm 30\text{kV}$ air
- EFT, IEC 61000-4-4, 50A (5/50ns)
- Lightning, IEC 61000-4-5, 2nd Edition, 5A ($t_p=8/20\mu\text{s}$)
- Low clamping voltage
- Low leakage current
- AEC-Q101 qualified
- Moisture Sensitivity Level (MSL-1)



Applications

- Automotive Applications
- CAN Bus
- Electronic Control Units
- Body Control Units
- ADAS Control Units
- PowerTrain Control Units
- Factory Automation
- Lightning Control (DALI)

Pinout and Functional Block Diagram



Absolute Maximum Ratings

Symbol	Parameter	Value	Units
P_{PK}	Peak Pulse Power ($t_p=8/20\mu\text{s}$)	300	W
I_{PP}	Peak Pulse Current ($t_p=8/20\mu\text{s}$)	5.0	A
T_{OP}	Operating Temperature	-40 to 125	$^{\circ}\text{C}$
T_{STOR}	Storage Temperature	-55 to 150	$^{\circ}\text{C}$

Notes:

CAUTION: Stresses above those listed in "Absolute Maximum Ratings" may cause permanent damage to the component. This is a stress only rating and operation of the component at these or any other conditions above those indicated in the operational sections of this specification is not implied.

Electrical Characteristics (T_{OP}=25°C)

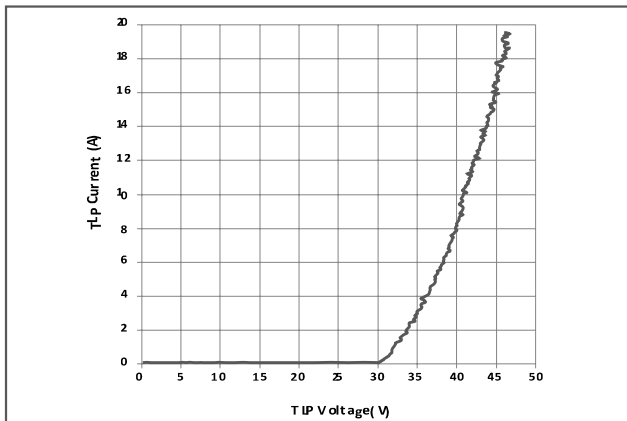
Parameter	Symbol	Test Conditions	Min	Typ	Max	Units
Reverse Standoff Voltage	V _{RWM}	I _R ≤ 1 μA, Pin 1 or Pin 2 to Pin 3			24.0	V
Reverse Breakdown Voltage	V _{BR}	I _R = 1 mA, Pin 1 or Pin 2 to Pin 3	26.7			V
Leakage Current	LEAK	V _R = 24V			1.0	μA
Clamp Voltage ¹	V _C	I _{PP} = 1A, t _p = 8/20 μs, Pin 1 or Pin 2 to Pin 3			36.0	V
		I _{PP} = 5A, t _p = 8/20 μs, Pin 1 or Pin 2 to Pin 3			50.0	V
Dynamic Resistance ²	R _{DYN}	TLP, t _p = 100ns, I/O to GND		0.7		Ω
ESD Withstand Voltage ¹	V _{ESD}	IEC 61000-4-2 (Contact Discharge)	±24			kV
		IEC 61000-4-2 (Air Discharge)	±30			kV
Diode Capacitance ¹	C _{I/O-GND}	Reverse Bias = 0V, f = 1MHz; Pin 1 or Pin 2 to Pin 3		11	17	pF

Note:

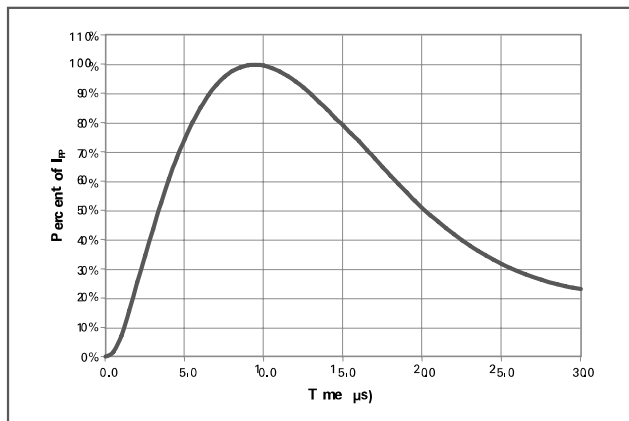
¹ Parameter is guaranteed by design and/or component characterization.

² Transmission Line Pulse (TLP) with 100ns width and 200ps rise time.

