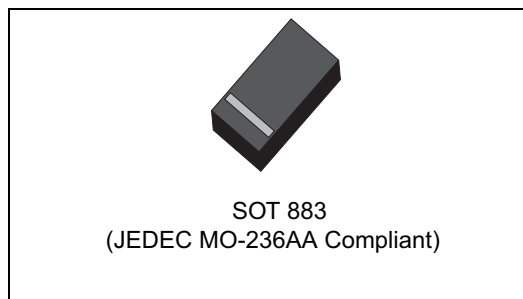


TVS Diodes

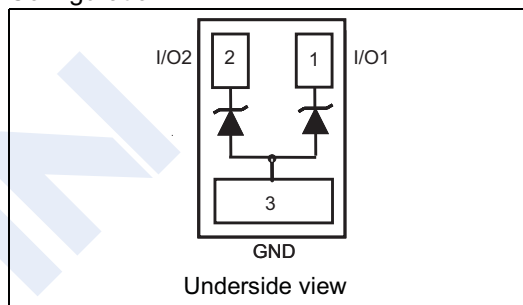
ESDALC6V1M3R

■ Features

- 2 unidirectional low capacitance diodes
- Breakdown Voltage $V_{BR} = 6.1 \text{ V min}$
- Low diode capacitance (11 pF typ at 0 V)
- Low leakage current $< 0.5 \mu\text{A}$
- Very small PCB area: 0.6 mm^2



Configuration



■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Value	Unit
IEC 61000-4-2(ESD)	Air Contact	V_{PP}	± 15
			± 8.0
Peak pulse power dissipation (8/20 μs) (Note 1) $T_j \text{ initial} = T_a$	P_{PP}	30	W
Repetitive peak pulse current (8/20 μs)	I_{PP}	3	A
Junction Temperature	T_j	125	$^\circ\text{C}$
Storage Temperature range	T_{stg}	-55 to +150	
Maximum lead temperature for soldering during 10s	T_L	260	
Operating temperature range	T_{OP}	-40 to +125	

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

TVS Diodes

ESDALC6V1M3R

■ Electrical Characteristics Ta = 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

Parameter	Test condition	Min	Typ	Max	Unit
V_{BR}	$I_R = 1 \text{ mA}$	6.1		7.2	V
I_{RM}	$V_{RM} = 5 \text{ V}$			0.5	μA
R_d			1.1		Ω
αT	$I_R = 1 \text{ mA}$			4.2	$10^{-4}/^\circ\text{C}$
C	$V_R = 0 \text{ V}, F = 1 \text{ MHz}, V_{OSC} = 30 \text{ mV}$		11		pF

