

General description

This 5-line surge protection array is designed for application requiring transient voltage protection capability. It is intended for use in over-transient voltage and ESD sensitive equipment such as computers, printers, automotive electronics, networking communication and other applications. This device features a monolithic common anode design which protects five independent lines in a single SOT363 package.

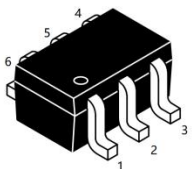
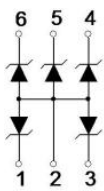
Features and benefits

- Working Voltage 5V
- 5 Unidirectional ESD protection of one line
- Low leakage current: nA Level
- IEC 61000-4-2 (ESD Air): $\pm 30\text{kV}$
- IEC 61000-4-2 (ESD Contact): $\pm 30\text{kV}$
- IEC 61000-4-5 (Lightning 8/20 μs): 10A

Application information

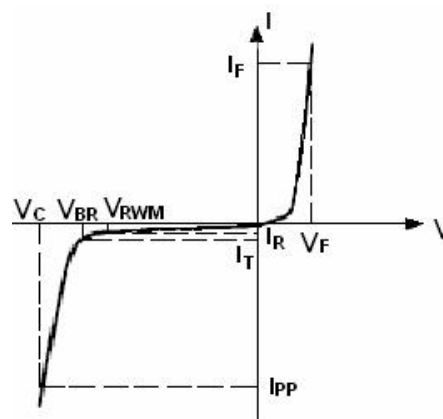
- Hand-Held Portable Applications
- Networking and Telecom
- Notebooks, Desktops, Servers
- Automotive Electronics Serial and Parallel Ports

Schematic & Pin configuration

Simplified outline	Graphic symbol
	

Portion Electronics Parameter

Symbol	Parameter
I_{PP}	Maximum Reverse Peak Pulse Current
V_C	Clamping Voltage @ I_{PP}
V_{RWM}	Working Peak Reverse Voltage
I_R	Reverse Leakage Current @ V_{RWM}
I_T	Test Current
V_{BR}	Breakdown Voltage @ I_T
I_F	Forward Current
V_F	Forward Voltage @ I_F



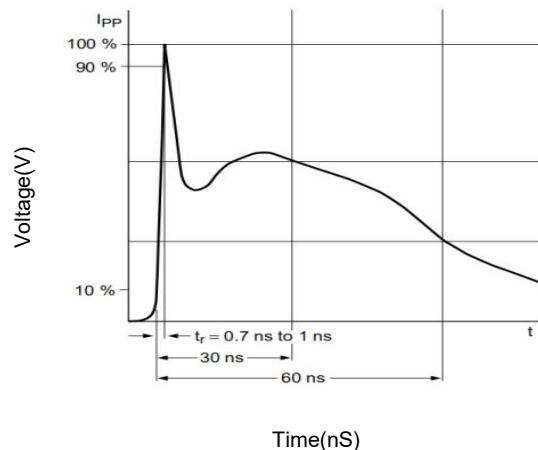
Maximum Ratings ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Value	Unit
Peak Pulse Power ($T_p = 8/20\mu\text{s}$)	P_{PPM}	130	W
Rated Peak Pulse Current ($T_p = 8/20\mu\text{s}$)	I_{PPM}	10	A
ESD voltage IEC 61000-4-2 (air discharge)	V_{ESD}	30	kV
ESD voltage IEC 61000-4-2 (contact discharge)	V_{ESD}	30	kV
Maximum lead temperature for soldering during 10s	T_L	260	$^{\circ}\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^{\circ}\text{C}$
Operating Temperature Range	T_J	-40 to +125	$^{\circ}\text{C}$

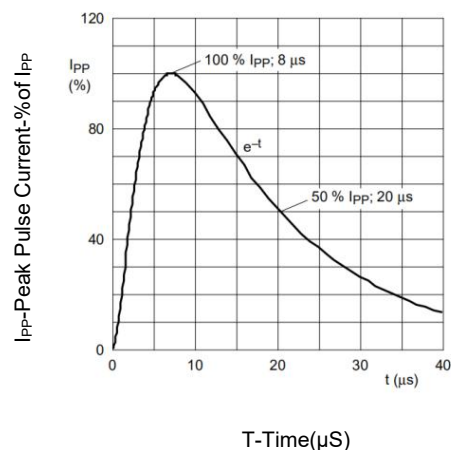
Electrical Characteristics ($T_A = 25\text{ }^{\circ}\text{C}$, unless otherwise specified)

Parameter	Symbol	Min	Typ	Max	Unit	Condition
Reverse Working Voltage	V_{RWM}	--	--	5	V	
Breakdown Voltage	V_{BR}	6.5	--	8.5	V	$I_T = 1\text{mA}$
Leakage Current I_{Leak}	I_R	--	--	100	nA	$V_{RWM} = 5\text{V}$
Clamping Voltage	V_C	--	7.8	--	V	$I_{pp} = 1\text{A}, T_p = 8/20\mu\text{s}$
Clamping Voltage	V_C	--	10	13	V	$I_{pp} = 10\text{A}, T_p = 8/20\mu\text{s}$
Junction Capacitance	C_j	--	80	100	pF	$V_R = 0\text{V}, f = 1\text{MHz}$
Junction Capacitance	C_j	--	36	--	pF	$V_R = 5\text{V}, f = 1\text{MHz}$

