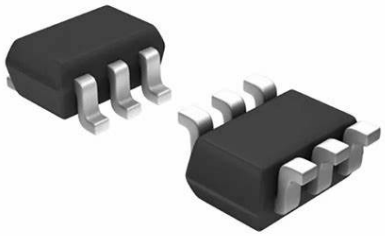
HJKE
WWW.HJKEIC.COM

RClamp0504F

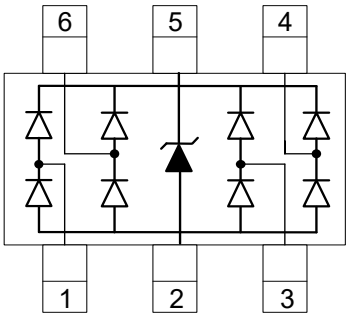
4-Line Ultra Low Capacitance TVS Array

Features

- Ultra low capacitance: 0.3pF typical (I/O to I/O)
- Ultra low leakage: nA level
- Operating voltage: 5V
- Low clamping voltage
- Up to four data lines and one power line protects
- JEDEC SOT23-6 package
- Complies with following standards:
  - IEC 61000-4-2 (ESD) immunity test
    - Air discharge: ±20kV
    - Contact discharge: ±20kV
  - IEC61000-4-5 (Lightning) 4.5A (8/20μs)
- RoHS Compliant



SOT-363



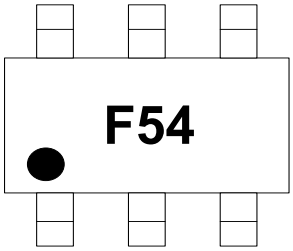
Circuit diagram

Mechanical Characteristics

- Package: SOT-363 (SC-70)
- Lead Finish: Matte Tin
- Case Material: “Green” Molding Compound.
- Terminal Connections: See Diagram Below
- Marking Information: See Below

Applications

- USB 2.0 Power and Data lines protection
- Digital Visual Interface (DVI)
- Monitors and Flat Panel Displays
- Video Graphic Cards
- Notebook and PC Computers



F54 = Device Marking Code

Dot denotes Pin1

Marking (Top View)

Ordering Information

Part Number	Packaging	Reel Size
RClamp0504F	3000/Tape & Reel	7 inch

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

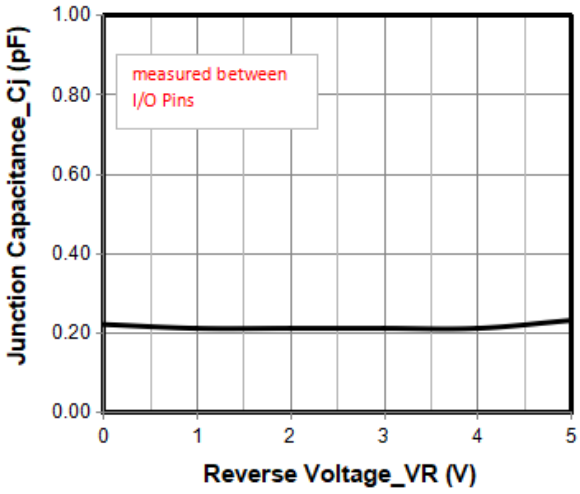
Parameter	Symbol	Value	Unit
Peak Pulse Power (8/20μs)	Ppk	60	W
Peak Pulse Current (8/20μs)	I_{PP}	4.5	A
ESD per IEC 61000−4−2 (Air) ESD per IEC 61000−4−2 (Contact)	V_{ESD}	±20 ±20	kV
Operating Temperature Range	T_J	−55 to +125	°C
Storage Temperature Range	Tstg	−55 to +150	°C

Electrical Characteristics (T_A=25°C unless otherwise specified)

