

## Features

- Lead free device (RoHS Compliant\*)
- Small SC70-6L package
- ESD protection >25k V
- Protects 4 bidirectional or 5 unidirectional lines

## Applications

- Notebook computers
- Cell phones
- Digital cameras
- PDAs

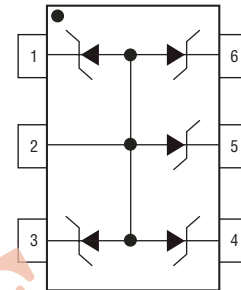
# CDSC706-T05C~T24C – TVS Diode Arrays

## General Information

The CDSC706-T series provides ESD and EFT protection for the external ports of portable electronic devices such as cell phones, handheld electronics and personal computers.

The ESD protection provided by the component enables a data port to withstand a minimum  $\pm 8$  KV Contact /  $\pm 15$  KV Air Discharge per the ESD test method specified in IEC 61000-4-2. The device measures 2.0 mm x 2.10 mm and is available in a SC70-6 package and intended to be mounted directly onto an FR4 printed circuit board.

The Bourns® device will meet IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements in normal use.



## Absolute Maximum Ratings (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	Value	Unit
Peak Pulse Power ( $t_p = 8/20 \mu\text{s}$ ) <sup>1</sup>	$P_{PK}$	100	W
Storage Temperature	$T_{STG}$	-55 to +150	$^\circ\text{C}$
Operating Temperature	$T_{OPR}$	-55 to +150	$^\circ\text{C}$

Note:

1. See Peak Pulse Power vs. Pulse Time.

## Electrical Characteristics (@ $T_A = 25^\circ\text{C}$ Unless Otherwise Noted)

Parameter	Symbol	CDSC706-				Unit
		T05C	T12C	T15C	T24C	
Breakdown Voltage Minimum @ 1 mA	$V_{BR}$	6	13.3	16.7	26.7	V
Working Peak Voltage	$V_{WM}$	5	12	15	24	V
Leakage Current @ $V_{WM}$	$I_D$	5	1	1	1	$\mu\text{A}$
Capacitance Typical @ 0 V, 1 MHz	$C_J$	60	30	25	20	pF
ESD Protection per IEC 61000-4-2		8				kV
Minimum Contact Discharge		15				kV
Minimum Air Discharge		40				A
EFT Protection per IEC 61000-4-4 @ 5/50 ns		40				A
Surge Protection per IEC 61000-4-5 @ 8/20 $\mu\text{s}$		12 @ 9 A	23.8 @ 4.2 A	33.3 @ 3 A	55.5 @ 1.8 A	V

\*RoHS Directive 2002/95/EC Jan 27 2003 including Annex.  
 Specifications are subject to change without notice.  
 Customers should verify actual device performance in their specific applications.

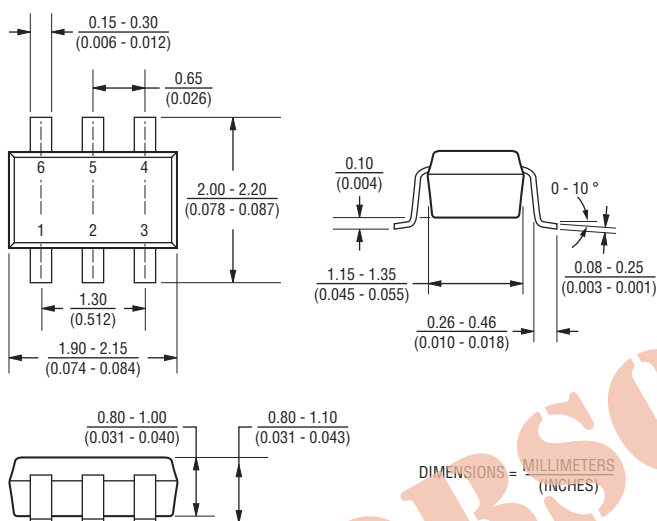
# CDSC706-T05C~T24C – TVS Diode Arrays

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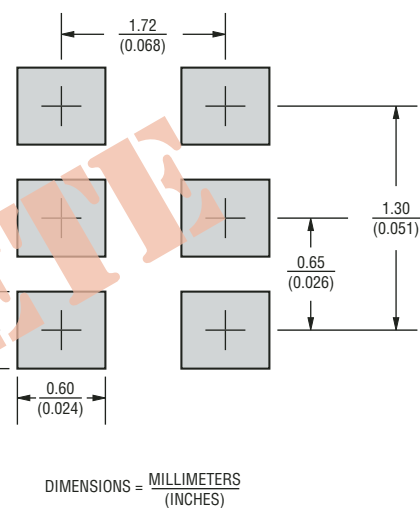
## Mechanical Characteristics

This is a molded JEDEC SC70-6L package with lead free 100 % Sn plating on the terminations. It weighs approximately 7 mg.

