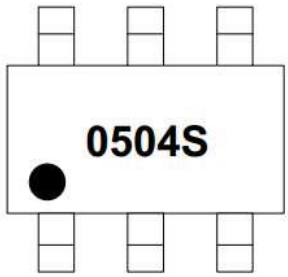
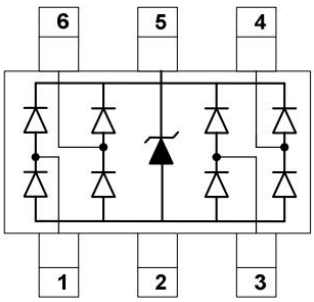
ESDULC5V-4K5

Description

ESDULC5V-4 is designed to protect voltage sensitive components from ESD and transient voltage events. Excellent clamping capability, low leakage, and fast response time, make these parts ideal for ESD protection on designs where board space is at a premium.



Functional Diagram



Features

- Package: SOT-363
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Complies with following standards:
- Complies with following standards:
  – IEC 61000-4-2 (ESD) immunity test
    Air discharge: ±15kV
    Contact discharge: ±8kV

Applications

- USB 2.0 power and data line
- Set-top box and digital TV
- Digital video interface (DVI)
- Notebook Computers
- SIM Ports
- 10/100 Ethernet

Absolute Maximum Ratings(Tamb=25°C unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	P_{PP}	100	Watts
ESD per IEC 61000−4−2 (Air)	V_{ESD}	±15	KV
ESD per IEC 61000−4−2 (Contact)		±8	KV
Lead Soldering Temperature	T_L	260 (10 sec)	°C
Operating Temperature Range	T_J	-55 to +150	°C
Storage Temperature Range	T_{STJ}	-55 to +150	°C

Electrical Characteristics (TA = 25 °C unless otherwise noted)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Stand-off Voltage	V_{RWM}				5	V
Reverse Breakdown Voltage	V_{BR}	I_t = 1mA	6			V
Reverse Leakage Current	I_R	V_R =V_{RWM}			0.5	μA
Clamping Voltage	V_C	I_{PP}=1A, t_P = 8/20μs			15	V
		I_{PP}=5A, t_P = 8/20μs			20	V
Junction Capacitance	C_J	V_R=0V, f = 1MHz		0.8		pF

Characteristics Curves

Figure 1- Power Derating Curve

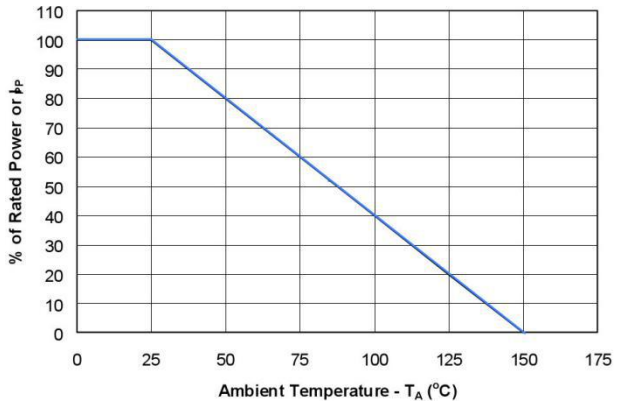


Figure 2- ESD Pulse Waveform
(according to IEC 61000-4-2)

