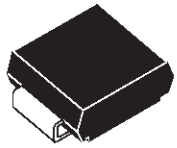
SGS-THOMSON MICROELECTRONICS

SMLVT3V3

LOW VOLTAGE TRANSIL™

FEATURES

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



SMB

(JEDEC DO-214AA)

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 then particularly suited to protect voltage sensitive devices surb as MOS technology and low voltage supply IC's.

ABSOLUTE MAXIMUM RATINGS (T_{amb} = 25°C)

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

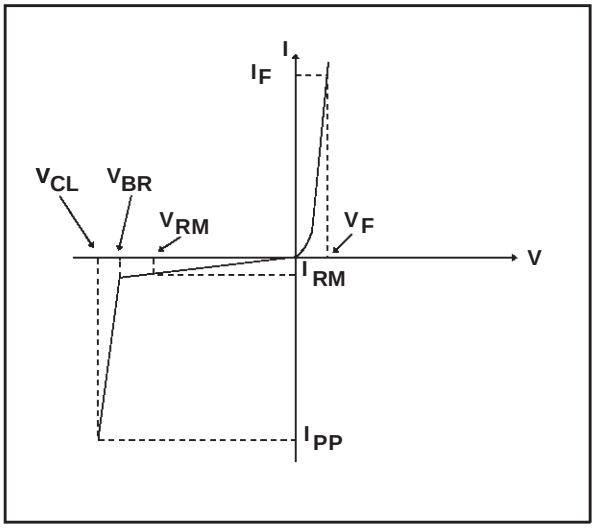
Note 1 : For a surge greater than the maximum values, the diode will fail in short-circuit.

THERMAL RESISTANCE

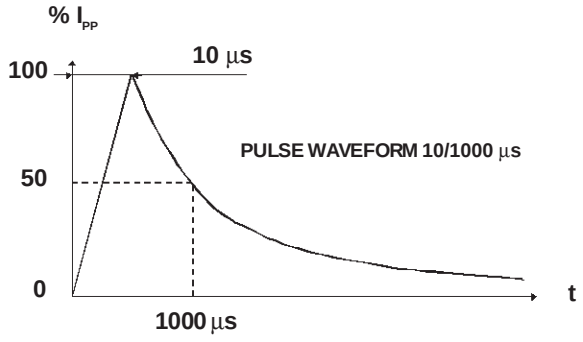
Symbol	Parameter	Value	Unit
$R_{th\ (j-l)}$	Junction to leads	20	°C/W
$R_{th\ (j-a)}$	Junction to ambient on printed circuit on recommended pad layout	100	°C/W

ELECTRICAL CHARACTERISTICS (T_{amb} = 25°C)

Symbol	Parameter
V_{RM}	Stand-off voltage.
V_{BR}	Breakdown voltage.
V_{CL}	Clamping voltage.
I_{RM}	Leakage current @ V_{RM}.
I_{PP}	Peak pulse current.
αT	Voltage temperature coefficient
V_F	Forward voltage drop



Type	I_{RM} @ V_{RM} max		V_{BR} @ I_R min note 2		V_{CL} @ I_{PP} max 10/1000 µs		V_{CL} @ I_{PP} max 8/20 µs		αT max note 3	C max note 4
	µA	V	V	mA	V	A	V	A	10^{-4}/°C	pF
SMLVT3V3	200	3.3	4.1	1	7.3	50	10.3	200	-5.3	5200



Note 2 : Pulse test : t_p < 50 ms
Note 3 : $\Delta V_{BR} = \alpha T * (T_{amb} - 25) * V_{BR(25°C)}$.
Note 4 : V_R = 0V , F = 1MHz.

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

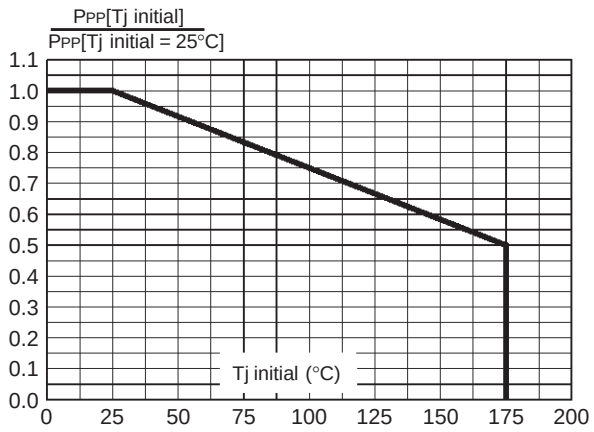


Fig. 2 : Peak pulse power versus exponential pulse duration (Tj initial = 25°C).