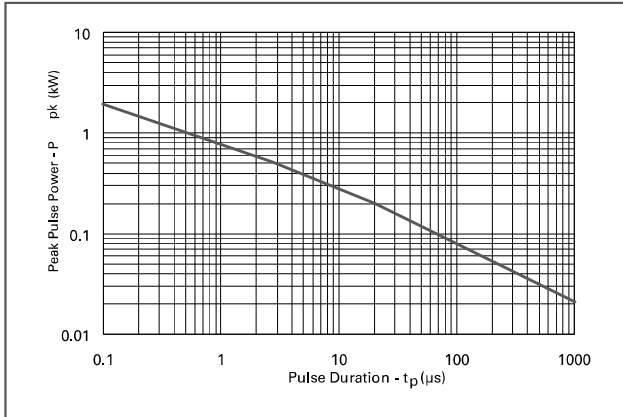
Transmission Line Pulsing (TLP) Plot



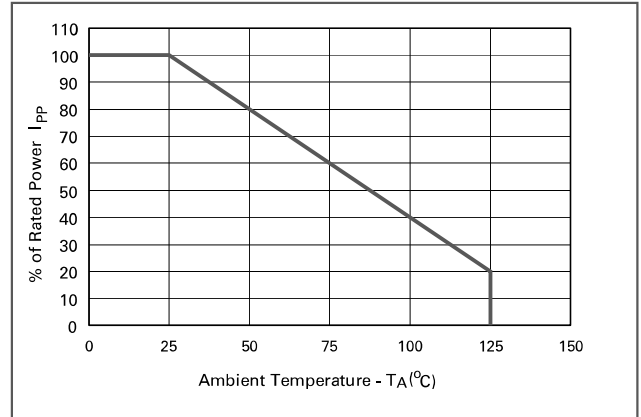
Pulse Waveform



Non-Repetitive Peak Pulse Power vs. Pulse Time

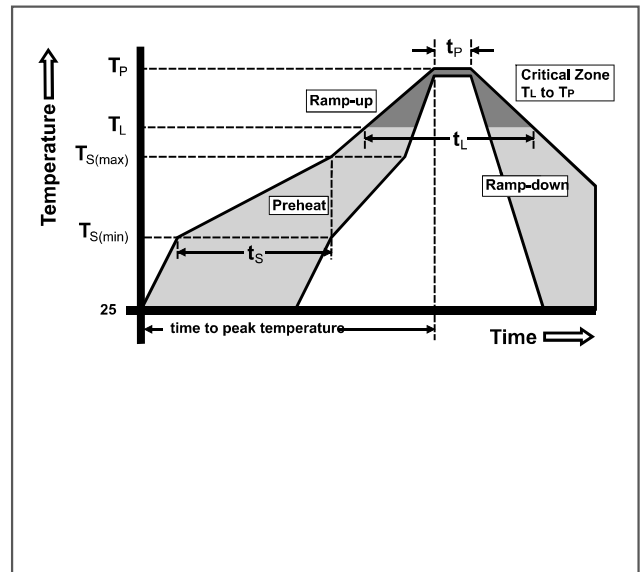


Power Derating Curve

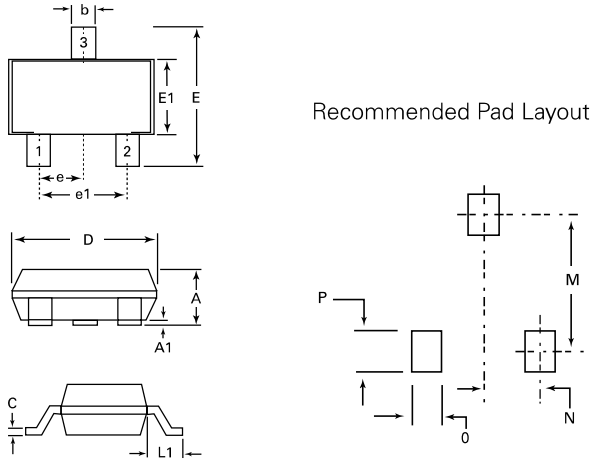


Soldering Parameters

Reflow Condition		Pb – 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 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
	- Temperature (t_L)	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

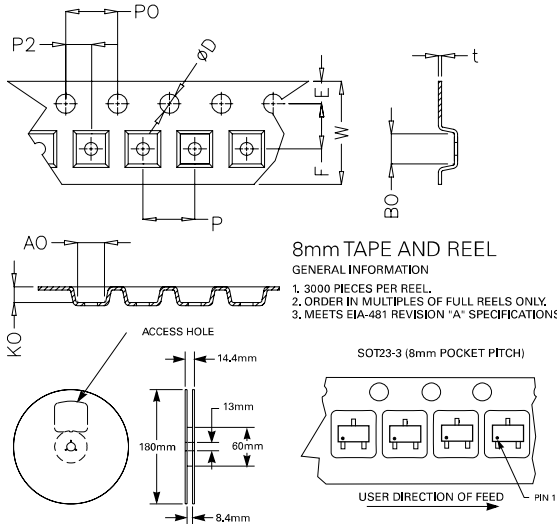


Package Dimensions — SOT23-3



Package	SOT23-3			
Pins	3			
JEDEC				
	Millimeters		Inches	
	Min	Max	Min	Max
A	0.89	1.12	0.035	0.044
A1	0.01	0.10	0.0004	0.004
b	0.30	0.50	0.012	0.020
c	0.08	0.2	0.003	0.008
D	2.80	3.04	0.110	0.120
E	2.10	2.64	0.083	0.104
E1	1.20	1.40	0.047	0.055
e	0.95 BSC		0.038 BSC	
e1	1.90 BSC		0.075 BSC	
L1	0.54 REF		0.021 REF	
M		2.29		0.090
N		0.95		0.038
O		0.78		0.030TYP
P		0.78		0.030TYP

Embossed Carrier Tape & Reel Specification — SOT23-3



Symbol	Millimetres		Inches	
	Min	Max	Min	Max
E	1.65	1.85	0.065	0.073
F	3.40	3.60	0.134	0.142
P2	1.90	2.10	0.075	0.083
D	1.40	1.60	0.055	0.063
P0	3.90	4.10	0.154	0.161
W	7.70	8.30	0.303	0.327
P	3.90	4.10	0.154	0.161
A0	3.05	3.25	0.120	0.128
B0	2.67	2.87	0.105	0.113
K0	1.12	1.32	0.044	0.052
t	0.22	0.24	0.009	0.009