

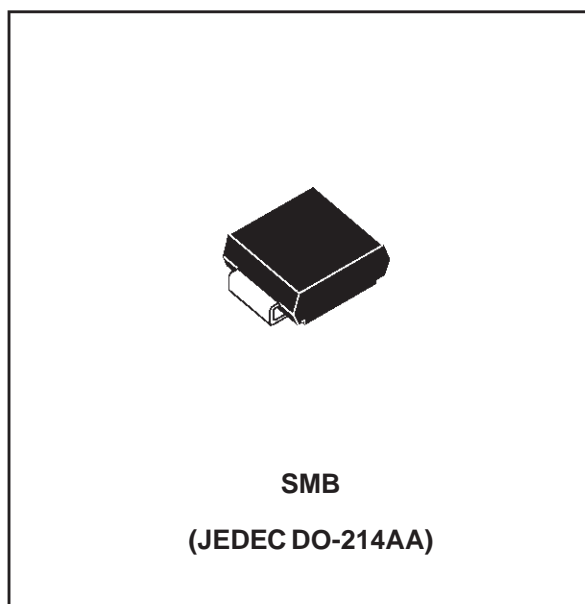
**LOW VOLTAGE TRANSIL™**
**FEATURES**

- UNIDIRECTIONAL TRANSIL DIODE
- PEAK PULSE POWER : 600 W (10/1000 $\mu$ s)
- REVERSE STAND-OFF VOLTAGE = 3.3 V
- LOW CLAMPING FACTOR
- FAST RESPONSE TIME
- UL RECOGNIZED

**DESCRIPTION**

The SMLVT3V3 is a Transil diode designed specifically for protecting 3.3V supplied sensitive equipment against transient overvoltages.

Transil diodes provide high overvoltage protection by clamping action. Their instantaneous response to transient overvoltages makes them particularly suited to protect voltage sensitive devices such as MOS technology and low voltage supply IC's.


**ABSOLUTE MAXIMUM RATINGS** ( $T_{amb} = 25^{\circ}\text{C}$ )

Symbol	Parameter		Value	Unit
$P_{PP}$	Peak pulse power dissipation (see note 1)	$T_j \text{ initial} = T_{amb}$	600	W
$P$	Power dissipation on infinite heatsink	$T_{amb} = 75^{\circ}\text{C}$	5	W
$I_{FSM}$	Non repetitive surge peak forward current	$t_p = 10 \text{ ms}$ $T_j \text{ initial} = T_{amb}$	50	A
$T_{stg}$ $T_j$	Storage temperature range Maximum junction temperature		- 65 to + 175 175	$^{\circ}\text{C}$ $^{\circ}\text{C}$
$T_L$	Maximum lead temperature for soldering during 10 s		260	$^{\circ}\text{C}$

**Note 1 :** For a surge greater than the maximum values, the diode will fail in short-circuit.

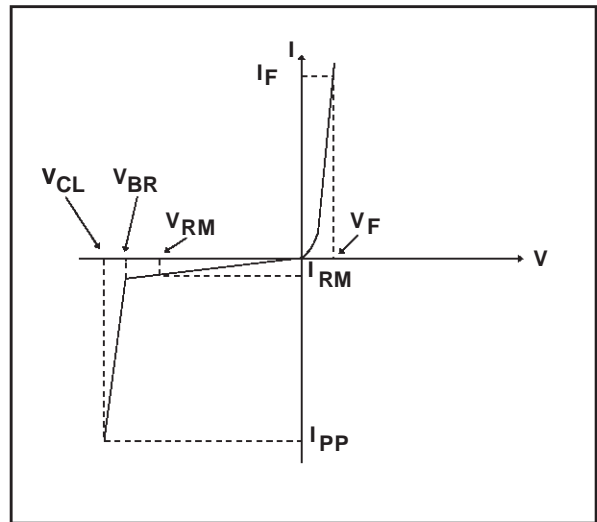
**THERMAL RESISTANCE**

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to leads	20	$^{\circ}\text{C/W}$
$R_{th(j-a)}$	Junction to ambient on printed circuit on recommended pad layout	100	$^{\circ}\text{C/W}$

