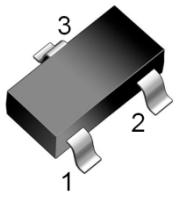
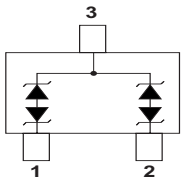
REPLACEMENT TYPE : PESD1CAN

FEATURES

- Max. peak pulse power: P_{PP} = 200 W at t_p = 8/20 µs
- Low clamping voltage: V_{CL} = 40 V at I_{PP} =1A
- Ultra low leakage current: I_{RM} < 1 nA
- Typ. diode capacitance matching: $\Delta C_d/C_d$ = 0.1 %
- ESD protection up to 23 kV
- IEC 61000-4-2, level 4 (ESD)
- IEC 61000-4-5 (surge); IPP = 3 A at t_p = 8/20 µs



SOT-23



MECHANICAL DATA

- Case: SOT-23
- Terminals: Pure tin plated, lead free

MAXIMU MRATINGS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power 8x20µsec Waveform	P_{PK}	200	W
Peak Pulse Current 8x20µsec Waveform	I_{PP}	3	A
ESD Voltage [1] IEC 61000-4-2 (contact discharge)	V_{ESD}	23	kV
ESD Voltage MIL-STD-883 (human body model)	V_{ESD}	10	kV
Operating Temperature	T_L	-50 to +125	°C
Storage Temperature	T_{stg}	-50 to +150	°C

Note: 1.Device stressed with ten non-repetitive ESD pulses. Measured from pin 1 to 3 or 2 to 3.

ELECTRICAL CHARACTERISTICS (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Reverse Stand-Off Voltage	V_{RWM}				24	V
Reverse Breakdown Voltage	V_{BR}	I_{BR} = 5mA	25.4	27.8	30.3	V
Reverse Leakage Current	I_R	V_{RWM} = 24V T_A = 25°C		<1	50	nA
Diode Capacitance	C_d	f = 1 MHz; V_R = 0 V		11	17	pF
Diode Capacitance Matching[2]	$\Delta C_d/C_d$	f = 1 MHz; V_R = 0 V		0.1		%
Diode Capacitance Matching[2]	$\Delta C_d/C_d$	f = 1 MHz; V_R = 2.5 V		0.1		%
Clamping Voltage[3,4]	V_C	I_{PP} = 1A ,8 x 20 µsec			40	V
Clamping Voltage[3,4]	V_C	I_{PP} = 3A ,8 x 20 µsec			70	V
Differential Resistance	r_{dif}	I_R = 1 mA			300	Ω

Note:
2. ΔC_d is the difference of the capacitance measured between pin 1 and pin 3 and the capacitance measured between pin 2 and pin 3.
3. Non-repetitive current pulse 8/20 µs exponential decay waveform according to IEC 61000-4-5.
4. Measured from pin 1 to 3 or 2 to 3.