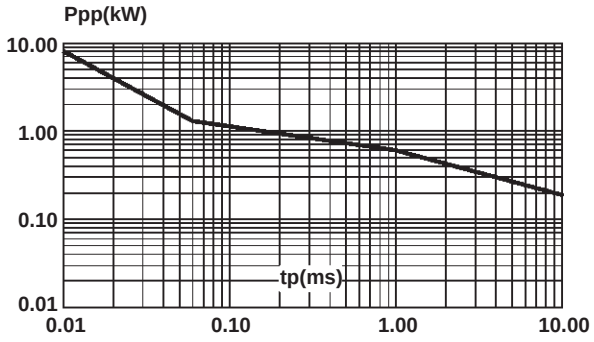


Fig. 3 : Clamping voltage versus peak pulse current (Tj initial = 25°C).
Exponential waveform t_p = 20 µs and t_p = 1 ms.

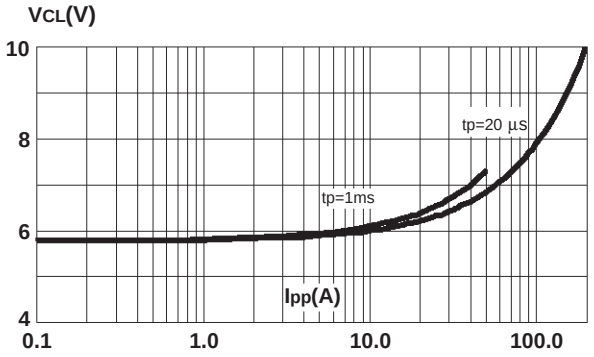


Fig. 4 : Capacitance versus reverse applied voltage (typical values).

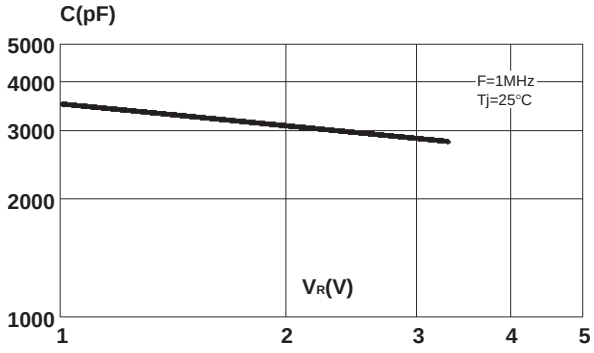


Fig. 5 : Peak forward voltage drop versus peak forward current (typical values).

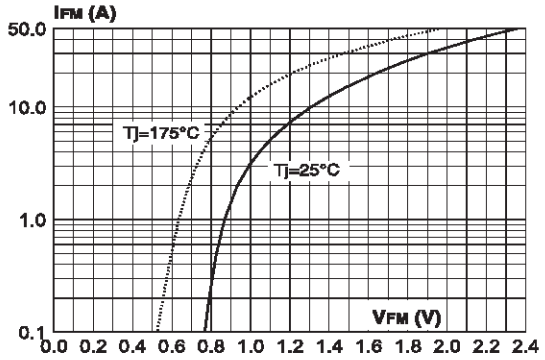


Fig. 6 : Transient thermal impedance junction ambient versus pulse duration.
Mounting on FR4 PC Board with Recommended pad layout.