# SMLVT3V3

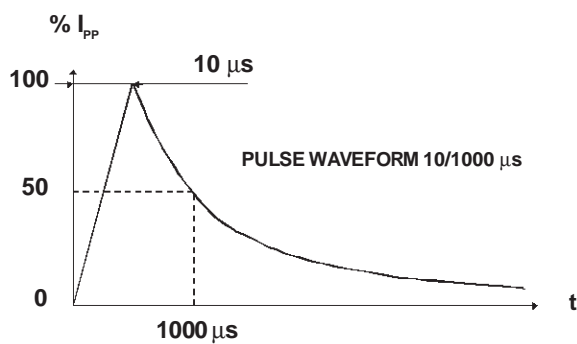
## ELECTRICAL CHARACTERISTICS (T<sub>amb</sub> = 25°C)

Symbol	Parameter
V <sub>RM</sub>	Stand-off voltage.
V <sub>BR</sub>	Breakdown voltage.
V <sub>CL</sub>	Clamping voltage.
I <sub>RM</sub>	Leakage current @ V <sub>RM</sub> .
I <sub>PP</sub>	Peak pulse current.
α <sub>T</sub>	Voltage temperature coefficient
V <sub>F</sub>	Forward voltage drop



Type	I <sub>RM</sub> @ V <sub>RM</sub>		V <sub>BR</sub> @ I <sub>R</sub>		V <sub>CL</sub> @ I <sub>PP</sub>		V <sub>CL</sub> @ I <sub>PP</sub>		α <sub>T</sub>	C		
	max		min	note 2	max	10/1000 μs	max	8/20 μs	max	note 3	max	note 4
	μA	V	V	mA	V	A	V	A	10 <sup>-4</sup> /°C		pF	
SMLVT3V3	200	3.3	4.1	1	7.3	50	10.3	200	-5.3		5200	

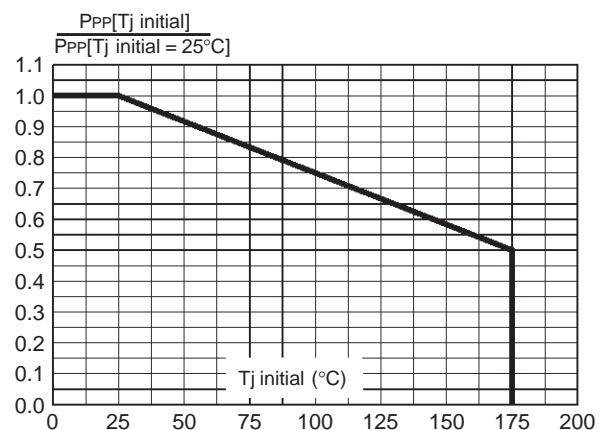
**Fig. 1** : Peak pulse power dissipation versus initial junction temperature (printed circuit board).



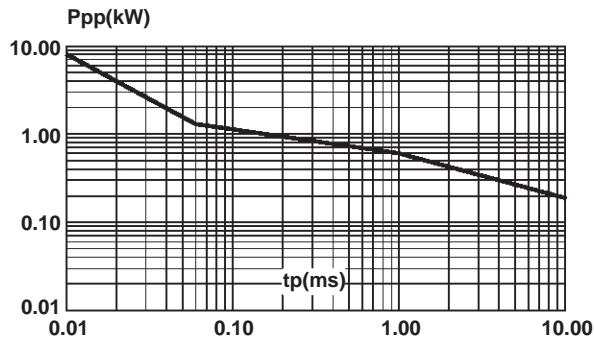
**Note 2** : Pulse test : t<sub>p</sub> < 50 ms