Typical Characteristics

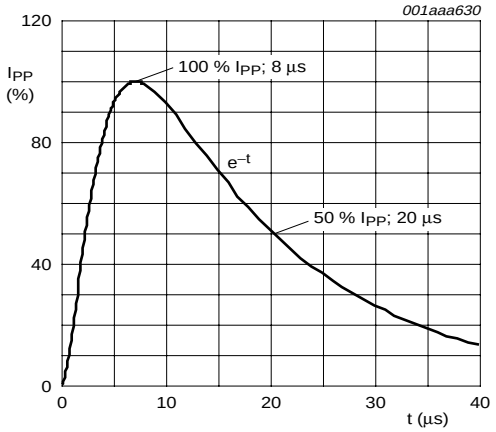


Fig 1. 8/20 µs pulse waveform according to IEC 61000-4-5

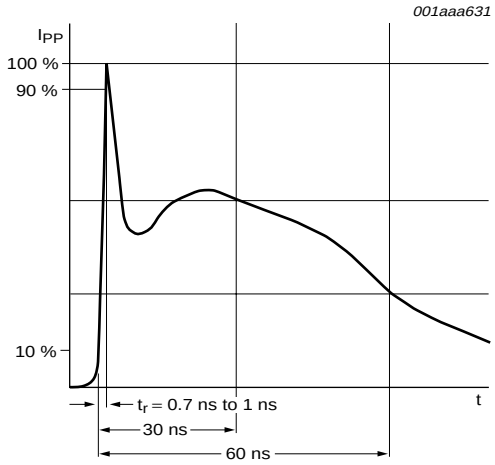
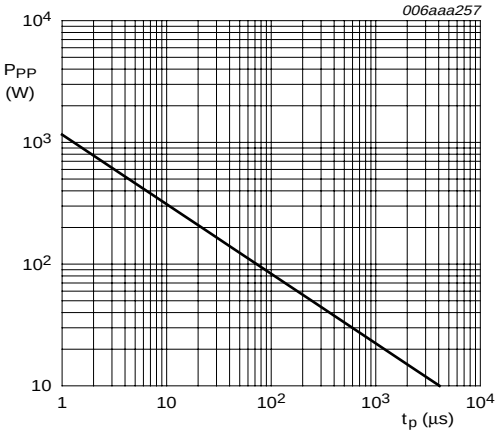


Fig 2. ESD pulse waveform according to IEC 61000-4-2



Tamb = 25 °C

Fig 3. Peak pulse power as a function of exponential pulse duration; typical values

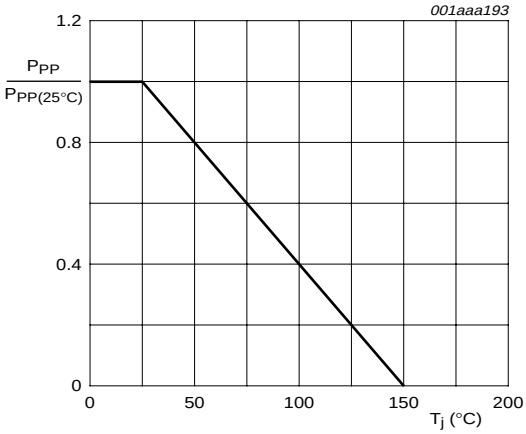
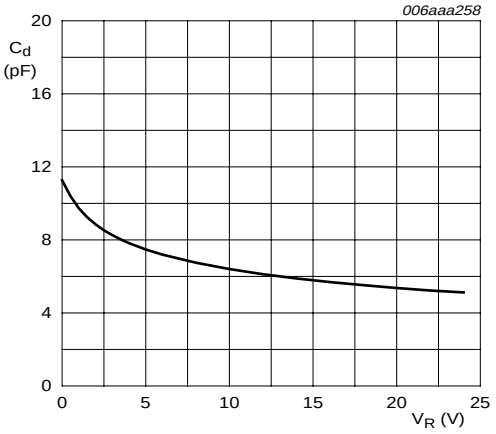


Fig 4. Relative variation of peak pulse power as a function of junction temperature; typical values



