

## LOW CAPACITANCE MINIATURE TVS ARRAY

### DESCRIPTION

The P0201D05C is a transient voltage suppressor array (TVS) designed to protect applications such as wireless telecommunication devices and portable electronics. The P0201D05C is available in a bidirectional configuration with a working voltage of 4.7V and a minimum breakdown voltage of 5.7V. This device is rated for 10 Watt peak pulse power using the 8/20 $\mu$ s waveform, which is sufficient protection for tertiary type lightning threats at key interface locations.

At higher operating frequencies or faster edge rates, insertion loss and signal integrity are a major concern. This device in conjunction with passive components integrated into a TVS/filter network can be used for EMI/RFI protection.

### FEATURES

- Compatible with IEC 61000-4-2 (ESD): Air - 15kV, Contact - 8kV
- 10 Watts Peak Pulse Power per Line ( $t_p = 8/20\mu s$ )
- Industry First 0201 Package for TVS Protection
- Bidirectional Configuration
- Provides 1 Line of Protection
- Low Clamping Voltage
- Easy Placement for Manufacturing
- Low Capacitance
- RoHS Compliant
- REACH Compliant

### APPLICATIONS

- Noise Suppression for Data Lines
- SMART Phones
- Portable Electronics

### MECHANICAL CHARACTERISTICS

- Molded JEDEC DFN-2-0201 Package
- Approximate Weight: 0.8 milligrams
- Lead-Free Pure-Tin Plating (Annealed)
- Solder Reflow Temperature:  
Pure-Tin - Sn, 100: 260-270°C
- 8mm Tape and Reel Per EIA Standard 481
- Flammability Rating UL 94V-0

### PIN CONFIGURATION



**TYPICAL DEVICE CHARACTERISTICS**
**MAXIMUM RATINGS @ 25°C Unless Otherwise Specified**

PARAMETER	SYMBOL	VALUE	UNITS
Operating Temperature	$T_A$	-55 to 150	°C
Storage Temperature	$T_{STG}$	-55 to 150	°C
Junction Temperature	$T_A$	150	°C
Peak Pulse Power (tp = 8/20µs)	$P_{PP}$	10	Watts
Power Dissipation	P	30	mW

**ELECTRICAL CHARACTERISTICS PER LINE @ 25°C Unless Otherwise Specified**

PART NUMBER	DEVICE MARKING	RATED STAND-OFF VOLTAGE  $V_{WM}$ VOLTS	MINIMUM BREAKDOWN VOLTAGE  @ 1mA $V_{(BR)}$ VOLTS	MAXIMUM CLAMPING VOLTAGE (Fig.1)  @ $I_p = 1A$ $V_C$ VOLTS	MAXIMUM PEAK PULSE CURRENT (Fig. 1)  @ 8/20µs $I_{PP}$ AMPS	MAXIMUM LEAKAGE CURRENT  @ 3.5V $I_D$ µA	TYPICAL CAPACITANCE  @0V, 1MHz C pF
P0201D05C	R	4.7	5.7	16.0	1	0.1	5

## TYPICAL DEVICE CHARACTERISTICS

FIGURE 1  
PULSE WAVE FORM

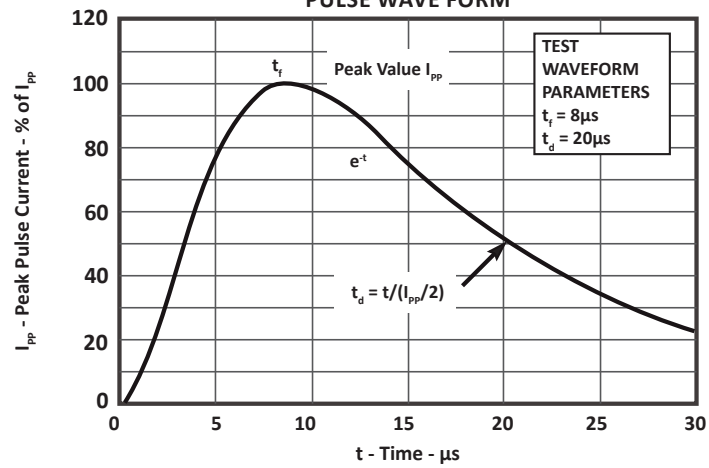
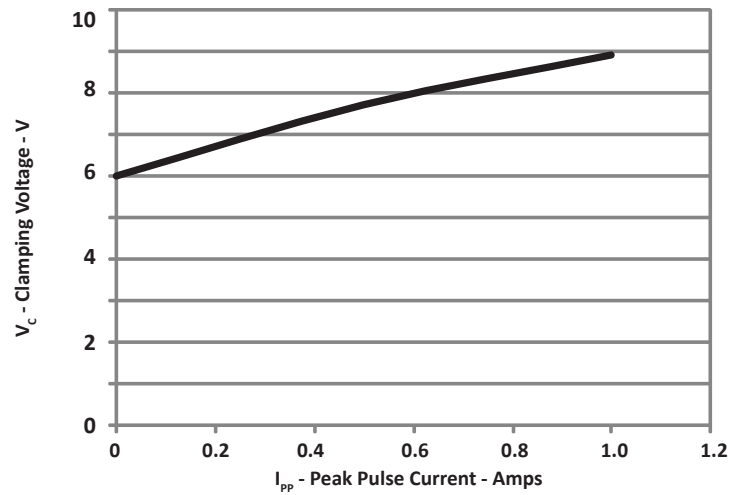