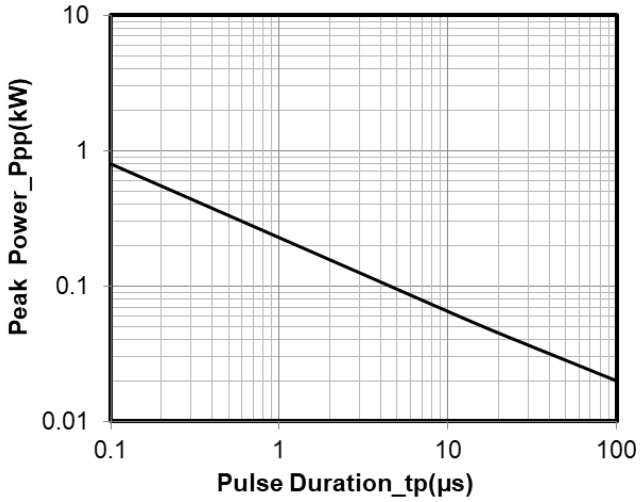
Parameter	Symbol	Min	Typ	Max	Unit	Test Condition
Reverse Working Voltage	V_{RWM}			5	V	Any I/O pin to ground
Breakdown Voltage	V_{BR}	6			V	I_T = 1mA, any I/O pin to ground
Reverse Leakage Current	I_R			0.5	μA	V_{RWM} = 5V, any I/O pin to ground
Forward Voltage	V_F		1.0	1.2	V	I_F = 15mA, ground to pin 1,3,4,5,6
Clamping Voltage	V_C		9	12	V	I_{PP}= 1A (8 x 20μs pulse), any I/O pin to ground
Clamping Voltage	V_C		12	15	V	I_{PP}= 4.5A (8 x 20μs pulse), any I/O pin to ground
Junction Capacitance	C_J		15	18	V	I_{PP} = 17A (8 x 20μs pulse), any Vcc pin 5 to ground
Clamping Voltage	V_C		0.3	0.4	pF	VR = 0V, f = 1MHz, any I/O pin to I/O pin
Junction Capacitance	C_J		0.6	0.8	pF	VR = 0V, f = 1MHz, any I/O pin to ground

Note 1: I/O pins are Pin 1, 3, 4 and 6.

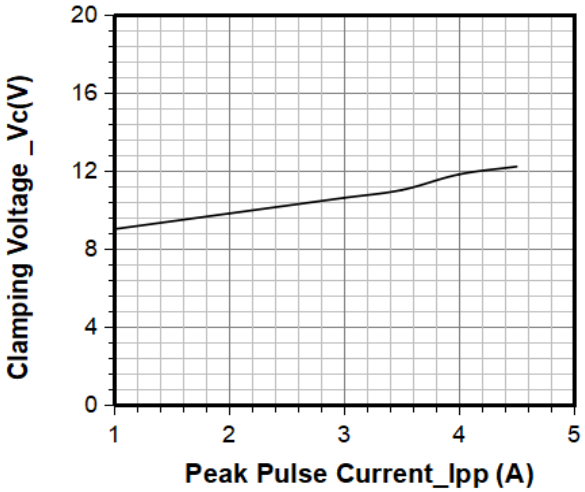
Typical Performance Characteristics (TA=25°C unless otherwise Specified)



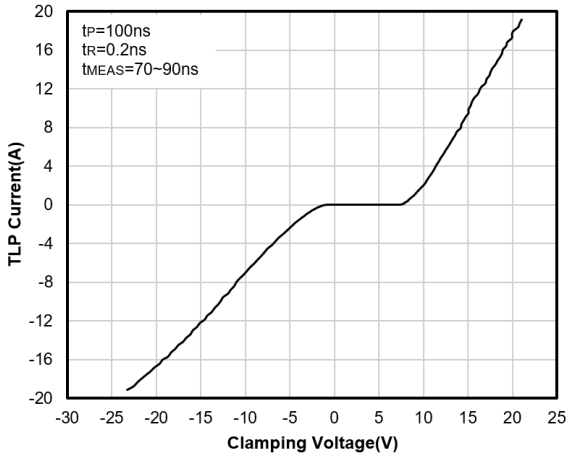
Junction Capacitance vs. Reverse Voltage



