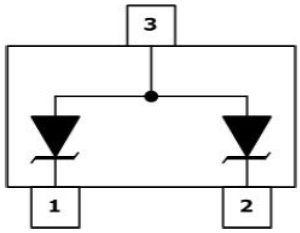
Features

- Unidirectional ESD protection of two lines
- Low diode capacitance: C_d = 17 pF
- Max. peak pulse power: P_{PP} = 160 W
- Low clamping voltage: V_{CL} = 55 V
- Ultra low leakage current: $I_{RM} \leq 1$ µA
- ESD protection up to 30 kV
- IEC 61000-4-2; level 4 (ESD)
- IEC 61000-4-5 (surge); I_{PP} = 2.5 A
- AEC-Q101 qualified



Applications

- Computers and peripherals
- Audio and video equipment
- Cellular handsets and accessories
- Subscriber Identity Module (SIM) card protection
- Portable electronics
- Communication systems
- 10/100 Mbit/s Ethernet

MACHANICAL DATA

- SOT-23 package
- Flammability Rating: UL 94V-0
- Packaging: Tape and Reel
- High temperature soldering guaranted:260℃/10S
- MSL 1

Quick reference data

T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions	Min	Typ	Max	Unit
Per diode						
V_{RWM}	reverse standoff voltage		-	-	36	V
C_d	diode capacitance	f = 1 MHz; V_R = 0 V	-	17	35	pF

Limiting values

In accordance with the Absolute Maximum Rating System (IEC 60134).

Symbol	Parameter	Conditions		Min	Max	Unit
Per diode						
P_{PP}	peak pulse power	t_p = 8/20 µs	[1][2]	-	160	W
I_{PP}	peak pulse current	t_p = 8/20 µs	[1][2]	-	2.5	A
Per device						
T_j	junction temperature			-	150	°C
T_{amb}	ambient temperature			–55	+150	°C
T_{stg}	storage temperature			–65	+150	°C

[1] Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC 61000-4-5.

[2] Measured from pin 1 or 2 to pin 3.

ESD maximum ratings

T_{amb} = 25 °C unless otherwise specified.

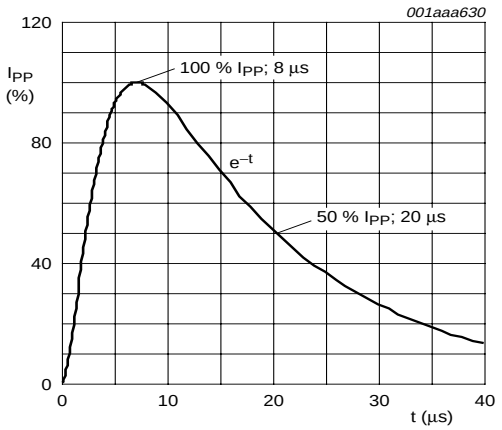
Symbol	Parameter	Conditions		Min	Max	Unit
Per diode						
V_{ESD}	electrostatic discharge voltage	IEC 61000-4-2 (contact discharge)	[1][2]	-	30	kV
		machine model	[2]	-	400	V
		MIL-STD-883 (human body model)		-	8	kV

[1] Device stressed with ten non-repetitive ESD pulses.

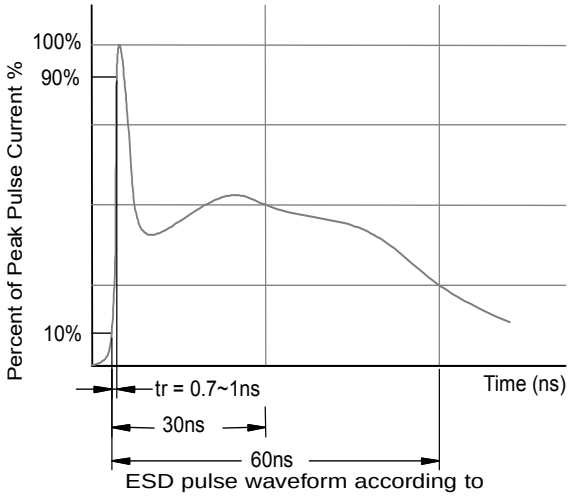
[2] Measured from pin 1 to pin 2.

