

## Features

- ESD Protection of One Line
- Ultra Low Capacitance
- Low Clamping Voltage
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings

IEC61000-4-2 (ESD)	Air	±15KV
	Contact	±15KV
Peak Pulse Current (8/20μs)	I <sub>PP</sub>	5A
Peak Pulse Power (8/20μs) <sup>(Note2)</sup>	P <sub>PK</sub>	35W
Operating Junction Temperature Range	T <sub>J</sub>	-40°C to +125°C
Storage Temperature Range	T <sub>STG</sub>	-55°C to +150°C

Note :

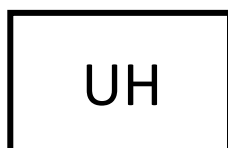
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

2. Non-repetitive current pulse 8/20 μs exponential decay waveform according to IEC61000-4-5.

## Internal Structure

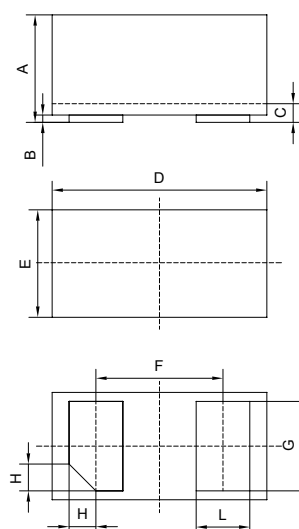


## Marking Code



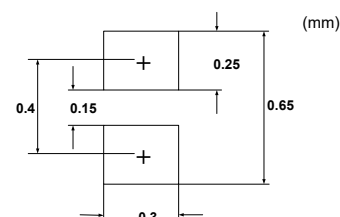
# Snap Back ESD Protection Device

## CSP0201

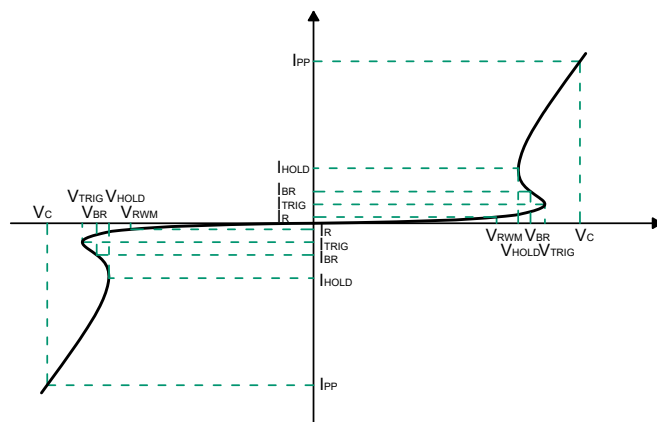


DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.008	0.013	0.21	0.33	
B	0.000	0.002	0.00	0.05	
C	0.005	0.007	0.12	0.18	
D	0.022	0.026	0.55	0.65	
E	0.010	0.014	0.25	0.35	
F	0.014		0.355		TYP.
G	0.008	0.011	0.215	0.28	
H	0.003		0.079		TYP.
L	0.006	0.009	0.11	0.22	

## SUGGESTED SOLDER PAD LAYOUT



Symbol	Parameter
$V_{RWM}$	Peak Reverse Working Voltage
$I_R$	Reverse Leakage Current @ $V_{RWM}$
$V_{BR}$	Breakdown Voltage @ $I_T$
$I_{PP}$	Maximum Reverse Peak Pulse Current
$V_C$	Clamping Voltage @ $I_{PP}$
$V_{TRIG}$	Reverse Trigger Voltage
$I_{TRIG}$	Reverse Trigger Current
$V_{HOLD}$	Reverse Holding Voltage
$I_{HOLD}$	Reverse Holding Current
$C_J$	Junction Capacitance



#### Electrical Characteristics @ 25°C (Unless Otherwise Specified)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Units
Reverse Working Voltage	$V_{RWM}$				18	V
Reverse Breakdown Voltage	$V_{BR}$	$I_T=1mA$	19	22		V
Holding Voltage	$V_H$	$I_T=100mA$	2	2.9		
Reverse Leakage Current	$I_R$	$V_{RWM}=18V$			0.1	$\mu A$
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP}=1A, t_p=8/20\mu s$		4		V
Clamping Voltage <sup>Note1</sup>	$V_C$	$I_{PP}=5A, t_p=8/20\mu s$		6	8	V
Junction Capacitance	$C_J$	$V_R=0V, f=1MHz$		0.5		pF
Dynamic Resistance <sup>Note2</sup>	$R_{DYN}$	TLP, $t_p=100ns$		0.26		$\Omega$

Note :

1.Non-repetitive current pulse 8/20 $\mu s$  exponential decay waveform according to IEC61000-4-5.