FIGURE 2  
TYPICAL CLAMPING VOLTAGE VS PEAK PULSE CURRENT



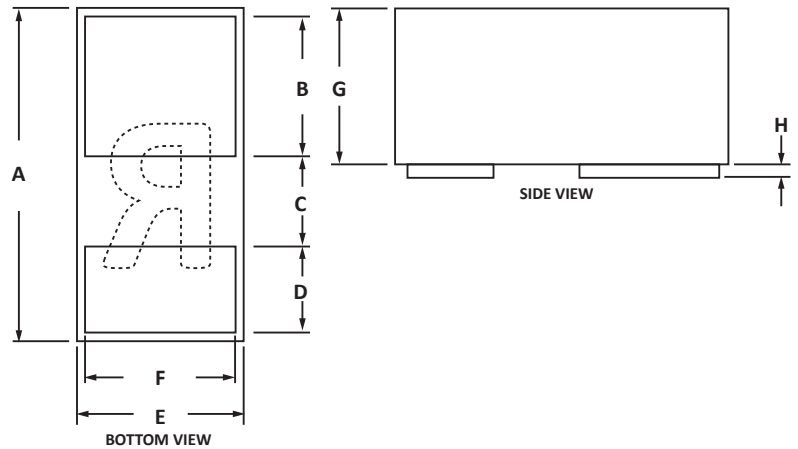
## DFN-2-0201 PACKAGE INFORMATION

## OUTLINE DIMENSIONS

DIM	MILLIMETERS			INCHES		
	MIN	NOM	MAX	MIN	NOM	MAX
A	0.609	0.635	0.660	0.024	0.025	0.026
B	0.228	0.254	0.279	0.009	0.010	0.011
C	0.127	0.152	0.177	0.005	0.006	0.007
D	0.127	0.152	0.177	0.005	0.006	0.007
E	0.279	0.304	0.330	0.011	0.012	0.013
F	0.228	0.254	0.279	0.009	0.010	0.011
G	0.250	0.260	0.270	0.0098	0.0102	0.0106
H	0.00	0.005	0.025	0.000	0.0002	0.001

## NOTES

1. Dimensioning and tolerances per ANSI Y14.M, 1985.
2. Controlling dimension: inches.
3. Dimensions are exclusive of mold flash and metal burrs.

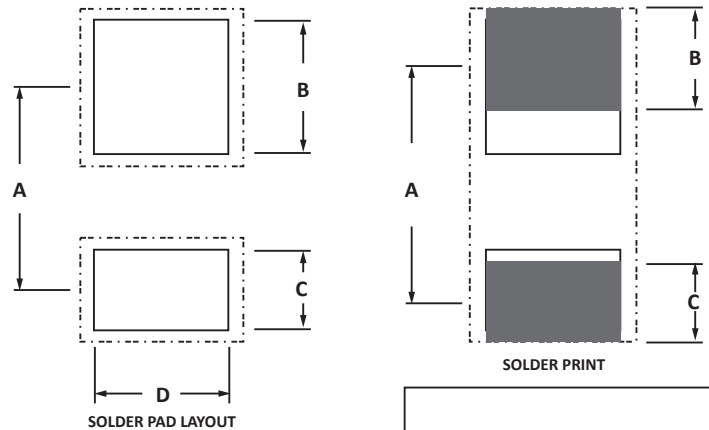


## SOLDER PAD DIMENSIONS

DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.331	0.381	0.013	0.015
B	0.228	0.279	0.009	0.011
C	0.127	0.177	0.005	0.007
D	0.228	0.279	0.009	0.011

