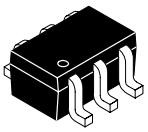
Low Capacitance Quad Array for ESD Protection

General Description

Low capacitance 5-fold ESD protection array in the very small SOT363 plastic package designed to protect up to five transmission or data lines from the damage caused by Electrostatic Discharge (ESD).

Applications

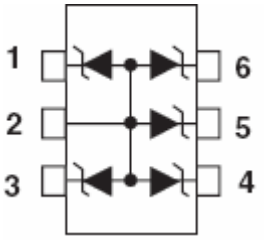
- Cellular handsets and accessories
- Portable electronics
- Computers and peripherals
- Communications systems
- Audio and video equipment.



SC-88/SOT-363

Features

- Uni-directional ESD protection of up to five lines
- Bi-directional ESD protection of up to four lines
- Low diode capacitance
- Low clamping voltage
- low leakage current
- IEC 61000-4-2; level 4 (ESD)
- IEC61000-4-5 (surge)
- S- Prefix for Automotive and Other Applications Requiring Unique Site and Control Change Requirements; AEC-Q101 Qualified and PPAP Capable.



ORDERING INFORMATION

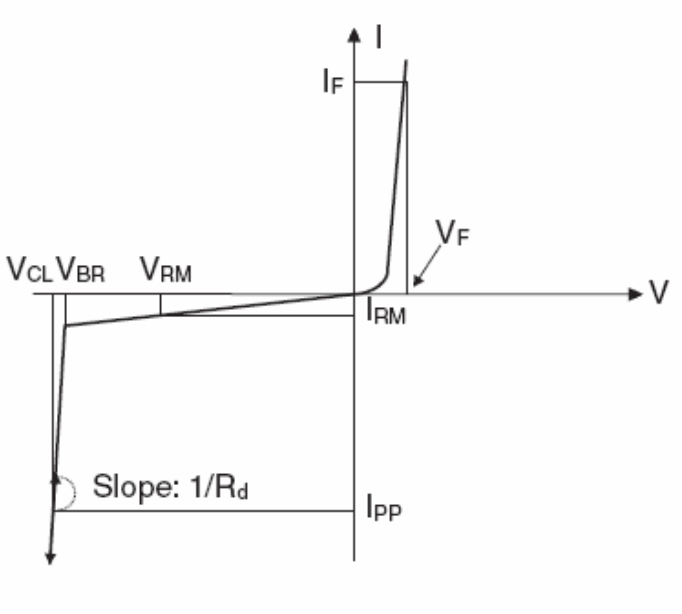
Device	Marking	Shipping
SMF05CT1G	K4	3000/Tape & Reel

Absolute Ratings (T_{amb}=25°C)

Symbol	Parameter	Value	Units
P_{PP}	Peak Pulse Power (t_p = 8/20μs)	25	W
T_L	Maximum lead temperature for soldering during 10s	260	°C
T_{stg}	Storage Temperature Range	-60 to +150	°C
T_{op}	Operating Temperature Range	-60 to +150	°C
T_j	Maximum junction temperature	150	°C
V_{PP}	Electrostatic discharge IEC61000-4-2 (contact discharge) IEC61000-4-2 (air discharge)	 8 15	 kV kV

Electrical Parameter

Symbol	Parameter
V_{RM}	Stand-off voltage
V_{BR}	Breakdown voltage
V_{CL}	Clamping voltage
I_R	Leakage current
I_{PP}	Peak pulse current
C	Capacitance



Electrical Characteristics

Part Numbers	V_{BR}		V_{RM}	I_R	I_{PP}	V_{CL} (Max)		C
	Min.	Max.			8/20 μs pulse; notes1and2	@ I_{PP} =1A	@ I_{PP} =2.5A	f=1MHz; V_R = 0 V; seeFig.4
	v	v	v	μA	A	v	v	pF
SMF05CT1G	6.4	7.2	5	1	2.5	10	12	15

Notes

1. Non-repetitive current pulse 8/20 μs exponentially decaying waveform; see Fig.1.
2. Measured from any of pins 1, 3, 4, 5 or 6 to pin 2.

