

SMLVT3V3

Low voltage Transil™

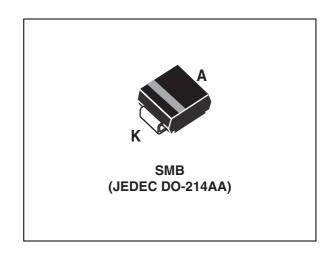
Features

- Peak pulse power 600 W (10/1000 µs)
- Stand off voltage 3.3 V
- Unidirectional type
- Low clamping factor
- Fast response time
- JEDEC registered package outline

Description

The SMLVT3V3 is a Transil diode designed specifically to protect sensitive 3.3 V equipment against transient overvoltages.

Transil diodes provide high overvoltage protection by clamping action. Their instantaneous response to transient overvoltages make them particularly suited to protect voltage sensitive devices such as MOS technology and low voltage supplied ICs



Order code

Part number	Marking		
SMLVT3V3	CD		

Table 1. Absolute maximum ratings $(T_{amb} = 25^{\circ} C)$

Symbol	Parameter		Value	Unit
P _{PP}	Peak pulse power dissipation (1)	600	W	
Р	Power dissipation on infinite heatsink	6	W	
I _{FSM}	Non repetitive surge peak forward current for unidirectional types		100	А
T _{stg}	Storage temperature range	-65 to +175	° C	
Tj	Maximum junction temperature	+175	° C	
T _L	Maximum lead temperature for soldering during 10 s.	260	° C	

^{1.} For a surge greater than the maximum values, the diode will fail in short-circuit.

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Characteristics SMLVT3V3

1 Characteristics

Table 2. Thermal resistances

Symbol	Parameter	Value	Unit
R _{th(j-l)}	Junction to leads	20	° C/W
R _{th(j-a)}	Junction to ambient on printed circuit on recommended pad layout	100	° C/W

Symbol	Parameter	11 ,
V _{RM}	Stand-off voltage	<u></u>
V _{BR}	Breakdown voltage	<u> </u>
V _{CL}	Clamping voltage	
I _{RM}	Leakage current @ VRM	V _{CL} V _{BR} V _{RM} V _F V
I _{PP}	Peak pulse current	i _R
αΤ	Voltage temperature coefficient	
V _F	Forward voltage drop	I _{pp}
R_D	Dynamic impedance	

	I _{RM} @V _{RM}		V _{BR} @I _R ⁽¹⁾		V _{CL} @I _{PP} 10/1000 μs		V _{CL} @Ι _{ΡΡ} 8/20 μs		α T ⁽²⁾	C ₍₃₎
Туре	Max		Min		Max		Max		Max	Тур.
	μΑ	٧	٧	mA	V	Α	٧	Α	10-4/° C	pF
SMLVT3V3	200	3.3	4.1	1	7.3	50	10.3	200	-5.3	5200

- 1. Pulse test : $t_p < 50 \text{ ms}$
- 2. $V_{BR} = \alpha T x (T_{amb} -25) x V_{BR (25^{\circ}C)}$
- 3. VR = 0 V, F = 1 MHz

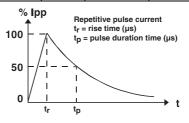
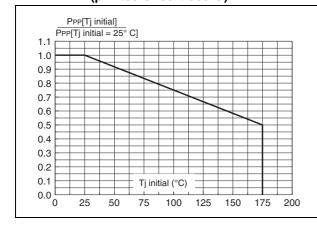
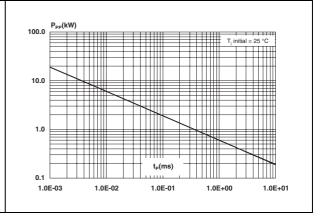


Figure 1. Peak pulse power dissipation versus initial junction temperature (printed circuit board)

Figure 2. Peak pulse power versus exponential pulse duration





SMLVT3V3 Characteristics

Figure 3. Clamping voltage versus peak pulse Figure 4. Junction capacitance versus current (exponential waveform, reverse applied voltage maximum values) (typical values)