**Note 3** : ΔV<sub>BR</sub> = α<sub>T</sub> \* (T<sub>amb</sub> - 25) \* V<sub>BR</sub>(25°C).

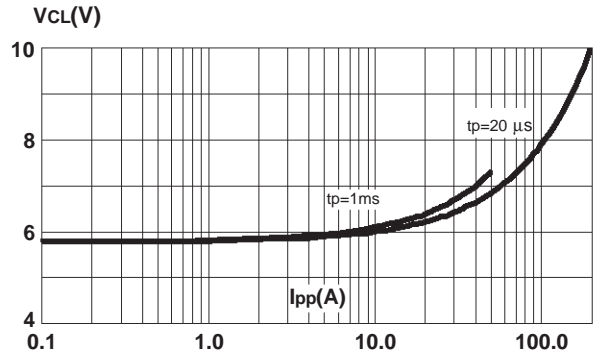
**Note 4** : V<sub>R</sub> = 0V, F = 1MHz.



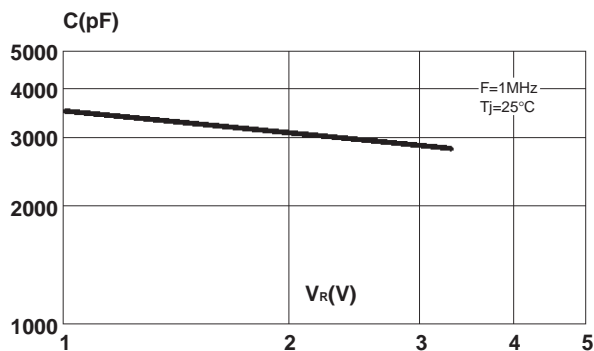
**Fig. 2 :** Peak pulse power versus exponential pulse duration ( $T_j$  initial = 25°C).



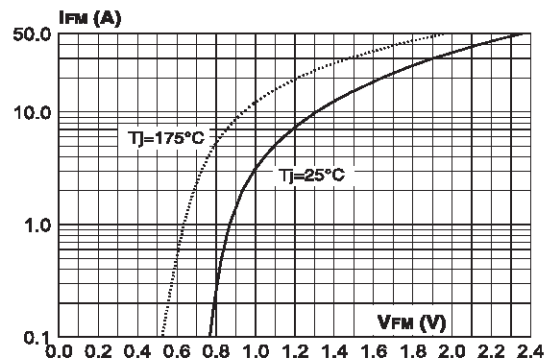
**Fig. 3 :** Clamping voltage versus peak pulse current ( $T_j$  initial = 25°C). Exponential waveform  $t_p = 20 \mu s$  and  $t_p = 1 ms$ .



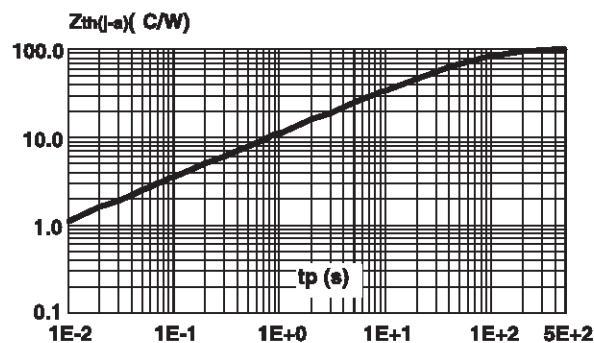
**Fig. 4 :** Capacitance versus reverse applied voltage (typical values).



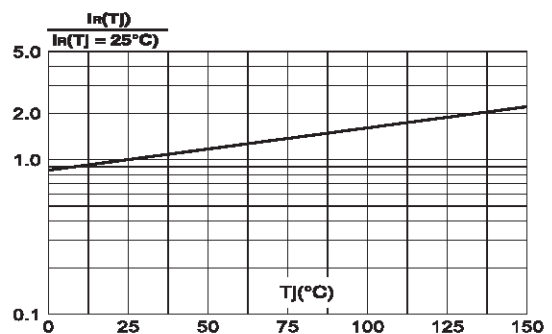
**Fig. 5 :** Peak forward voltage drop versus peak forward current (typical values).



