



## Low voltage TRANSIL™

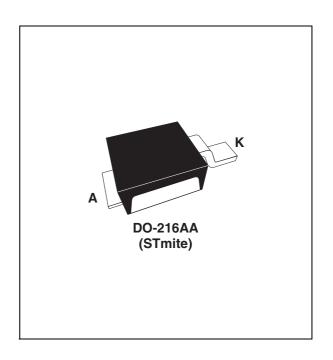
#### **Features**

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

## **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 <sub>PP</sub>	Peak pulse power dissipation <sup>(1)</sup> $T_j$ initial = $T_{amb}$		200	W
Р	Power dissipation on infinite heatsink T <sub>amb</sub> = 100°C		2.5	W
I <sub>FSM</sub>	Non repetitive surge peak forward current $ \begin{aligned} t_p &= 10 \text{ ms} \\ T_j \text{ initial} &= T_{amb} \end{aligned} $		25	Α
T <sub>stg</sub> T <sub>j</sub>	Storage temperature range Maximum operating junction temperature		-65 to +175 150	°C
T <sub>I</sub>	Lead solder temperature (10 seconds duration)	260	°C	

<sup>1.</sup>  $10/1000 \mu s$  pulse waveform

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1 Characteristics SM2T3V3A

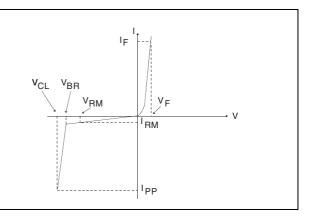
## 1 Characteristics

#### 1.1 Thermal resistance

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

## 1.2 Electrical characteristics ( $T_{amb} = 25^{\circ}C$ )

Symbol	Parameter
V <sub>RM</sub>	Stand-off voltage.
$V_{BR}$	Breakdown voltage.
V <sub>CL</sub>	Clamping voltage.
I <sub>RM</sub>	Leakage current @ VRM.
I <sub>PP</sub>	Peak pulse current.
αΤ	Voltage temperature coefficient
$V_{F}$	Forward voltage drop

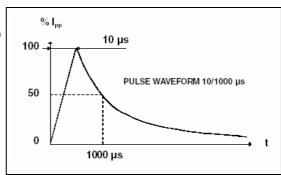


Туре	I <sub>RM</sub> max	« @ V <sub>RM</sub>	V <sub>BR</sub> m	in @ I <sub>R</sub> te 1		x @ Ι <sub>ΡΡ</sub> 00 μs	V <sub>CL</sub> ma 10/10		αT max Note 2	C max Note 3
	μΑ	V	V	mA	V	Α	V	Α	10 <sup>-4</sup> /°C	pF
SM2T3V3A	500	3.3	3.6	1	6.5	25	6.8	30	-5.3	2500

Note: 1 Pulse test  $t_p < 50 \text{ ms}$ 

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

$$3 V_R = 0 V, F = 1 MHz$$

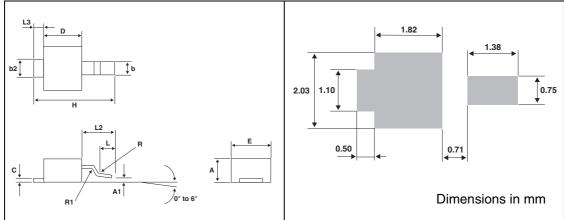


# 2 Package mechanical data (DO216-AA: STmite)

			DIMEN	NSIONS			
REF.		Millimetres		Inches			
	Min.	Тур.	Max.	Min.	Тур.	Max.	
Α	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	
С	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	
Н	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



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3 Ordering information SM2T3V3A

# 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

4 Revision history SM2T3V3A

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