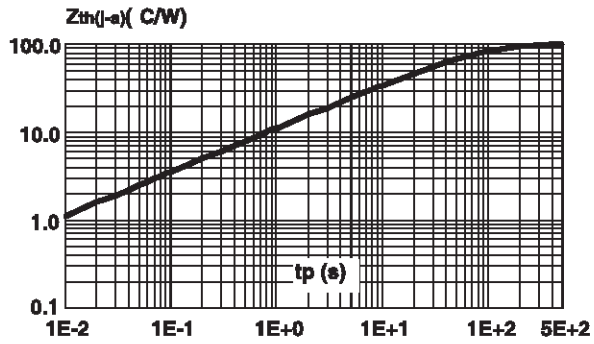
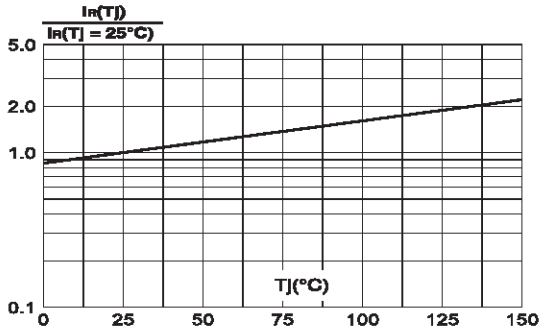
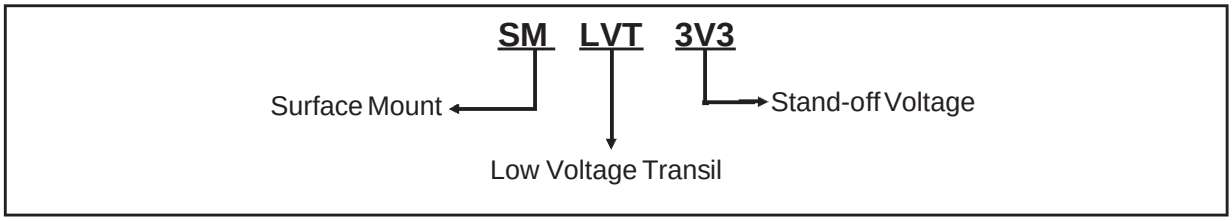


Fig. 7 : Relative variation of leakage current versus junction temperature.



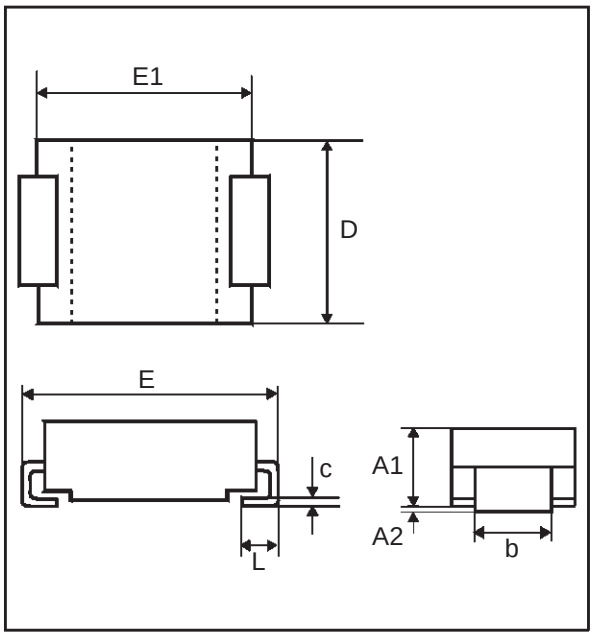
SMLVT3V3

ORDER CODE



PACKAGE MECHANICAL DATA

SMB (Plastic) - Jedec DO-214AA



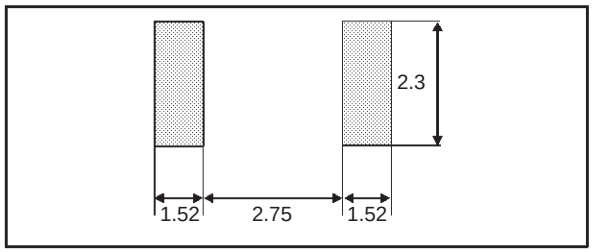
REF.	DIMENSIONS					
	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A1	1.90	2.15	2.45	0.075	0.085	0.096
A2	0.05	0.15	0.20	0.002	0.006	0.008
b	1.95		2.20	0.077		0.087
c	0.15		0.41	0.006		0.016
E	5.10	5.40	5.60	0.201	0.213	0.220
E1	4.05	4.30	4.60	0.159	0.169	0.181
D	3.30	3.60	3.95	0.130	0.142	0.156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

Marking: Logo, data code, type code and cathod band

Weight = 0.12 g

FOOTPRINT DIMENSIONS (Millimeter)

SMB Plastic.



Packaging: standard packaging is in tape and reel.