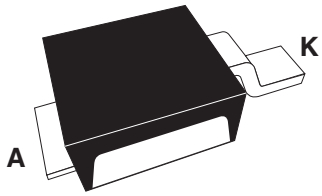
SM2T3V3A

Low voltage TRANSIL™

Features

- Unidirectional Transil Diode
- High peak pulse power : 200 W (10/1000 µs)
- Stand-off voltage 3.3 V
- Low clamping factor V_{CL}/V_{BR}
- Fast response time
- JEDEC registered package outline



DO-216AA
(STmite)

Description

The SM2T3V3A is a Transil diode designed specifically for portable equipment and miniaturized electronic devices subject to ESD transient overvoltages. It's low stand-off voltage makes it suitable for low voltage applications very sensitive to EOS and ESD events.

Transil diodes provide high overvoltage protection by clamping action.

Order code

Part Number	Marking
SM2T3V3A	MUL

Absolute rating (limiting value)

Symbol	Parameter		Value	Unit
P_{PP}	Peak pulse power dissipation(1)	T_j initial = T_{amb}	200	W
P	Power dissipation on infinite heatsink	T_{amb} = 100°C	2.5	W
I_{FSM}	Non repetitive surge peak forward current	t_p = 10 ms T_j initial = T_{amb}	25	A
T_{stg} T_j	Storage temperature range Maximum operating junction temperature		-65 to +175 150	°C
T_l	Lead solder temperature (10 seconds duration)		260	°C

1. 10/1000 µs pulse waveform

TM: TRANSIL is a trademark of STMicroelectronics

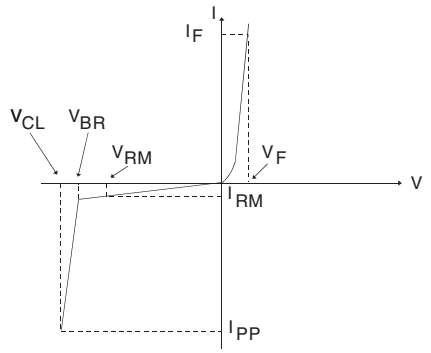
1 Characteristics

1.1 Thermal resistance

Symbol	Parameter	Value	Unit
$R_{th(j-l)}$	Junction to leads	20	°C/W
$R_{th(j-a)}$	Junction to ambient on PCB with recommended pad layout	250	°C/W

1.2 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 @ VRM.
I_{PP}	Peak pulse current.
αT	Voltage temperature coefficient
V_F	Forward voltage drop

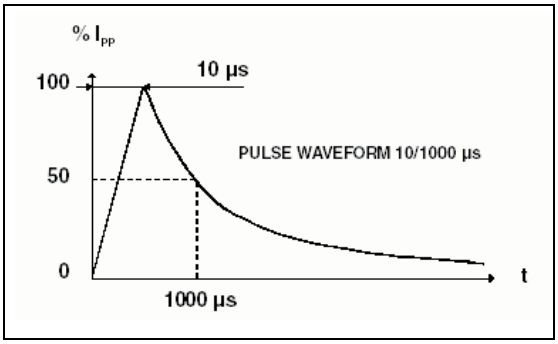


Type	I_{RM} max @ V_{RM}		V_{BR} min @ I_R Note 1		V_{CL} max @ I_{PP} 10/1000 µs		V_{CL} max @ I_{PP} 10/1000 µs		αT max Note 2	C max Note 3
	µA	V	V	mA	V	A	V	A	10^{-4}/°C	pF
SM2T3V3A	500	3.3	3.6	1	6.5	25	6.8	30	-5.3	2500

Note: 1 Pulse test t_p < 50 ms

2 $\Delta V_{BR} = \alpha T * (T_{amb} - 25) + V_{BR}$ (25 °C)

3 V_R = 0 V, F = 1 MHz



2 Package mechanical data (DO216-AA: STmite)

REF.	DIMENSIONS					
	Millimetres			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
A	0.85	1.00	1.15	0.033	0.039	0.045
A1	-0.05		0.105	-0.002		0.002
b	0.40		0.65	0.016		0.025
b2	0.70		1.00	0.027		0.039
c	0.10		0.25	0.004		0.010
D	1.75	1.90	2.05	0.069	0.007	0.081
E	1.75	1.90	2.05	0.069	0.007	0.081
H	3.60	3.75	3.90	0.142	0.148	0.154
L	0.50	0.63	0.80	0.047	0.025	0.031
L2	1.20	1.35	1.50	0.047	0.053	0.059
L3		0.50 ref			0.019 ref	
R	0.07			0.003		
R1	0.07			0.003		

Figure 1. Package dimensions

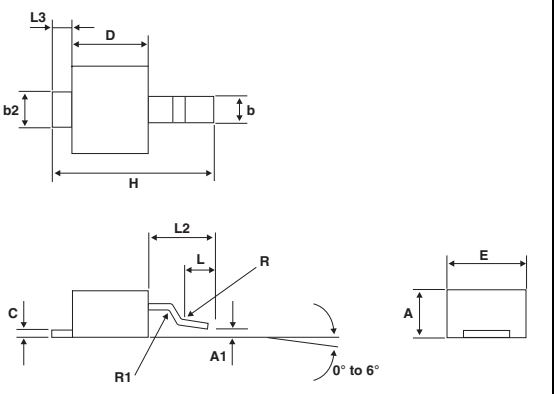
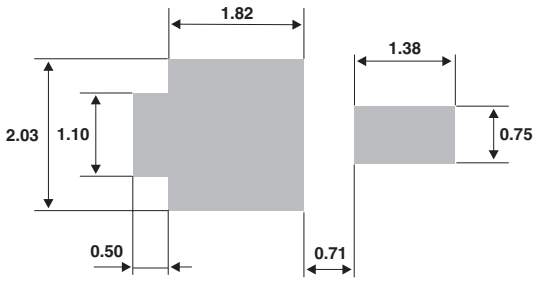


Figure 2. Recommended footprint



Dimensions in mm

3 Ordering information

Ordering type	Marking	Package	Weight	Base quantity	Delivery mode
SM2T3V3A	MUL	STmite	15.5 mg	12000	Tape & Reel

4 Revision history

Date	Revision	Description of changes
10-Oct-2005	1	First Issue