

Low-Capacitance ESD Protection Diode Arrays

Features:

- ESD Protection > 30 Kilovolts
- Low Clamping Voltage
- Provides Four(4) Lines of Protection
- Low Leakage Current < 100nA
- Low Capacitance: 5pF Typical
- Low clamping voltage
- Full RoHS compliance

Applications:

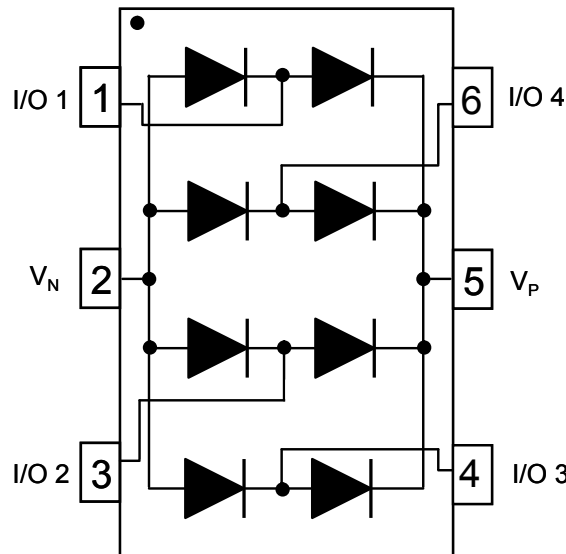
- Ethernet – 10/100/1000 Base T
- USB Port
- Set Top Box Interface
- Sensor Interface
- Handheld Electronics
- FireWire

Product Description

The ESD2025 transient voltage suppressor array provides a very high level of protection for sensitive electronic components, which may be subjected to electrostatic discharge (ESD). The ESD2025 devices safely dissipate ESD strikes, exceeding the IEC 61000-4-2 International Standard, Level 4 ($\pm 8\text{kV}$ contact discharge). All pins are rated to withstand $\pm 20\text{kV}$ ESD pulses using the IEC 61000-4-2 contact discharge method. Using the MIL-STD-883D (Method 3015) specification for Human Body Model (HBM) ESD, all pins are protected from contact discharges of greater than $\pm 30\text{kV}$.

The ESD2025 is available with lead-free finishing, supporting the current global industry movement to lead-free manufacturing.

Pin Configuration



OBJECTIVE DATA SHEET

OnChip

ESD2025

ABSOLUTE MAXIMUM RATINGS		
PARAMETER	RATING	UNITS
Storage Temperature Range	-55 to +150	°C
Package Power Dissipation SOT23-3	0.125	W

STANDARD OPERATING CONDITIONS		
PARAMETER	UNITS	UNITS
Operating Temperature	-40 to +85	°C

ELECTRICAL CHARACTERISTICS						
SYMBOL	PARAMETER	CONDITIONS	MIN	TYP	MAX	UNITS
C	Capacitance	$T_A = 25^\circ\text{C}$, 5VDC, 1MHz		5		pF
V_{RSO}	Reverse Stand-off Voltage	$I_R = 10\mu\text{A}$, 25°C , $T_A = 25^\circ\text{C}$	5.5			V
		$I_R = 1\text{mA}$, $T_A = 25^\circ\text{C}$	6.1			V
I_{LEAK}	Leakage Current	$V_{\text{IN}} = 5\text{VDC}$, $T_A = 25^\circ\text{C}$		1		μA
V_{SIG}	Small Signal Clamp Voltage					
	Positive Clamp	$I = 10\text{mA}$, $T_A = 25^\circ\text{C}$	6.2	6.8	8.0	V
	Negative Clamp	$I = -10\text{mA}$, $T_A = 25^\circ\text{C}$	-0.4	-0.8	-1.2	V
V_{ESD}	ESD Withstand Voltage					
	Human Body Model, MIL-STD-883, Method 3015	Notes 1 & 2	± 30			kV
	Contact Discharge per IEC 61000-4-2 standard	Notes 1 & 2	± 20			kV
R_D	Diode Dynamic Resistance					
	Forward Conduction			1.2		Ω
	Reverse Conduction			1.5		Ω

Note 1: Guaranteed by design and characterization.

**Note 2: ESD voltage applied between channel pins & ground, one pin at a time; all other channel pins open;
all GND pins grounded.**

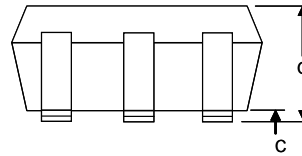
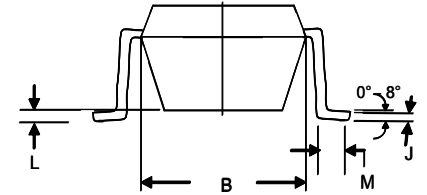
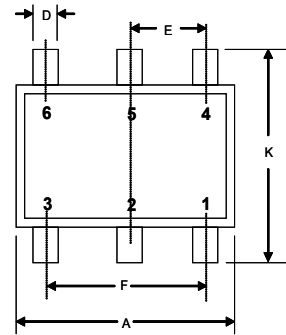
Ordering Information

PART NUMBERING INFORMATION			
Pins	Package	Ordering Part Number	Part Marking
6	SOT23-6	ESD2025-04TR	D20T
6	SC70-6	ESD2025-04SR	20S

Parts are shipped in Tape and Reel form unless otherwise specified.

SOT-23-6 PACKAGE OUTLINE & DIMENSIONS

PACKAGE DIMENSIONS				
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	2.80	3.05	0.110	0.120
B	1.50	1.75	0.0059	0.070
C	0.90	1.30	0.036	.051
D	0.35	0.50	0.014	0.020
E	0.85	1.05	0.033	0.040
F	1.70	2.10	0.067	0.083
G	0.90	1.45	0.036	0.057
J	0.09	0.20	0.003	0.008
K	2.60	3.00	0.102	0.118
L	0.20 TYP	0.20 TYP	0.007 TYP	0.007 TYP
M	0.35	0.55	0.014	0.022



MOUNTING PAD

TYPICAL		
DIM	Millimeters	Inches
1	0.70	0.028
2	1.90	0.074
3	0.95	0.037
4	2.40	0.094
5	1.00	0.039