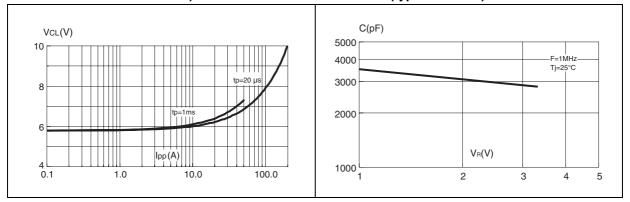


Figure 5. Peak forward voltage drop versus peak forward current (typical values)

Figure 6. Transient thermal impedance, junction to ambient, versus pulse duration (PCB - FR4, with recommended pad layout)

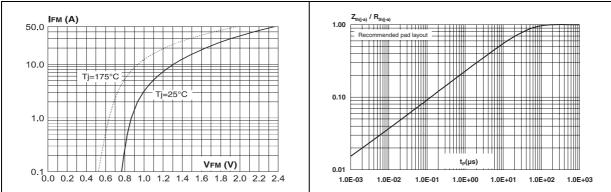
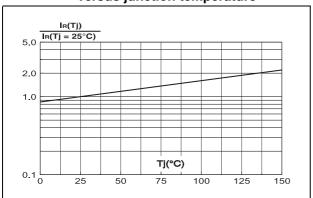
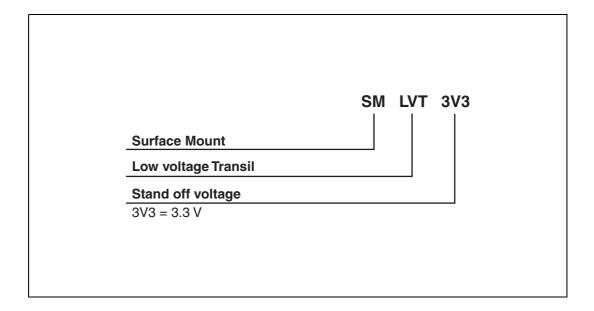


Figure 7. Relative variation of leakage current versus junction temperature



2 Order information scheme



Package information SMLVT3V3

3 Package information

- Case: JEDEC DO-214AA molded plastic over Planar junction
- Epoxy is rated UL94V-0
- RoHS compliant package

Table 3. SMB Dimensions

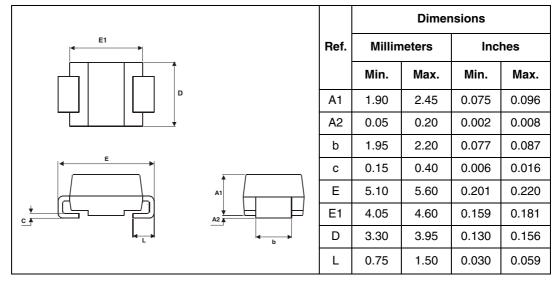
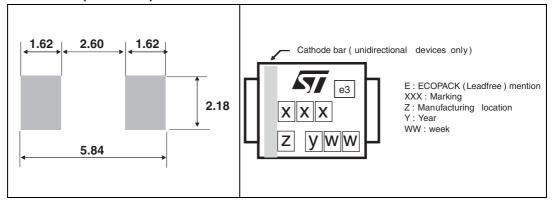


Figure 8. Footprint dimensions (millimeter)

Figure 9. Marking layout



In order to meet environmental requirements, ST offers these devices in ECOPACK® packages. These packages have a Lead-free second level interconnect . The category of second level interconnect is marked on the package and on the inner box label, in compliance with JEDEC Standard JESD97. The maximum ratings related to soldering conditions are also marked on the inner box label. ECOPACK is an ST trademark. ECOPACK specifications are available at: www.st.com.

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Ordering information SMLVT3V3

4 Ordering information

Part number	Marking	Package	Weight	Base qty	Delivery mode
SMLVT3V3	CD	SMB	0.12 g	2500	Tape and reel

5 Revision history

Table 4. Document revision history

Date	Revision	Changes
Aug-2001	2	Previous issue
25-Apr-2007	3	Reformatted to current standards. Added cathode bar marker in cover page graphics and <i>Figure 9</i> .

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