GRAPHICAL DATA

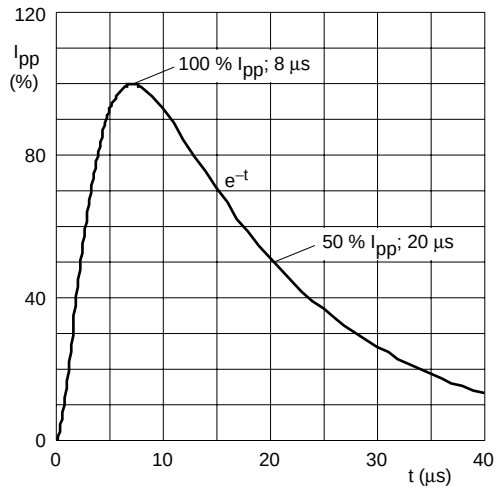


Fig.1 8/20 μs pulse waveform according to IEC 61000-4-5.

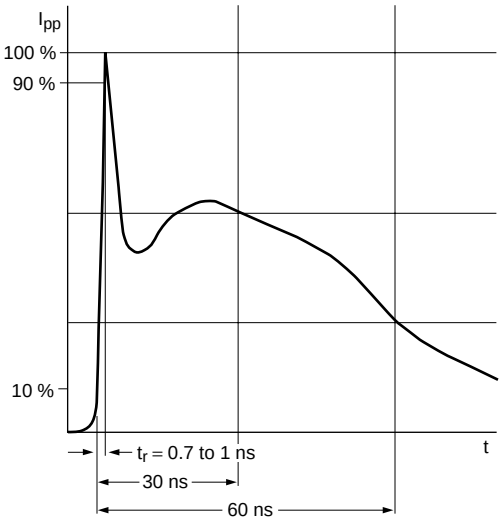
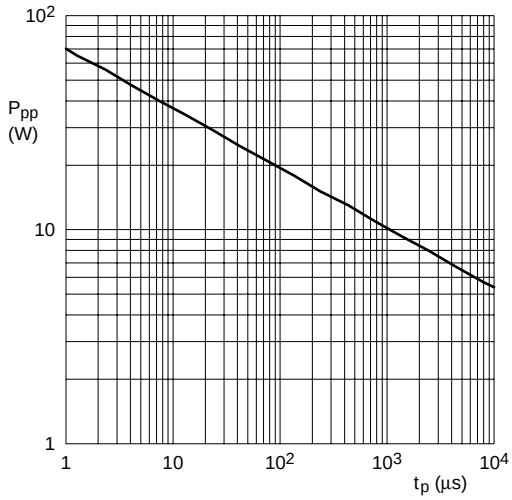


Fig.2 Electrostatic Discharge (ESD) pulse waveform according to IEC 61000-4-2.

GRAPHICAL DATA



T_{amb} = 25 °C.
I_{pp} = 8/20 µs exponentially decaying waveform; see Fig.1.

Fig.3 Peak pulse power dissipation as a function of pulse time; typical values.

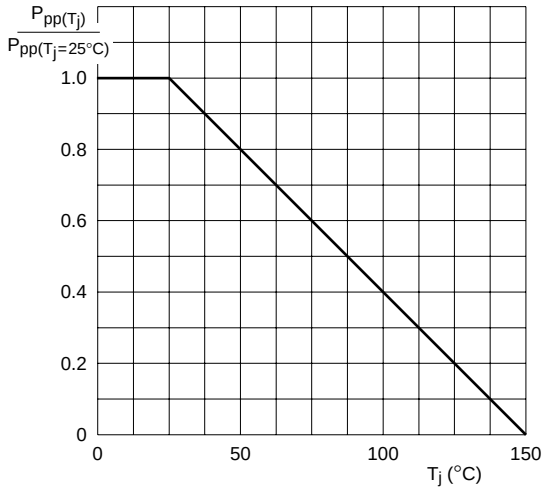
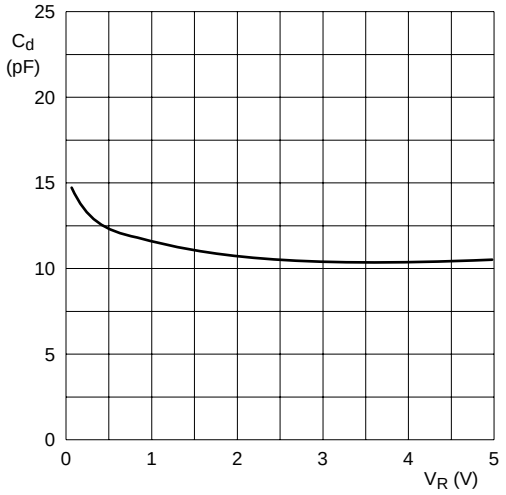