2.TLP parameter:  $Z_0=50\Omega$ ,  $t_p=100ns$ ,  $t_r=2ns$ , averaging window from 60ns to 80ns.  $R_{DYN}$  is calculated from 4A to 16A.

## Curve Characteristics

Fig. 1 - 8 X 20 $\mu$ s Pulse Waveform

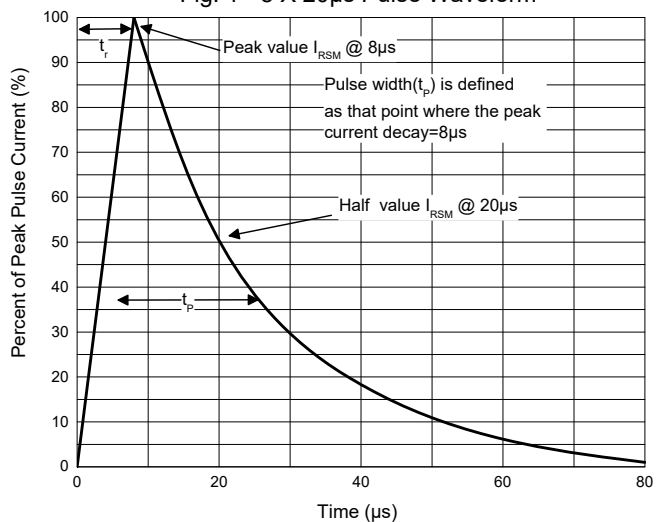


Fig. 2 - Pulse Derating Curve