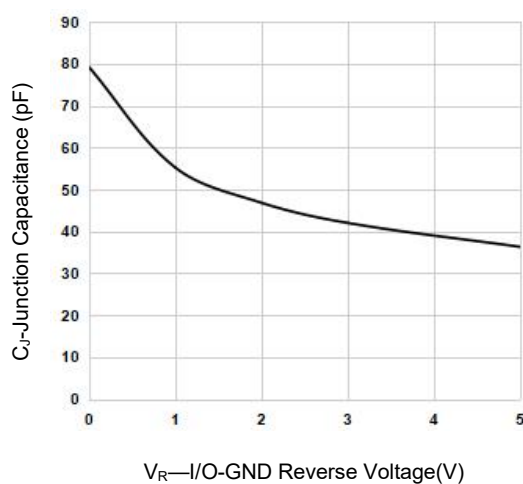
Typical Performance Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise Specified)



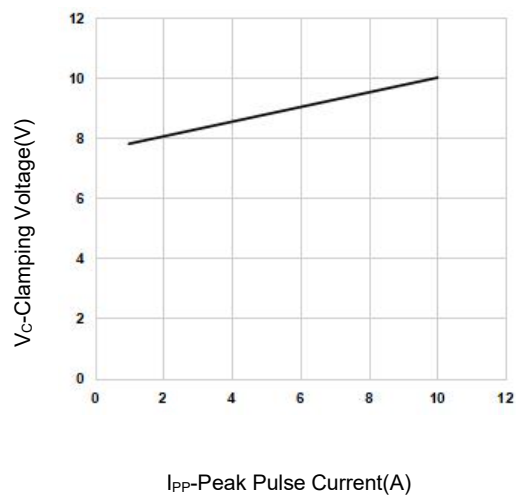
IEC61000-4-2 Pulse Waveform



IEC61000-4-5 8X20 μs Pulse Waveform



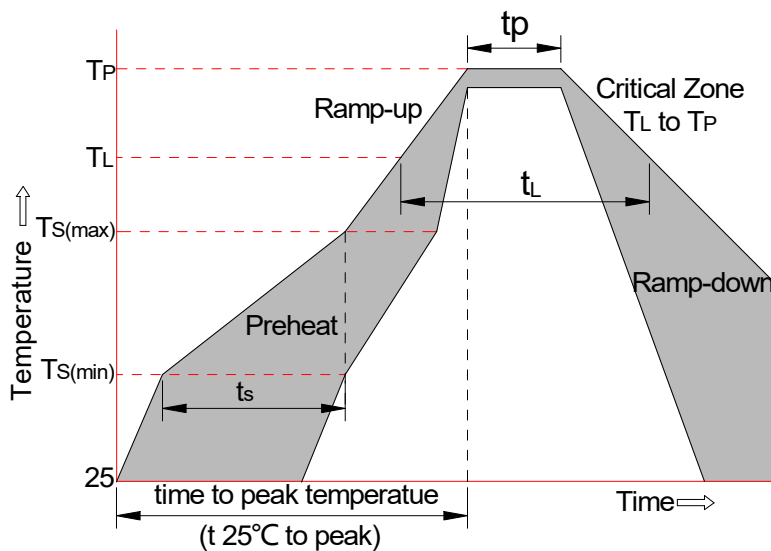
Junction Capacitance vs. Reverse Voltage



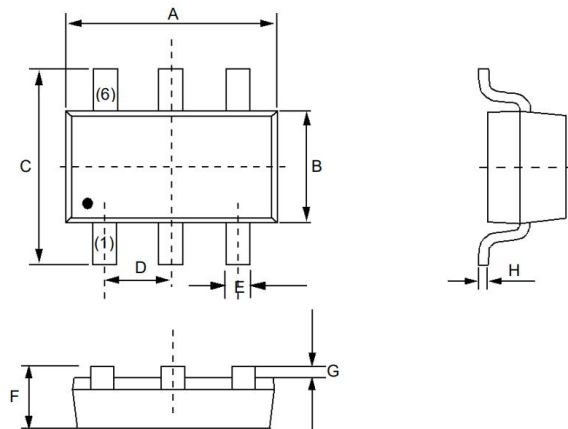
Clamping Voltage vs. Peak Pulse Current

Soldering Parameters

Reflow Condition		Pb-Free Assembly
Pre-heat	-Temperature Min ($T_{s(min)}$)	+150°C
	-Temperature Max($T_{s(max)}$)	+200°C
	-Time (Min to Max) (t_s)	60-180 secs.
Average ramp up rate (Liquid us Temp (T_L) to peak)		3°C/sec. Max
$T_{s(max)}$ to T_L - Ramp-up Rate		3°C/sec. Max
Reflow	-Temperature(T_L)(Liquid us)	+217°C
	-Temperature(t_L)	60-150 secs.
Peak Temp (T_p)		+260(+0/-5)°C
Time within 5°C of actual Peak Temp (t_p)		30 secs. Max
Ramp-down Rate		6°C/sec. Max
xTime 25°C to Peak Temp (T_P)		8 min. Max
Do not exceed		+260°C



Package Outline Dimensions (SOT363)



SYMBOL	MILLIMETERS	
	MIN	MAX
A	1.80	2.20
B	1.10	1.40
C	2.10	2.40
D	0.65BSC	
E	0.15	0.35
F	0.90	1.1
G	0.00	0.12
H	0.10	0.20

Ordering information

Package	Reel Size	Packaging (pcs)
SOT363	7 Inch	3000/Tape & Reel