Fig.4 Relative variation of peak pulse power as a function of junction temperature; typical values.



f = 1 MHz; T_{amb} = 25 °C.

Fig.5 Diode capacitance as af unction of reverse voltage; typical values.

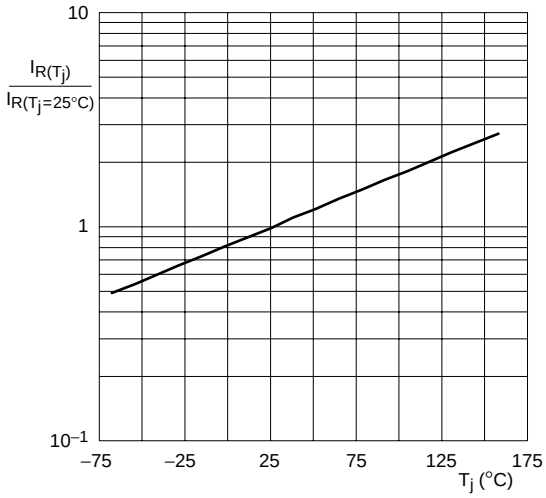
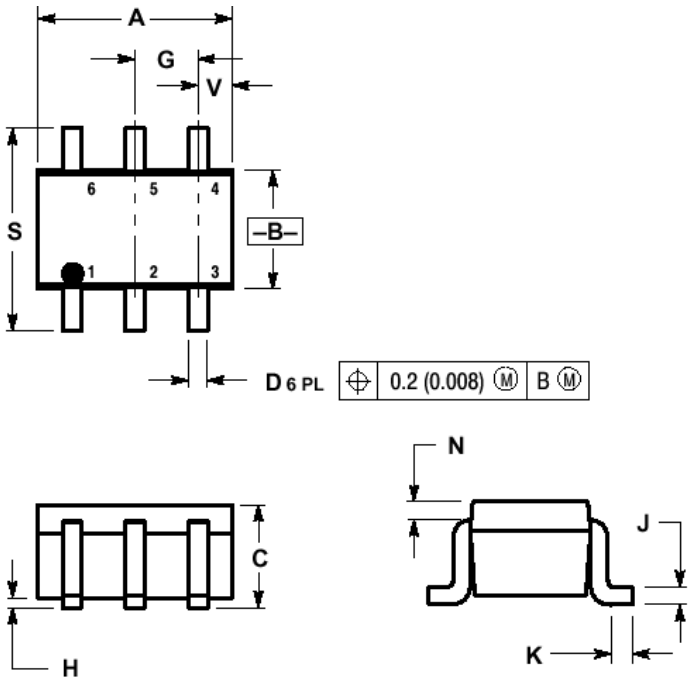


Fig.6 Relative variation of reverse leakage current as a function of junction temperature; typical values.

PACKAGE DIMENSIONS

SC-88/SOT-363



NOTES:

1. DIMENSIONING AND TOLERANCING PER ANSI Y14.5M, 1982.
2. CONTROLLING DIMENSION: INCH.

	INCHES		MILLIMETERS	
DIM	**MIN**	**MAX**	**MIN**	**MAX**
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026BSC		0.65BSC	
H	——	0.004	——	0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20
V	0.012	0.016	0.30	0.40