f = 1 MHz; Tamb = 25 °C

Fig 5. Diode capacitance as a function of reverse voltage; typical values

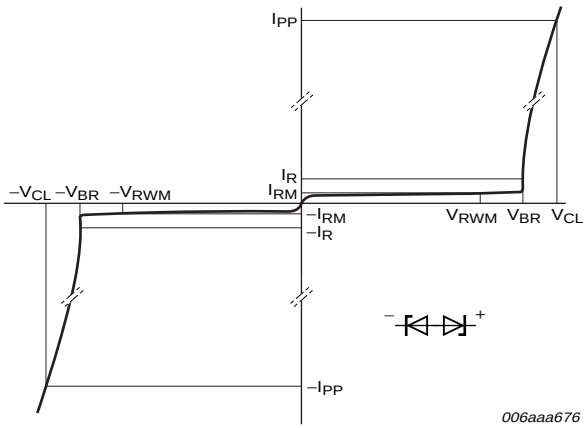


Fig 6. V-I characteristics for a bidirectional ESD protection diode

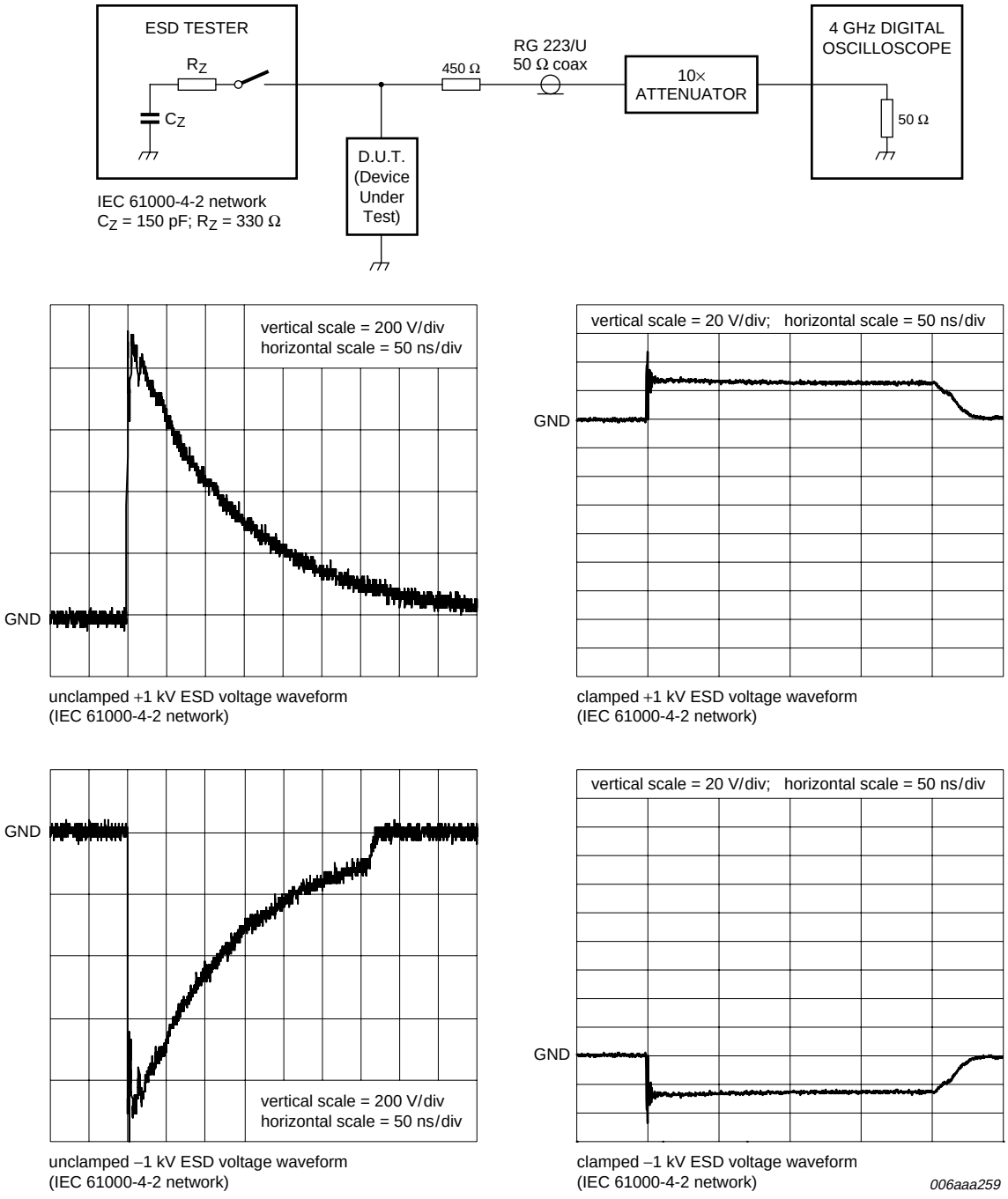
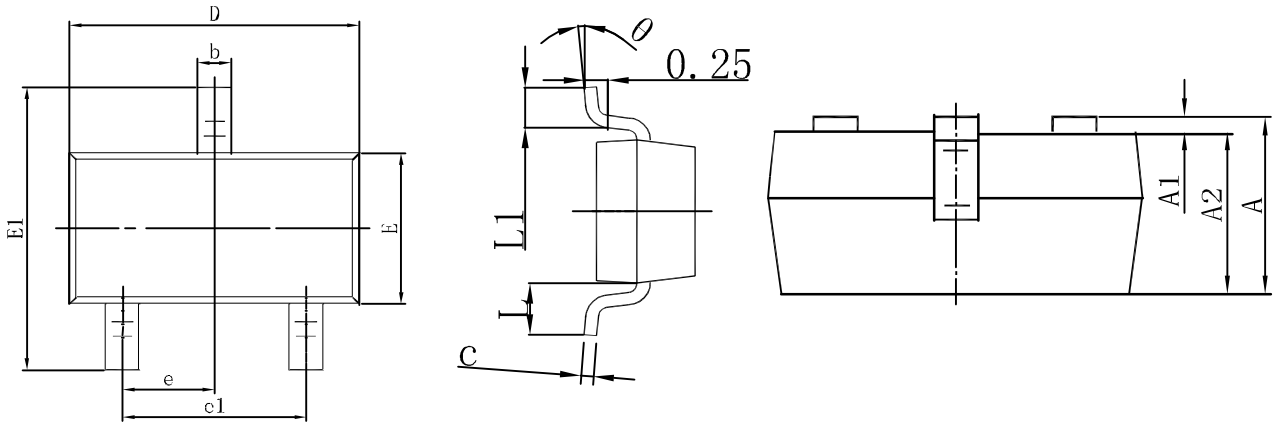