ESD standards compliance

Standard	Conditions
Per diode	
IEC 61000-4-2; level 4 (ESD)	> 15 kV (air); > 8 kV (contact)
MIL-STD-883; class 3 (human body model)	> 4 kV



8/20 µs pulse waveform according to IEC 61000-4-5



ESD pulse waveform according to IEC 61000-4-2

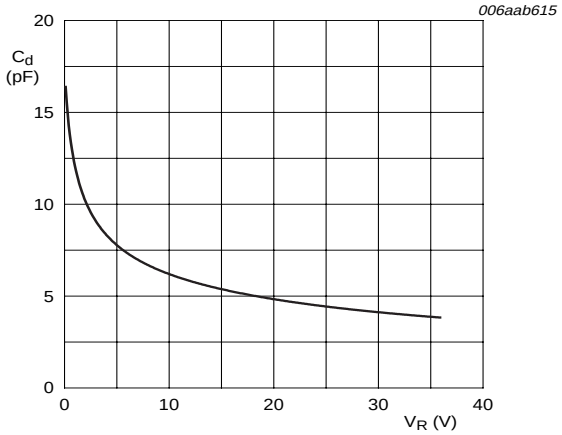
Characteristics

T_{amb} = 25 °C unless otherwise specified.

Symbol	Parameter	Conditions		Min	Typ	Max	Unit
Per diode							
V_{RWM}	reverse standoff voltage			-	-	36	V
I_{RM}	reverse leakage current	V_{RWM} = 30 V		-	< 0.02	1	µA
V_{BR}	breakdown voltage	I_R = 5 mA		40	44	-	V
C_d	diode capacitance	f = 1 MHz; V_R = 0 V	[1]	-	17	35	pF
V_{CL}	clamping voltage	I_{PP} = 1 A	[1][2]	-	55	60	V
r_{dif}	differential resistance	I_R = 0.5 mA		-	-	300	Ω

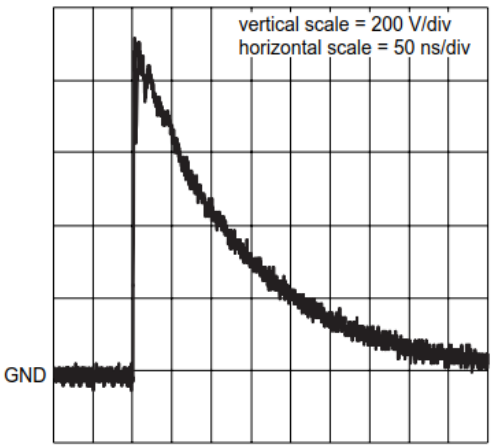
[1] Measured from pin 1 or 2 to pin 3.

[2] Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC 61000-4-5.

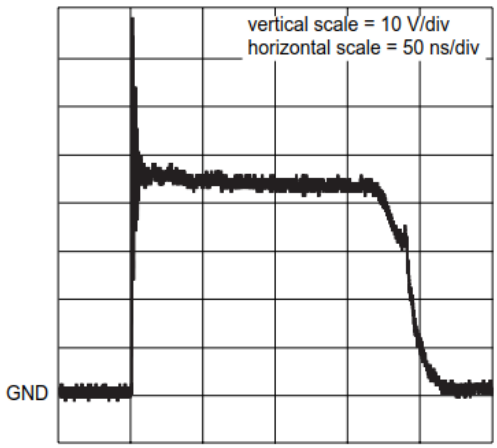


f = 1 MHz; T_{amb} = 25 °C

Diode capacitance as a function of reverse voltage; typical values

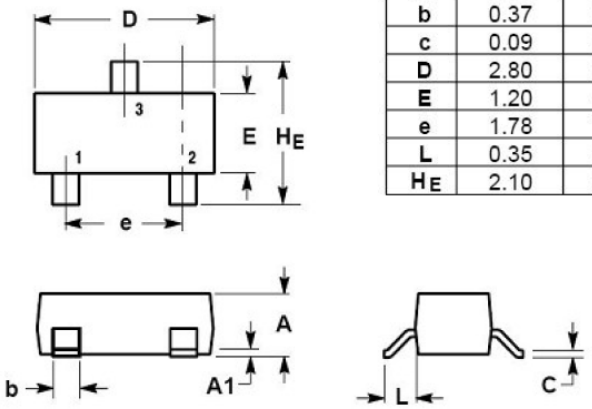


unclamped +1 kV ESD voltage waveform
(IEC61000-4-2 network)



clamped +1 kV ESD voltage waveform
(IEC61000-4-2 network)

SOT-23 PACKAGE OUTLINE DIMENSIONS



DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.89	1.00	1.11	0.035	0.040	0.044
A1	0.01	0.06	0.10	0.001	0.002	0.004
b	0.37	0.44	0.50	0.015	0.018	0.020
c	0.09	0.13	0.18	0.003	0.005	0.007
D	2.80	2.90	3.04	0.110	0.114	0.120
E	1.20	1.30	1.40	0.047	0.051	0.055
e	1.78	1.90	2.04	0.070	0.075	0.081
L	0.35	0.54	0.69	0.014	0.021	0.029
H_E	2.10	2.40	2.64	0.083	0.094	0.104

Marking