

ES0542

Low Capacitance TVS Array

Description

ES0542 integrates 2 channels of low capacitance steering diodes and an additional zener diode to provide protection for electronic equipment that may experience destructive electrostatic discharges (ESD).

ES0542 can safely absorb repetitive ESD strikes above the maximum level specified in the IEC61000-4-2 international standard ($\pm 8\text{kV}$ contact discharge) without performance degradation. The low loading capacitance makes it ideal for protecting high-speed signal lines such as USB2.0 and 1Gb Ethernet with an extremely low dynamic resistance to protect the most sensitive, state of the art chipsets against ESD

Features

- Array of surge rated diodes with internal TVS Diode
- Small form factor uDFN package provides flow through routing to simplify PCB layout
- Low capacitance ($<1\text{pF}$) for high-speed interfaces
- Low leakage current and clamping voltage
- Low operating voltage: 5.0V
- Solid-state silicon-avalanche technology
- RoHS Compliant Package

Applications

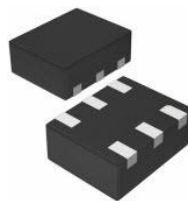
- LCD/PDP TVS
- External Storages
- DVD/Blu-ray Players
- Set Top Boxes
- Smartphones
- Ultrabooks/Notesbooks
- Portable Medical
- Automotive Electronics
- IEC61000-4-2(ESD) 25kV(air), 15kV(Contact)
- IEC61000-4-4(EFT) 80A(5/50ns)
- IEC61000-4-5(Surge) 8A(8/20us)

Mechanical Data

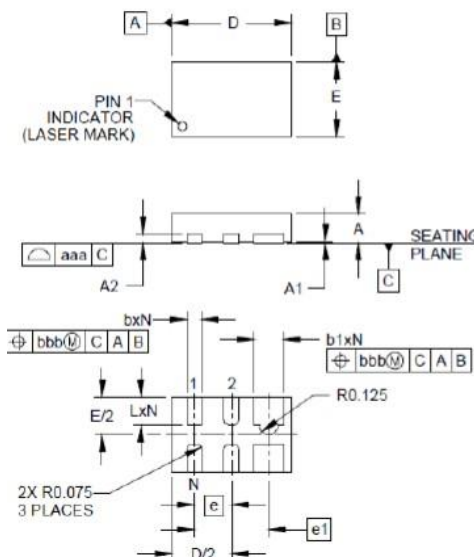
Case: DFN0603 Molded Plastic

Packing & Order Information

3,000/Reel



**RoHS
COMPLIANT**

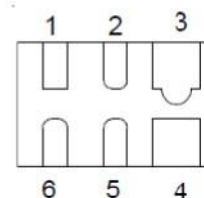
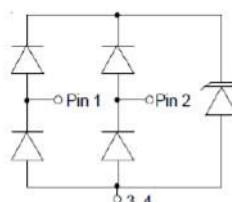


DIM	DIMENSIONS					
	INCHES			MILLIMETERS		
	MIN	NOM	MAX	MIN	NOM	MAX
A	.015	.016	.017	0.37	0.40	0.43
A1	0.00	.001	.002	0.00	0.03	0.05
A2	(.005)			(0.13)		
b	.006	.008	.010	0.15	0.20	0.25
b1	.014	.016	.018	0.35	0.40	0.45
D	.059	.063	.067	1.50	1.60	1.70
E	.035	.039	.043	0.90	1.00	1.10
e	.020 BSC			0.50 BSC		
e1	.039 BSC			1.00 BSC		
L	.012	.015	.017	0.30	0.38	0.43
N	4			4		
aaa	.003			0.08		
bbb	.004			0.10		

Graphic symbol



Functional diagram



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MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Absolute Ratings

Symbol	Parameter	Value	Unit
P _{PP}	Peak Pulse Power (tp= 8/20μs)	75	W
I _{PP}	Peak Pulse Power (tp= 8/20μs)	5	A
T _J	Maximum junction temperature	-55 to +125	°C
T _{STG}	Storage Temperature Range	-55 to +150	°C

Electrical Characteristics

Part Numbers	V _{BR}			I _T	V _{RWM}	I _R	C
	Min.	Typ.	Max.				Typ(Note 1)
	V			mA	V	μA	PF
ES0542	6.0	7.0	9.0	1	5	1	0.3

Note 1: Capacitance between I/O pins.