### Product Dimensions



### Recommended Footprint



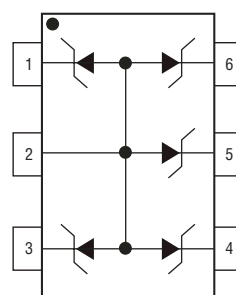
### How To Order

Parameter	Value
Common Code	CD
Package	SC706
Model	T
Working Peak Reverse Voltage	05
Suffix	C

CD SC706 - T 05 C

Common Code: CD = Chip Diode  
 Package: SC706 = SC70-6L Package  
 Model: T = Transient Voltage Suppressor  
 Working Peak Reverse Voltage: 05 = 5 V<sub>WM</sub> (Volts)  
 Suffix: C = Bidirectional Diode

### Block Diagram



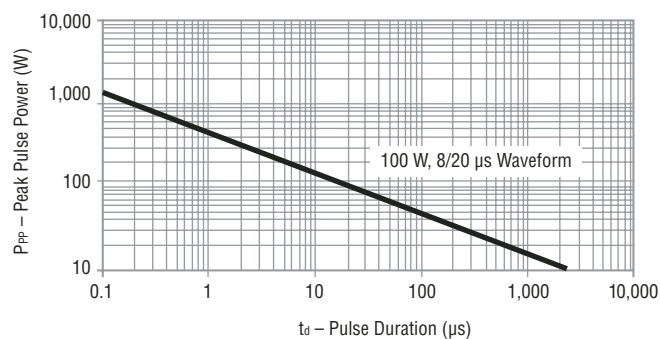
### Typical Part Marking

CDSC706-T05C	05C
CDSC706-T12C	12C
CDSC706-T15C	15C
CDSC706-T24C	24C

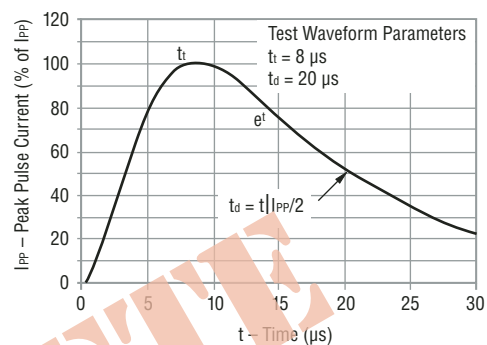
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## Performance Graphs