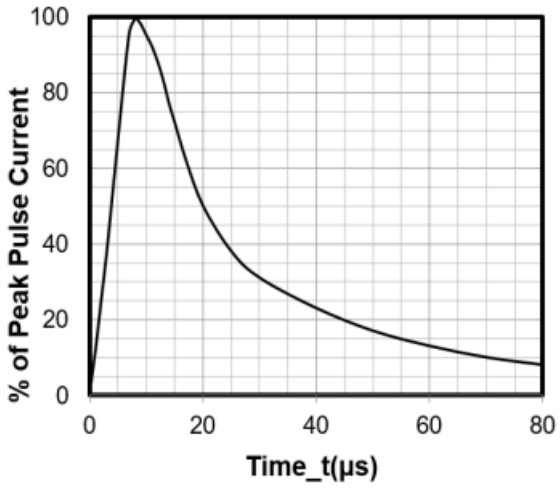
Peak Pulse Power vs. Pulse Time



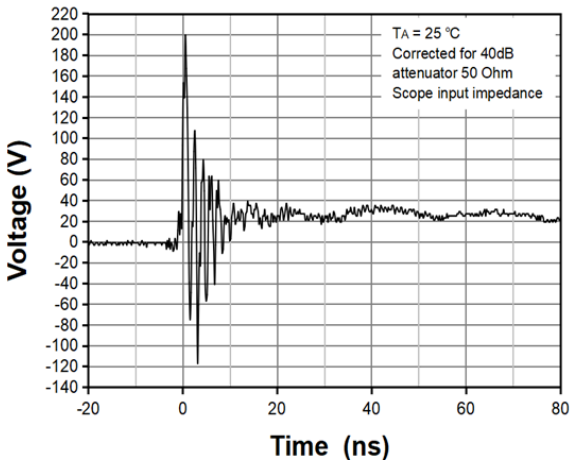
Clamping Voltage vs. Peak Pulse Current



TLP Curve



8 X 20μs Pulse Waveform

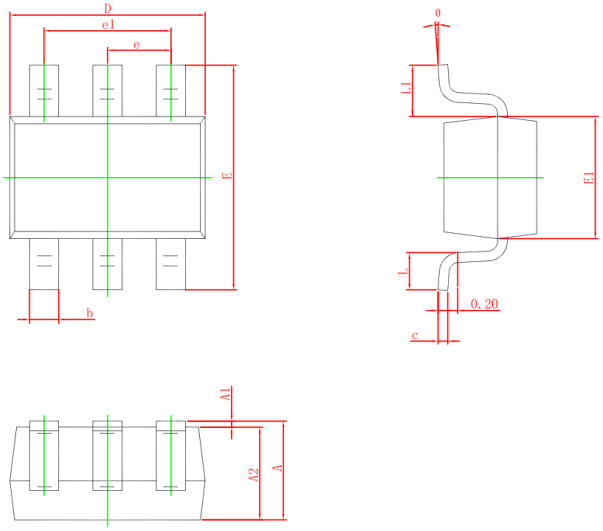


Note：Data is taken with a 10x attenuator

ESD Clamping Voltage

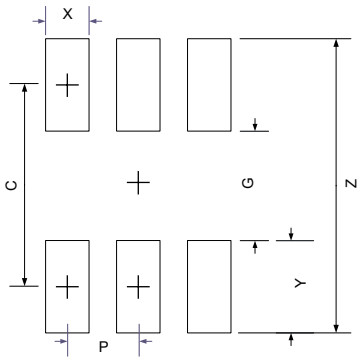
8 kV Contact per IEC61000−4−2

SOT-363 Package Outline Drawing



SYM	DIMENSIONS					
	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0. 900	-	1.100	0.035	-	0.043
A1	0.000	-	0.100	0.000	-	0.004
A2	0.900	-	1.000	0.035	-	0.039
b	0.150	-	0.350	0.006	-	0.014
c	0.080	-	0.150	0.003	-	0.006
D	2.000	-	2.200	0.079		0.087
E	2.150	-	2.450	0.085	-	0.096
E1	1.150	-	1.350	0.045	-	0.053
e	0.650 TYP.			0.026 TYP.		
e1	1.200	-	1.400	0.047	-	0.055
L	0.260	-	0.460	0.010	-	0.018
L1	0.525 REF.			0.021 REF.		
θ	0°	-	8°	0°	-	8°

Suggested Land Pattern



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