## NOTES

1. Controlling dimension: inches.

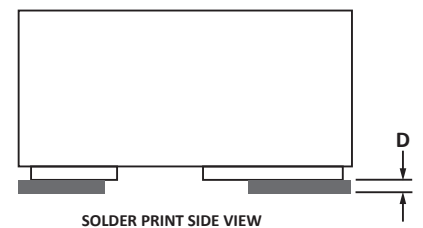


## SOLDER PRINT DIMENSIONS

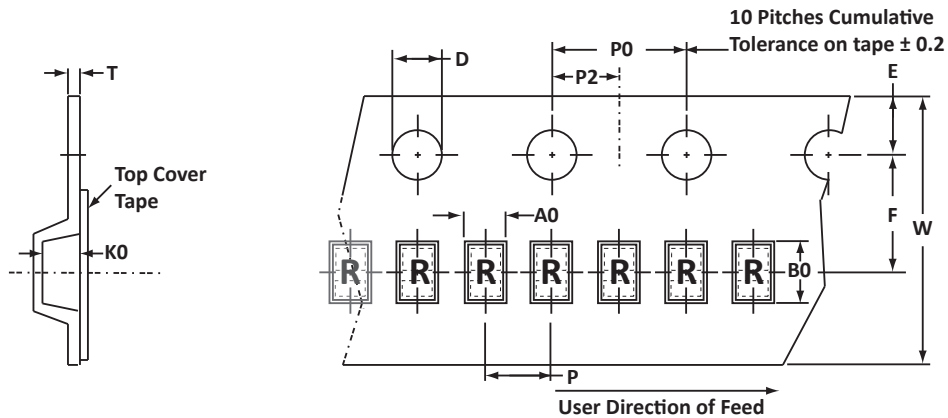
DIM	MILLIMETERS		INCHES	
	MIN	MAX	MIN	MAX
A	0.432	0.482	0.017	0.019
B	0.152	0.203	0.006	0.008
C	0.127	0.177	0.005	0.007
D	0.025	0.075	0.001	0.003

## NOTES

1. Controlling dimension: inches.



## TAPE AND REEL



## SPECIFICATIONS

REEL DIA.	TAPE WIDTH	A0	B0	K0	D	E	F	W	P0	P2	P	tmax
178mm (7")	8mm	0.37 ± 0.03	0.67 ± 0.03	0.35 ± 0.03	1.50 ± 0.10	1.75 ± 0.10	3.50 ± 0.05	8.00 ± 0.30	2.00 ± 0.05	1.00 ± 0.05	2.00 ± 0.05	0.25

## NOTES

- Dimensions are in millimeters.
- Surface mount product is taped and reeled in accordance with EIA-481.
- Suffix - T710 = 7" Reel - 10,000 pieces per 8mm tape.
- Marking on Part - marking code (see page 2).

Package outline, pad layout and tape specifications per document number 06095.R1 3/12.

## ORDERING INFORMATION

BASE PART NUMBER	LEADFREE SUFFIX	TAPE SUFFIX	QTY/REEL	REEL SIZE	TUBE QTY
PD0201D05C	n/a	-T710	10,000	7"	n/a

This device is only available in a Lead-Free configuration.

## COMPANY INFORMATION

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### COMPANY PROFILE

In business more than 20 years, ProTek Devices™ is a privately held semiconductor company. The company offers a product line of overvoltage protection and overcurrent protection components. These include transient voltage suppressor array (TVS arrays) avalanche breakdown diode, steering diode TVS array and electronics SMD chip fuses. These components deliver circuit protection in electronic systems from numerous overvoltage and overcurrent events. They include lightning; electrostatic discharge (ESD); nuclear electromagnetic pulses (NEMP); inductive switching; and electromagnetic interference (EMI) / radio frequency interference (RFI). ProTek Devices also offers high performance interface and linear products. They include analog switches; multiplexers; LED drivers; LED wafer die for ESD protection; audio control ICs; RF and related high frequency products.

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