■ Marking

Marking	K
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TVS Diodes

ESDALC6V1M3R

■ Typical Characteristics

Figure 1. S21 attenuation measurement results of each channel

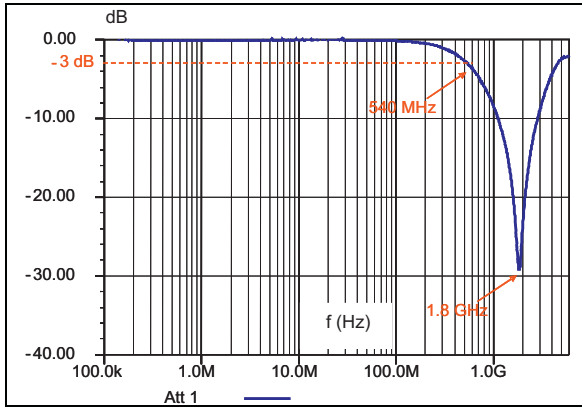


Figure 2. Analog crosstalk measurements between channels

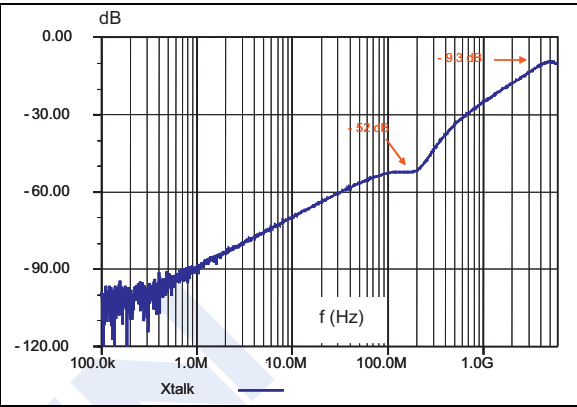


Figure 3. ESD response to IEC61000-4-2 (+15 kV air discharge) on each channel

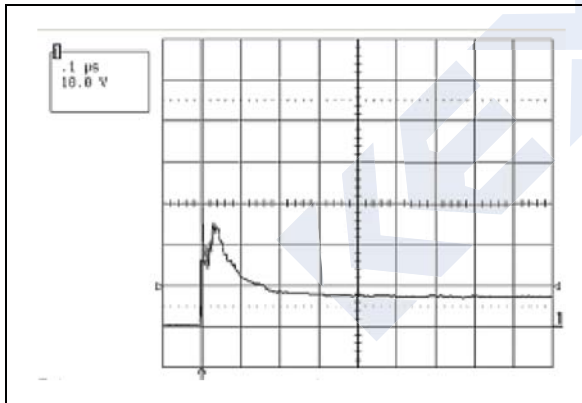


Figure 4. ESD response to IEC61000-4-2 (-15 kV air discharge) on each channel.

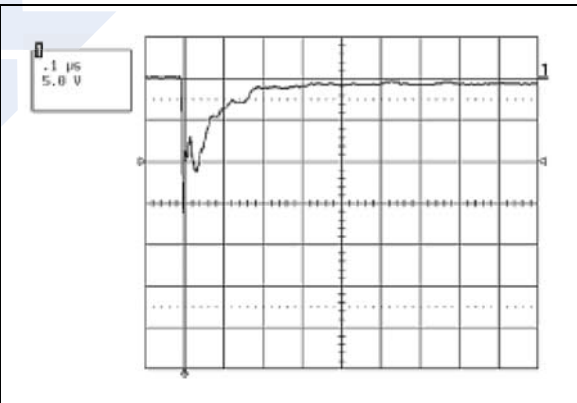


Figure 5. Relative variation of peak pulse power versus initial junction temperature

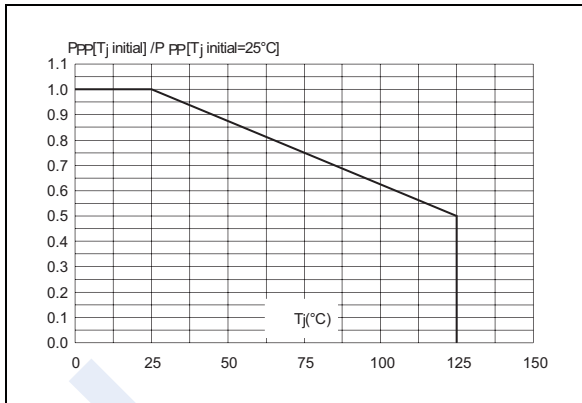
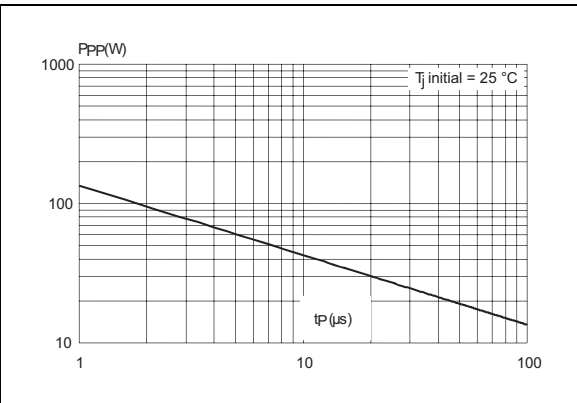


Figure 6. Peak pulse power versus exponential pulse duration



TVS Diodes

ESDALC6V1M3R

■ Typical Characteristics Continued

Figure 7. Clamping voltage versus peak pulse current (typical values)

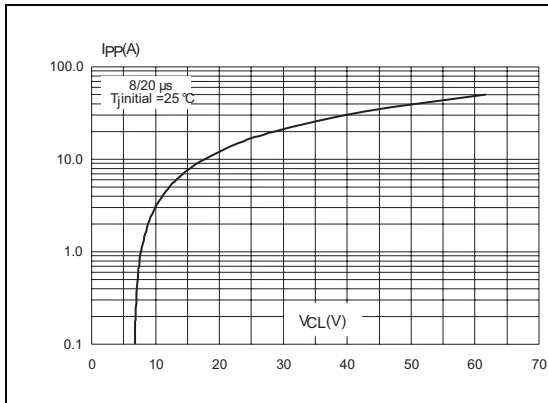


Figure 8. Forward voltage drop versus peak forward current (typical values)