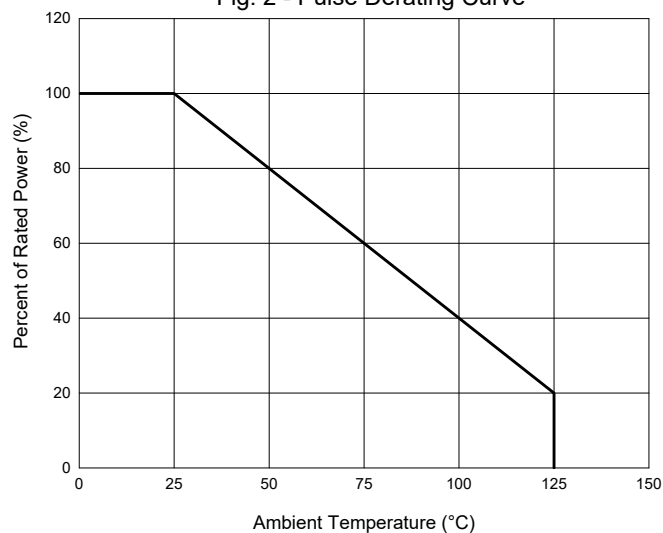


Fig. 3 - Capacitance Characteristics

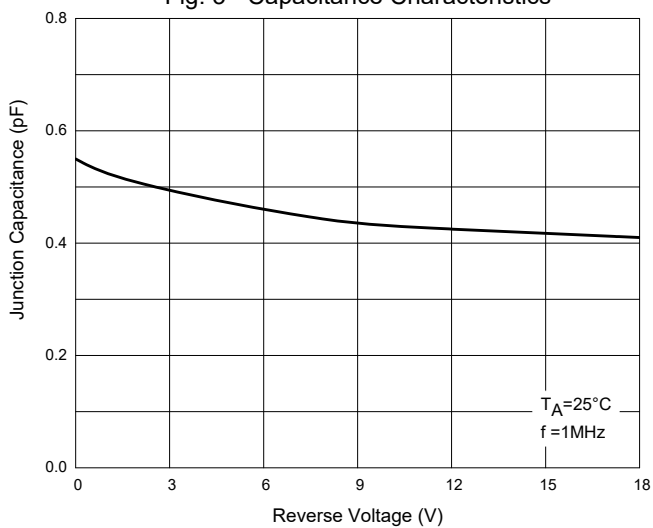


Fig. 4 - Clamping Voltage Characteristics

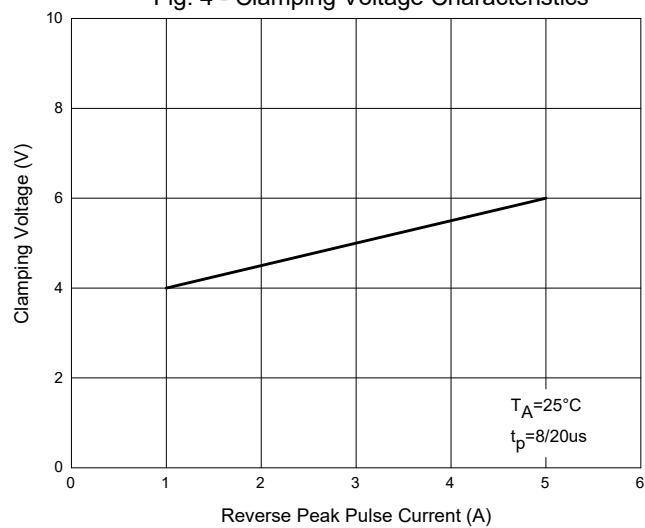


Fig. 5 - TLP Curve

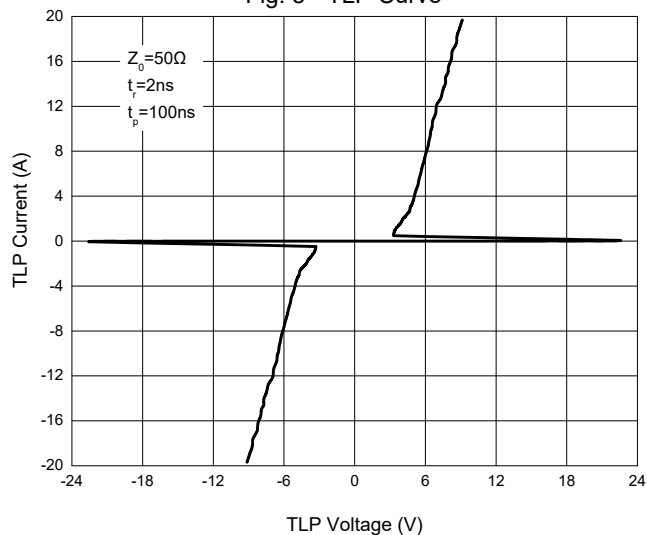


Fig. 6 - Insertion Loss VS. Frequency