**Fig. 6 :** Transient thermal impedance junction ambient versus pulse duration. Mounting on FR4 PC Board with Recommended pad layout.

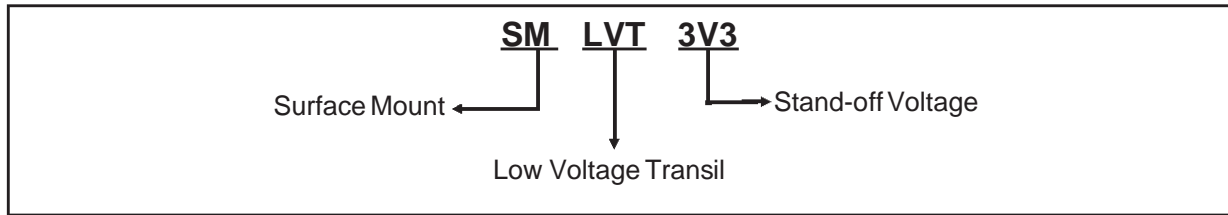


**Fig. 7 :** Relative variation of leakage current versus junction temperature.



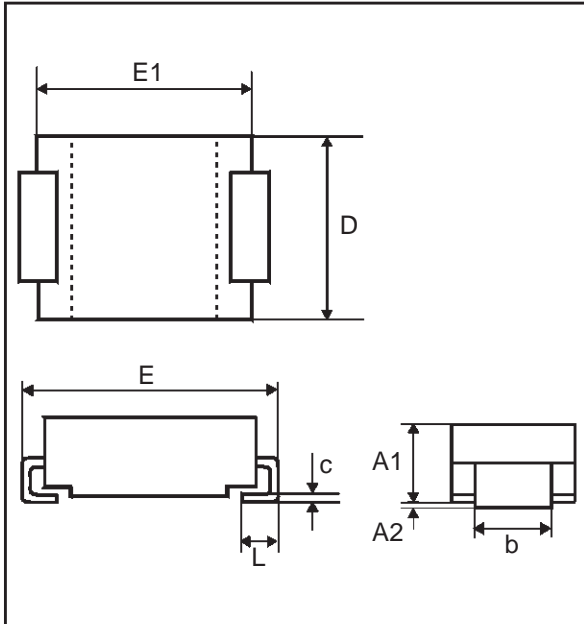
# SMLVT3V3

## ORDER CODE



## PACKAGE MECHANICAL DATA

SMB (Plastic) - Jedec DO-214AA



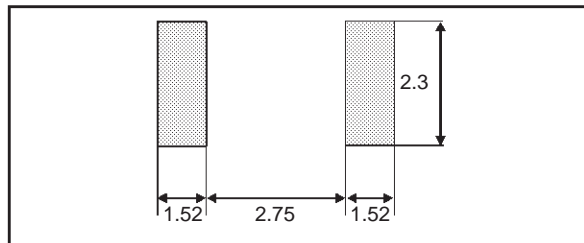
REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A1	1.90	2.15	2.45	0.075	0.085	0.096
A2	0.05	0.15	0.20	0.002	0.006	0.008
b	1.95		2.20	0.077		0.087
c	0.15		0.41	0.006		0.016
E	5.10	5.40	5.60	0.201	0.213	0.220
E1	4.05	4.30	4.60	0.159	0.169	0.181
D	3.30	3.60	3.95	0.130	0.142	0.156
L	0.75	1.15	1.60	0.030	0.045	0.063

**Marking:** Logo, data code, type code and cathodband

**Weight** = 0.12 g

## FOOTPRINT DIMENSIONS (Millimeter)

SMB Plastic.



**Packaging:** standard packaging is in tape and reel.

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