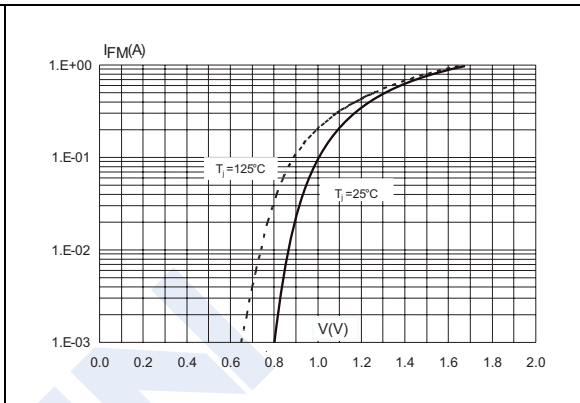


Figure 9. Junction capacitance versus reverse voltage applied (typical values)

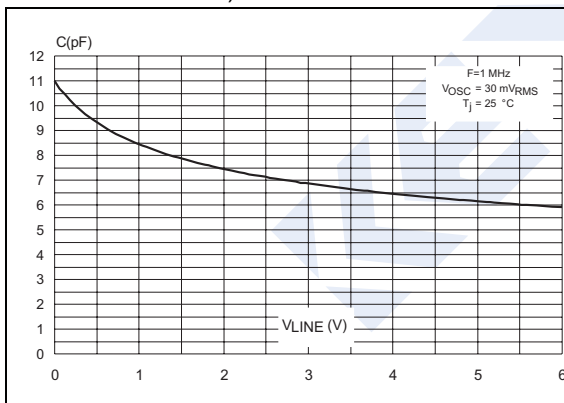
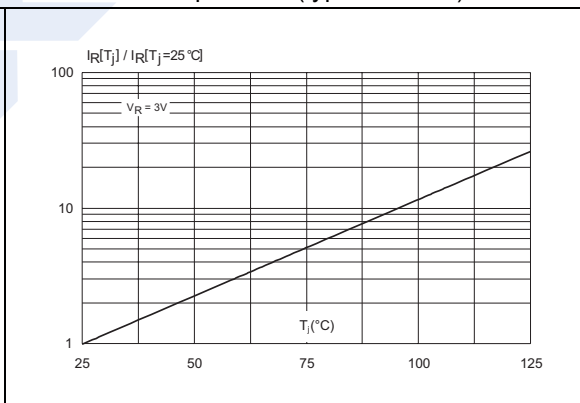


Figure 10. Relative variation of leakage current versus junction temperature (typical values)

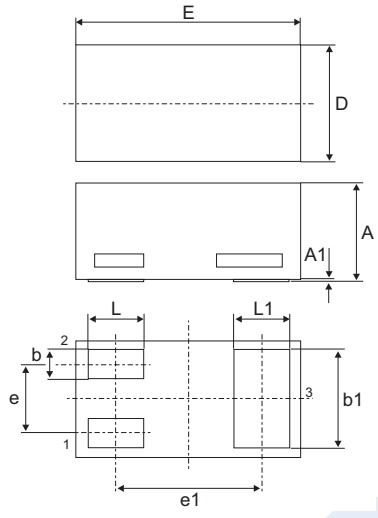


TVS Diodes

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■ Package Outline Dimensions

SOT883 Dimensions



The diagram shows three views of the SOT883 package: a top view, a side view, and a perspective view. The top view shows dimensions E (total length), D (width), L (lead length), L1 (lead length), b (lead width), b1 (lead width), e (pitch), and e1 (pitch). The side view shows dimensions A (height), A1 (height), and b1 (lead width). The perspective view shows dimensions 1, 2, 3, L, L1, b, b1, e, and e1.

Ref.	Dimensions					
	Millimetres			Inches		
	Min	Typ	Max	Min	Typ	Max
A	0.45		0.52	0.18		0.2
A1	0.00		0.05	0.00		0.02
b	0.10	0.15	0.20	0.04	0.06	0.08
b1	0.45	0.50	0.55	0.18	0.20	0.22
D		0.60			0.24	
E		1.00			0.39	
e		0.35			0.14	
e1		0.65			0.26	
L	0.20	0.25	0.30	0.08	0.10	0.12
L1	0.20	0.25	0.30	0.08	0.10	0.12

■ The Recommended Mounting Pad Size

