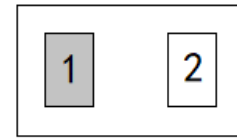
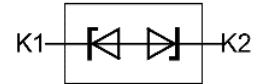


## Features

- Bidirectional ESD protection of one line
- Extremely low diode capacitance  $C_d = 0.35$  pF
- Extremely low clamping voltage to protect sensitive I/Os
- Extremely low inductance protection path to ground
- IEC 61000-4-2  $\pm 22$  kV contact  $\pm 25$  kV air
- IEC 61000-4-4 (EFT) 40A (5/50ns)
- IEC 61000-4-5 (Lightning) 10A (8/20 $\mu$ s)
- RoHS Compliant

## Applications

- USB 3.0, USB 2.0, MHL
- HDMI 2.0, Display Port 1.3, eSATA
- Unified Display Interface (UDI)
- Digital Visual Interface (DVI)
- 1G/2.5G/5G/10G Ethernet


**CSP0603**

**Device Symbol**

## Limiting values

Parameter	Symbol	Condition	Min	Typ	Max	Unit
Peak pulse power	$P_{pp}$	$T_p = 8/20 \mu s$		60		W
Rated peak pulse current	$I_{ppm}$	$T_p = 8/20 \mu s$			10	A
Reverse standoff voltage	$V_{RWM}$	$T_{amb} = 25 \text{ }^\circ\text{C}$			9	V
Breakdown voltage	$V_{BR}$	$I_R = 1 \text{ mA}; T_{amb} = 25 \text{ }^\circ\text{C}$	9.5	10.5	15	V
Reverse leakage current	$I_{RM}$	$V_{RWM} = 9\text{V}; T_{amb} = 25 \text{ }^\circ\text{C}$		0.01	0.05	$\mu\text{A}$
Electrostatic discharge	$V_{ESD}$	IEC 61000-4-2 contact discharge		-22	+22	kV
		IEC 61000-4-2 air discharge		-25	+25	kV
Diode capacitance	$C_d$	$f = 1 \text{ MHz}; V_R = 0 \text{ V}; T_{amb} = 25 \text{ }^\circ\text{C}$		0.35	0.5	pF
Clamping voltage	$V_{CL}$	$I_{pp} = 10\text{A}; T_p = 8/20\mu s; T_{amb} = 25 \text{ }^\circ\text{C}$		6		V
Trigger voltage	$V_t$	$I_{pp} = 10\text{A}; T_p = 8/20\mu s$		13		V
Dynamic resistance	$R_{dyn}$	$0 \text{ A} \leq I_R \leq 30 \text{ A}; T_p = \text{TLP}; T_{amb} = 25 \text{ }^\circ\text{C}$		0.25		$\Omega$

Parameter	Symbol	Value	Unit
Junction temperature	$T_J$	-55 to +125	$^\circ\text{C}$
Storage temperature range	$T_{stg}$	-55 to +150	$^\circ\text{C}$

# Typical Characteristic Curves

Fig.1 Peak Pulse Power Rating Curve

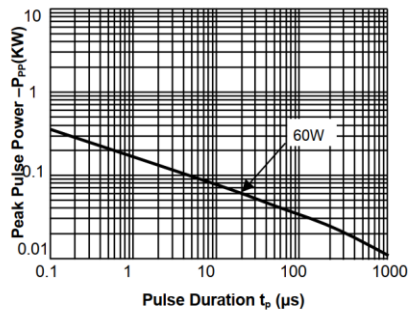


Fig.2 Pulse Derating Curve

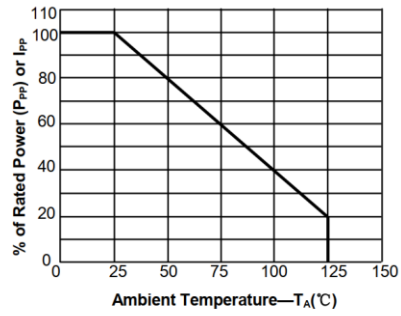


Fig.3 IEC61000-4-2 +8kV Contact Discharge

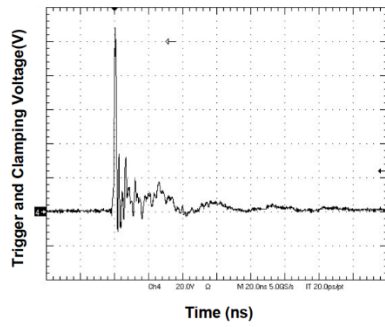


Fig.4 IEC61000-4-2 -8kV Contact Discharge

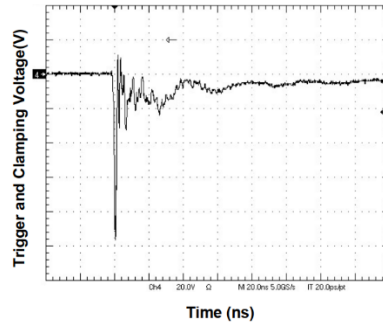


Fig.5 Transmission Line Pulse (tp=100ns)

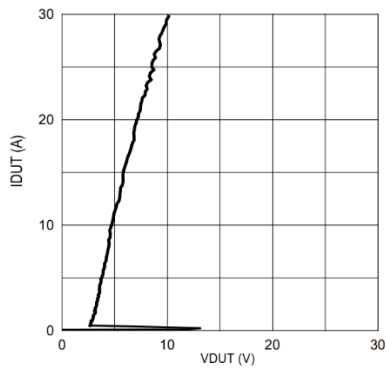
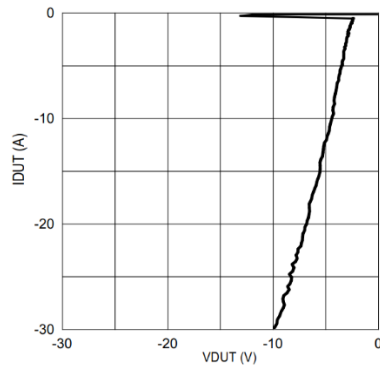
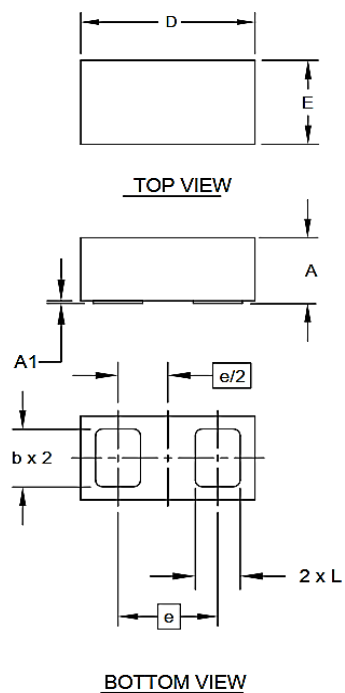


Fig.6 Transmission Line Pulse (tp=100ns)

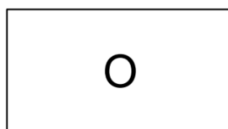


## Product Dimension



Unit		A	A1	b	D	E	e	L
mm	max	0.227	0.05	0.240	0.640	0.340		0.180
	nom	0.206	0.01	0.220	0.615	0.315	0.355BSC	0.160
	min	0.185	0.00	0.200	0.590	0.290		0.140

## Marking



## Order Information

Device	Package	Carrier	Quantity	HSF Status
VT9VC0603-10A	CSP0603	Tape & Reel(7'')	10000pcs/Reel	RoHS Compliant