■ Typical Device Characteristics

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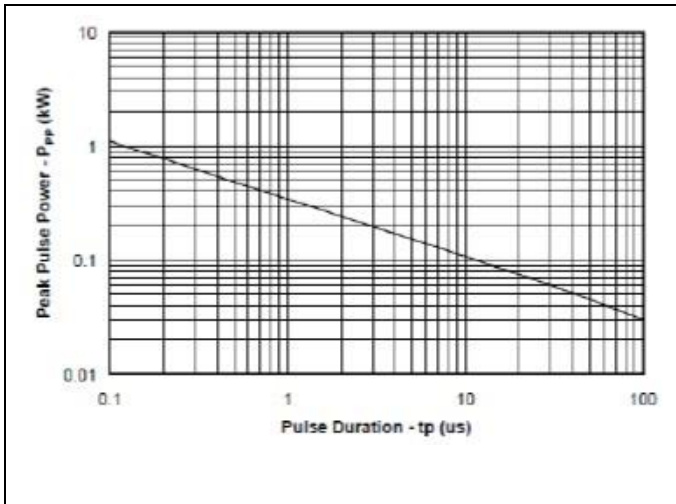


FIG.1-NON-REPETITIVE PEAK PULSE POWER VS. TIME

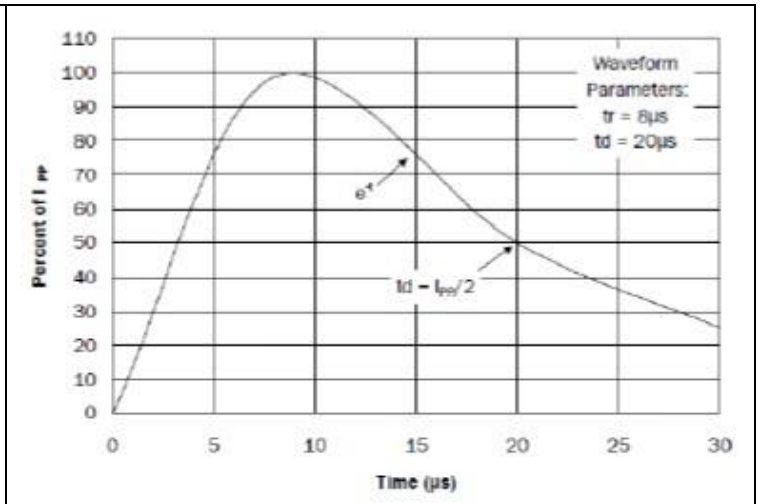


FIG.2-PULSE WAVEFORM

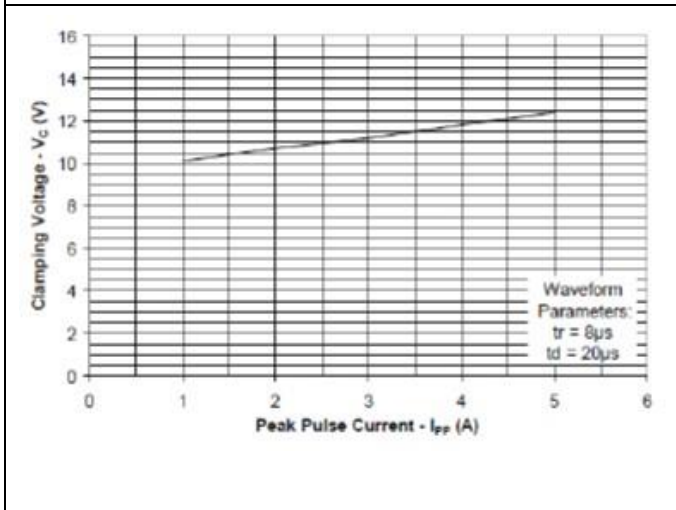


FIG.3-CLAMPING VOLTAGE VS. PEAK PULSE CURRENT

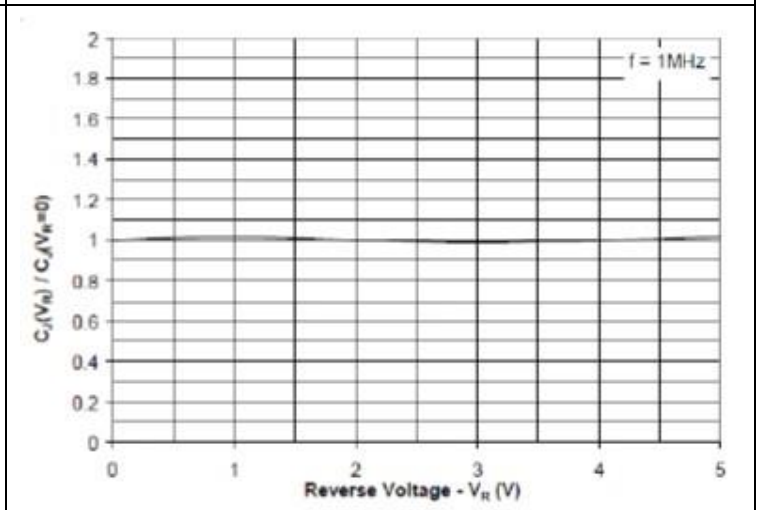


FIG.4-NORMALIZED CAPACITANCE VS. REVERSE VOLTAGE

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