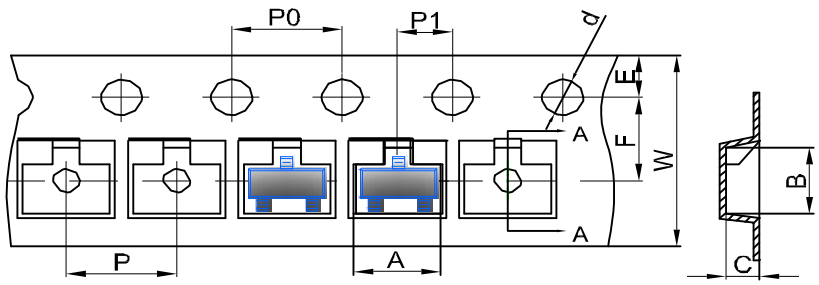
Fig 7. ESD clamping test setup and waveforms

SOT-23 Package Outline Dimensions



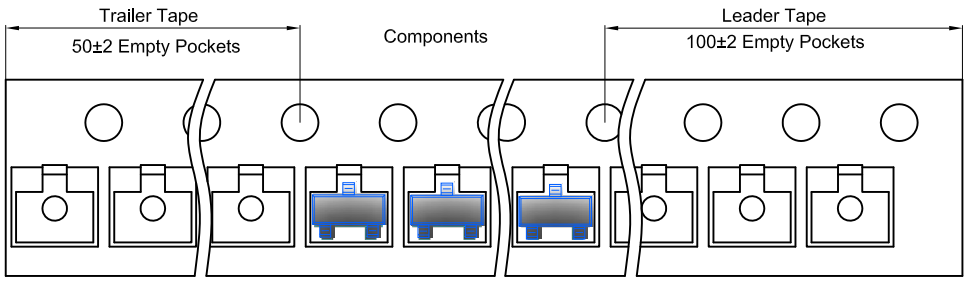
Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.080	0.150	0.003	0.006
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950 TYP		0.037 TYP	
e1	1.800	2.000	0.071	0.079
L	0.550 REF		0.022 REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

SOT-23 Embossed Carrier Tape

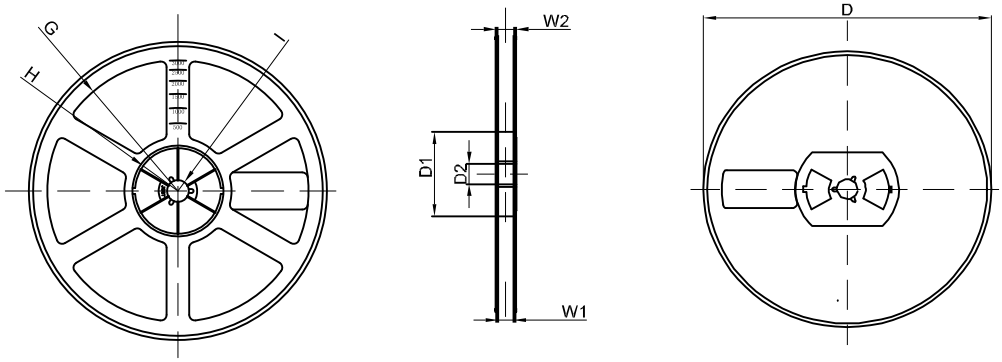


	DIMENSIONS ARE IN MILLIMETER									
TYPE	A	B	C	d	E	F	P0	P	P1	W
SOT-23	3.15	2.77	1.22	φ1.50	1.75	3.50	4.00	4.00	2.00	8.00
TOLERANCE	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1	±0.1

SOT-23 Tape Leader and Traller



SOT-23 Reel



	DIMENSIONS ARE IN MILLIMETER							
REEL OPTION	D	D1	D2	G	H	I	W1	W2
7” DIA	φ178	54.40	13.00	R78	R25.60	R6.50	9.50	12.30
TOLERANCE	±2	±1	±1	±1	±1	±1	±1	±1