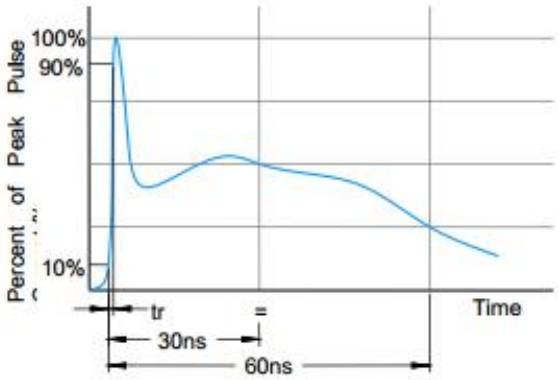
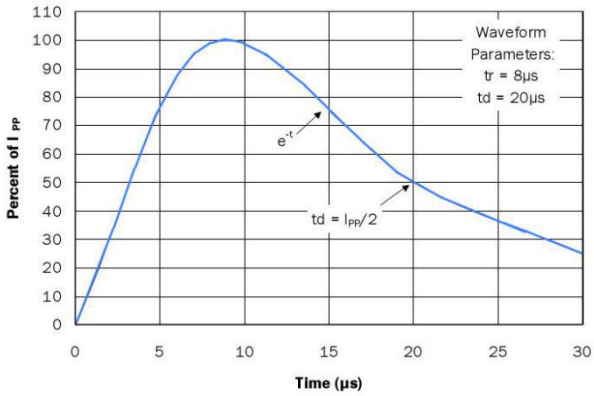
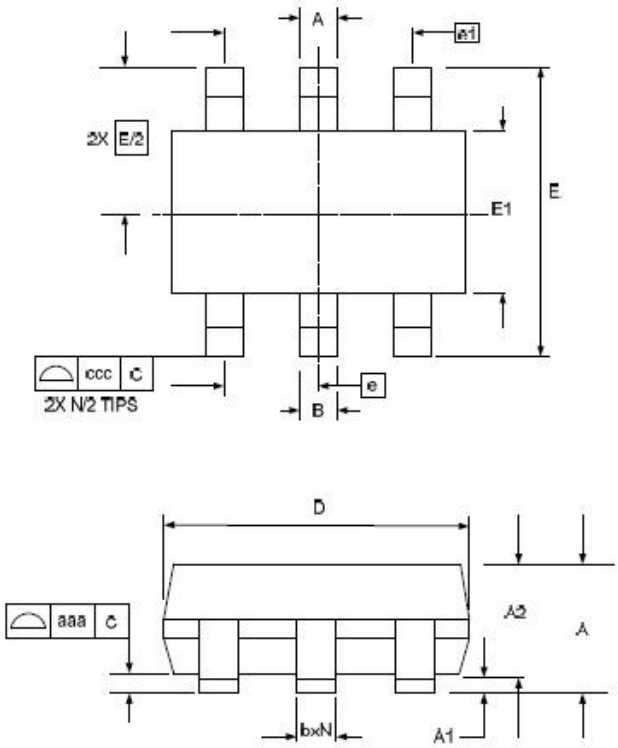


Figure3- 8/20μs Pulse Waveform

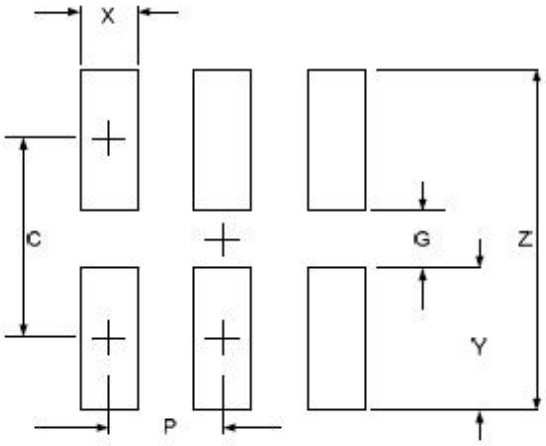


ACKAGE OUTLINE DIMENSIONS in millimeters (inches) :SOT-363



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A			1.10			0.043
A1	0.00		0.10	0.000		0.004
A2	0.70	0.90	1.00	0.028	0.035	0.039
b	0.15		0.30	0.006		0.012
c	0.08		0.22	0.003		0.009
D	1.80	2.00	2.20	0.071	0.079	0.087
E1	1.15	1.25	1.35	0.045	0.049	0.053
E	2.10 BSC			0.083 BSC		
e	0.65 BSC			0.026 BSC		
e1	1.30 BSC			0.015 BSC		
N	6			6		
aaa	0.10			0.004		
ccc	0.30			0.012		

Mounting Pad Layout



SYM	DIMENSIONS	
	MILLIMETERS	INCHES
C	1.85	0.073
G	1.00	0.039
P	0.65	0.026
X	0.40	0.016
Y	0.85	0.033
Z	2.70	0.106

Disclaimer

Specifications are subject to change without notice.

The device characteristics and parameters in this data sheet can and do vary in different applications and actual device performance may vary over time.

Users should verify actual device performance in their specific applications.