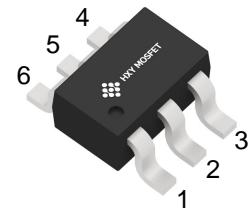




## Description

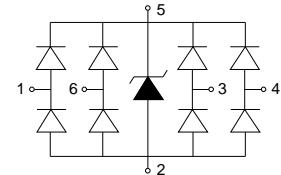
The DT1042-04TS-7 is a 4-channel ultra low capacitance rail clamp ESD protection diodes array. Each channel consists of a pair of ESD diodes that steer positive or negative ESD current to either the positive or negative rail. A zener diode is integrated in to the array between the positive and negative supply rails. In the typical applications, the negative rail pin (assigned as GND) is connected with system ground. The Positive ESD current is steered to the ground through an ESD diode and Zener diode and the positive ESD voltage is clamped to the zener voltage.



SOT-23-6L

## Features

- ★ Protecting 4 unidirectional lines
- ★ Provides ESD protection to IEC61000-4-2 level 4
  - $\pm 20\text{kV}$  air discharge
  - $\pm 20\text{kV}$  contact discharge
- ★ Low clamping voltage
- ★ Low operating voltage
- ★ Improved zener structure
- ★ Ultra-low capacitance: 0.4pF Typ
- ★ RoHS compliant.



Circuit Diagram

## Ordering Information

Product ID	Pack	Qty(PCS)
DT1042-04TS-7	SOT-23-6L	3000

## Absolute Ratings(T<sub>amb</sub> = 25°C)

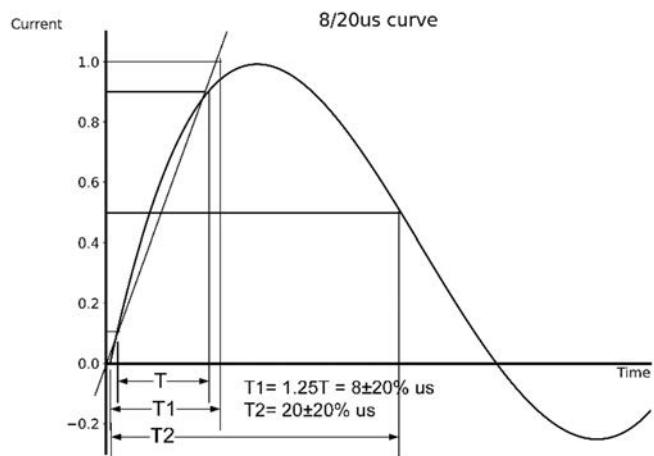
Characteristics	Symbol	Ratings	Unit
Peak Pulse Power(8/20μs)	P <sub>PP</sub>	80	W
Peak Pulse Current(8/20μs)	I <sub>PP</sub>	5.5	A
ESD per IEC 61000-4-2(Air)	V <sub>ESD1</sub>	$\pm 20\text{kV}$	kV
ESD per IEC 61000-4-2(Contact)	V <sub>ESD2</sub>	$\pm 20\text{kV}$	kV
Operating Temperature Range	T <sub>opr</sub>	-55 ~ +125	°C
Storage Temperature Range	T <sub>stg</sub>	-55 ~ +150	°C



**Electrical Characteristics** ( $T_{amb}=25^{\circ}C$ )

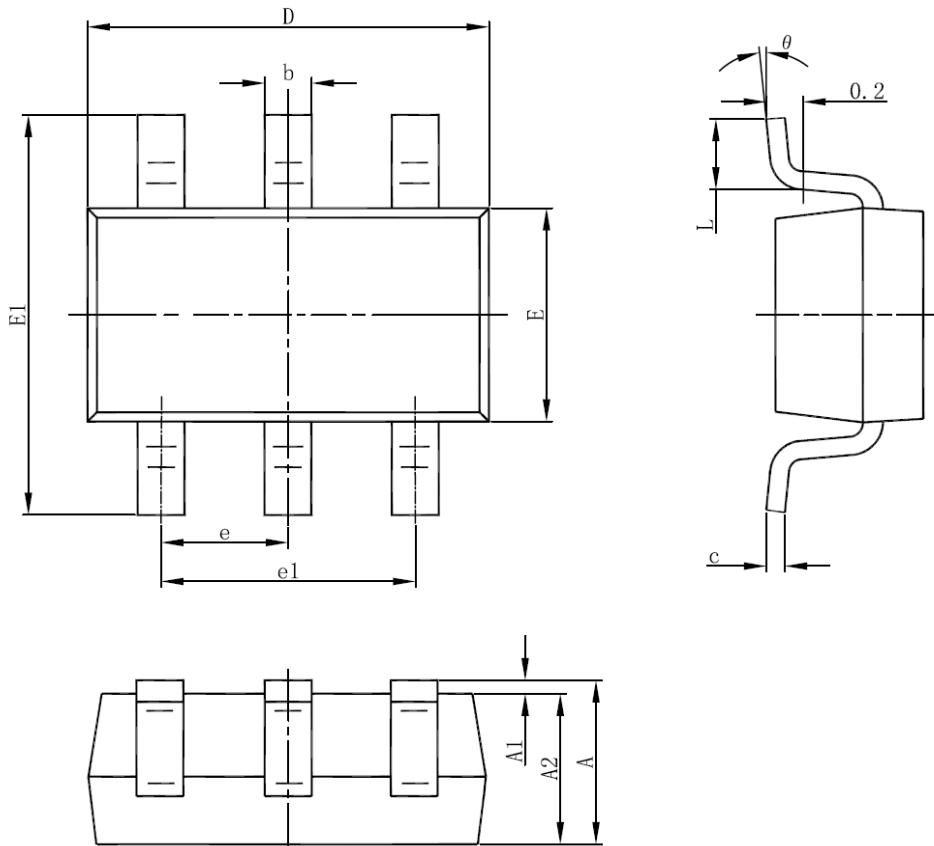
Symbol	Parameter	Test Condition	Min	Typ	Max	Units
$V_{RWM}$	Reverse Working Voltage				5.0	V
$V_{BR}$	Reverse Breakdown Voltage	$I_T = 1\text{mA}$	6.0			V
$I_R$	Reverse Leakage Current	$V_{RWM} = 5.0\text{V}$			1.0	$\mu\text{A}$
$V_c$	Clamping Voltage	$I_{PP} = 1\text{A}, t_p = 8/20\mu\text{s}$		10		V
		$I_{PP} = 5.5\text{A}, t_p = 8/20\mu\text{s}$		16		V
$C_J$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$ Any I/O pin to GND		0.8		$\text{pF}$
$C_J$	Junction Capacitance	$V_R = 0\text{V}, f = 1\text{MHz}$ Any I/O pin to I/O		0.4		$\text{pF}$

**Typical Characteristics**





### SOT-23-6L Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°



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