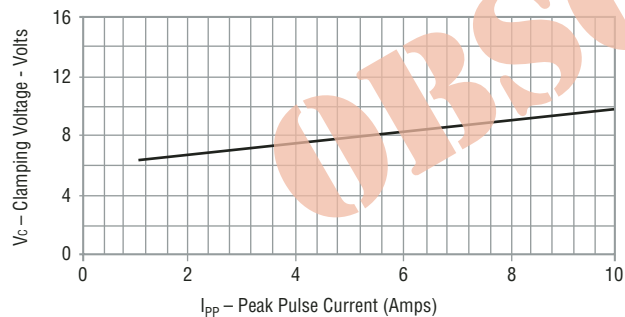
### Peak Pulse Power vs Pulse Time



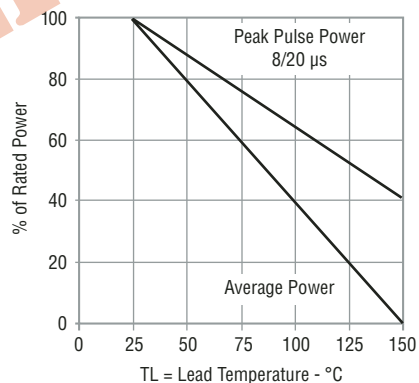
### Pulse Waveform



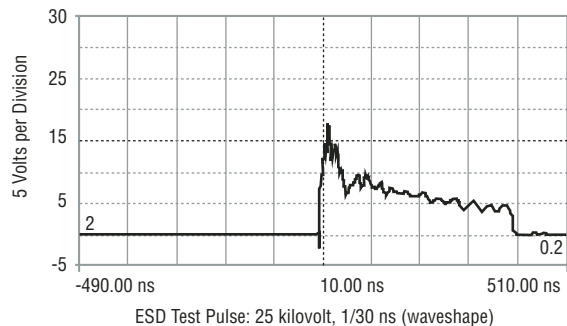
### Typical Clamping Voltage vs Peak Pulse Current



### Power Derating Curve



### Overshoot & Clamping Voltage

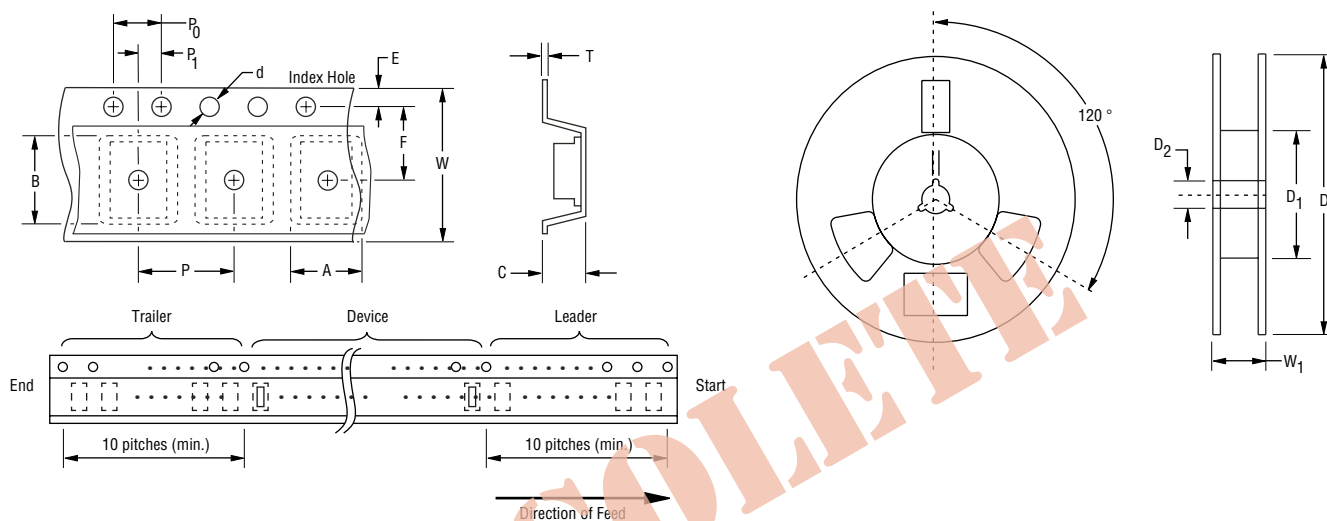


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## Packaging Information

The surface mount product is packaged in an 8 mm x 4 mm tape and reel format per EIA-481 standard.



Item	Symbol	SC70-6L
Carrier Width	A	$\frac{2.25 \pm 0.10}{(0.088 - 0.004)}$
Carrier Length	B	$\frac{2.34 \pm 0.10}{(0.092 - 0.004)}$
Carrier Depth	C	$\frac{1.22 \pm 0.10}{(0.048 - 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 - 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D <sub>1</sub>	$\frac{50.0}{(1.969)}$ Min.
Feed Hole Diameter	D <sub>2</sub>	$\frac{13.0 \pm 0.20}{(0.512 - 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 - 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 - 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Sprocket Hole Pitch	P <sub>0</sub>	$\frac{4.00 \pm 0.10}{(0.157 - 0.004)}$
Embossment Center	P <sub>1</sub>	$\frac{2.00 \pm 0.05}{(0.079 - 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 - 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 - 0.008)}$
Reel Width	W <sub>1</sub>	$\frac{14.4}{(0.567)}$ Max.
Quantity per Reel	—	3,000



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