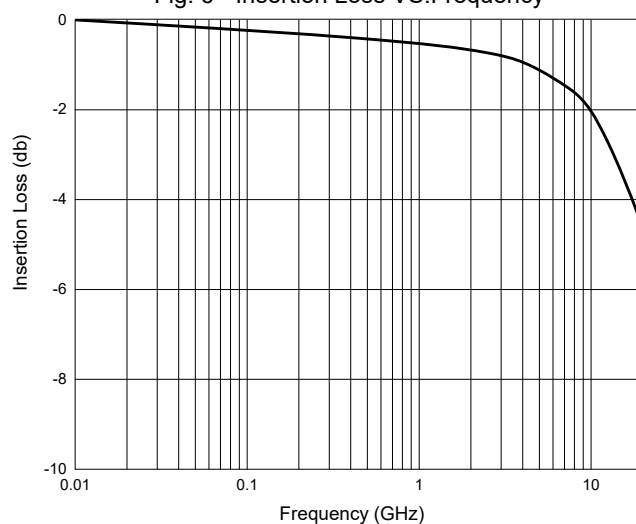


Fig. 7- Return Loss VS.Frequency

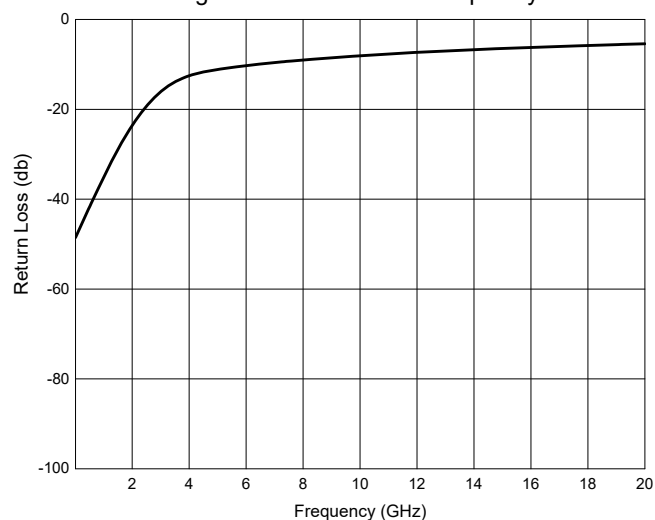
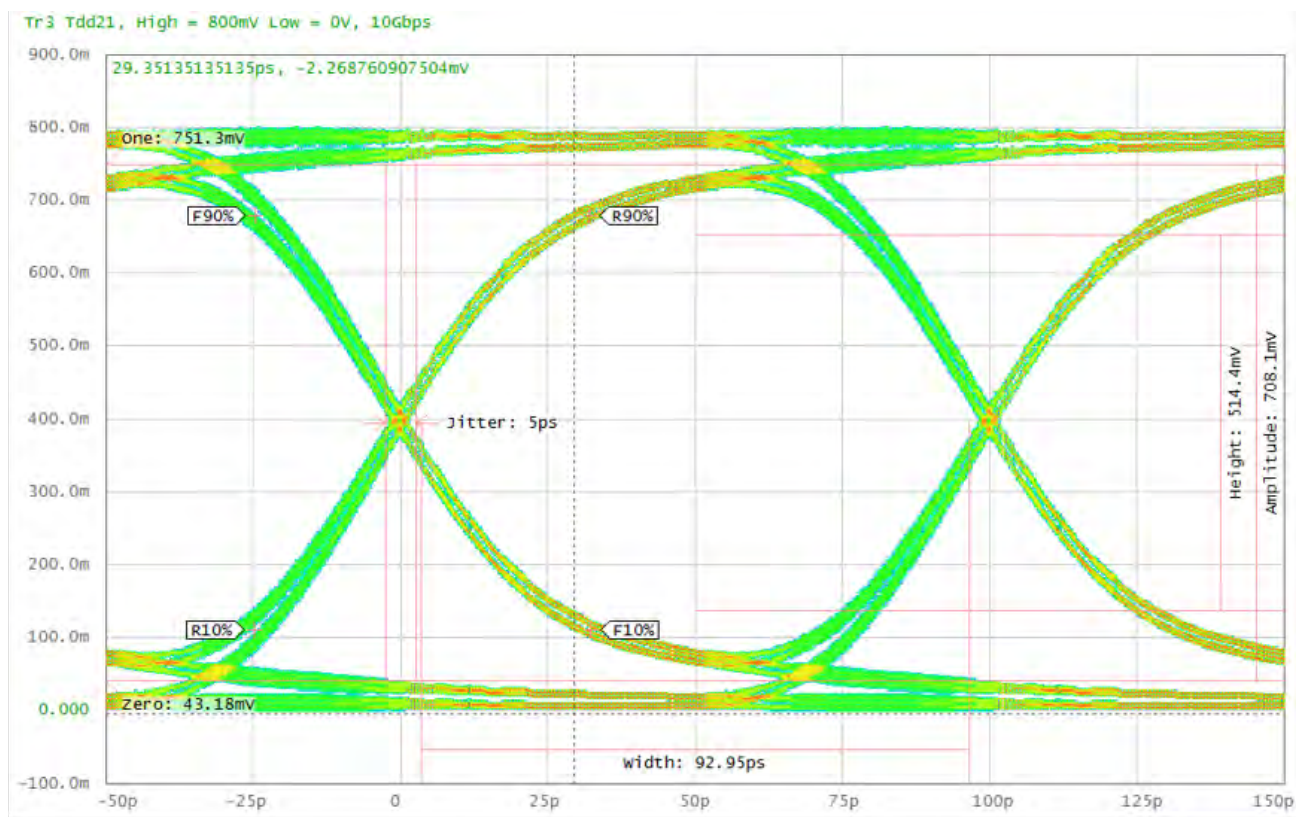


Fig. 8 - Eye Diagram (10 Gbps)



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 10Kpcs/Reel

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