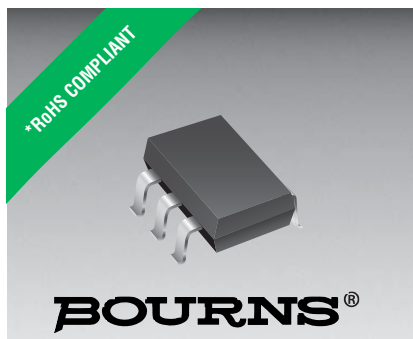




Features

- Lead free as standard
- RoHS compliant*
- Low capacitance - 1.3 pF
- ESD protection >25 kV
- Surge protection

Applications

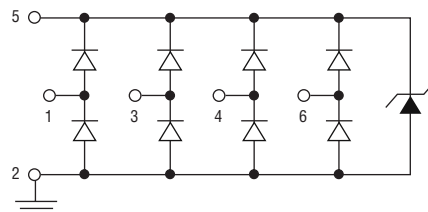
- Personal Digital Assistants (PDAs)
- Notebook and PC computers
- Memory card protection
- SIM card port protection
- Portable electronics

CDSC706-0504C - Surface Mount TVS Diode Array

General Information

The CDSC706-0504C device provides ESD, EFT and Surge protection for high speed data ports meeting IEC 61000-4-2 (ESD), IEC 61000-4-4 (EFT) and IEC 61000-4-5 (Surge) requirements. The Transient Voltage Suppressor array, protecting up to 4 data lines, offers a Working Peak Reverse Voltage of 5 V and Minimum Breakdown Voltage of 6 V.

The SC70-6L packaged device will mount directly onto the industry standard SC70-6 footprint. Bourns® Chip Diodes conform to JEDEC standards, are easy to handle with standard pick and place equipment and the flat configuration minimizes roll away.



Thermal Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDSC706-0504C	Unit
Peak Pulse Power (t _p = 8/20 μs)	I _{PP}	6.5	A
Storage Temperature	T _{STG}	-55 to +150	°C
Operating Temperature	T _{OPR}	-55 to +85	°C
Operating Supply Voltage	V _{DC}	6	V
ESD per IEC61000-4-2 (Air) (I/O Pins)	V _{esd IO}	18	kV
ESD per IEC61000-4-2 (Contact) (I/O Pins)		14	
ESD per IEC61000-4-2 (Air) (V _{CC} to GND)	V _{esd VCC}	30	kV
ESD per IEC61000-4-2 (Contact) (V _{CC} to GND)		30	
DC Voltage at any I/O Pin	V _{IO}	(GND-0.5) to (VCC+0.5)	V

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	CDSC706-0504C	Unit
Maximum Reverse Standoff Voltage ¹	V _{RWM}	5.0	V
Maximum Leakage Current ¹ @ V _{RWM}	I _L	5.0	μA
Maximum Channel Leakage Current @ V _{RWM}	I _{CD}	1.0	μA
Minimum Reverse Breakdown Voltage ¹ @ I _{BY} =1 mA	V _{BR}	6.0	V
Maximum Forward Voltage ⁴ @ I _F = 15 mA	V _F	1.0	V
Maximum Clamping Voltage ² @ 5 A 8/20us	V _C	9.0	V
Typical ESD Clamping Voltage- I/O ²	V _{clamp io}	12.5	V
Maximum Channel Input Capacitance ² @ V _{PIN5} =5 V, V _{PIN2} =0 V, V _{IN} =2.5 V, f=1 MHz	C _{IN}	1.6	pF
Max. Channel to Channel Input Capacitance ³ @ V _{PIN5} =5 V, V _{PIN2} =0 V, V _{IN} =2.5 V, f=1 MHz	C _{CROSS}	0.14	pF
Max. Variation of Channel Input Capacitance @ V _{PIN5} =5 V, V _{PIN2} =0 V, V _{IN} =2.5 V, f=1 MHz (I/O Pin to GND)	ΔC _{IN}	0.07	pF

Notes: 1: Pin 5 to Pin 2 (ground)
2: Pin 1, 3, 4 or 6 to Pin 2 (ground)

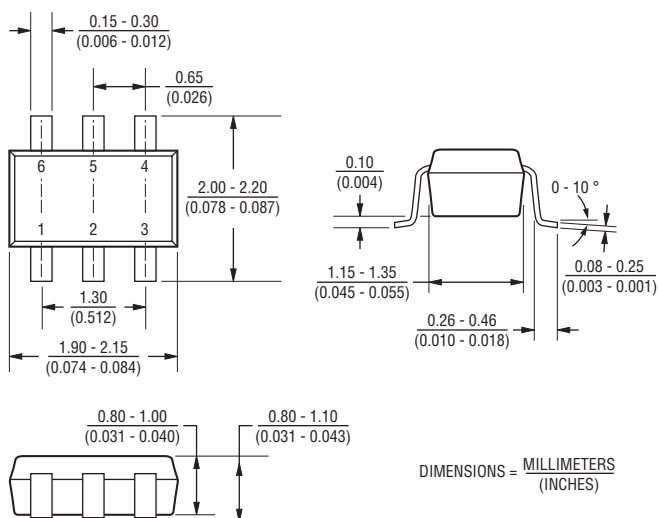
3: Between any two of pins 1, 3, 4, 6.
4: Pin 2 (ground) to Pin 5

CDSC706-0504C - Surface Mount TVS Diode Array

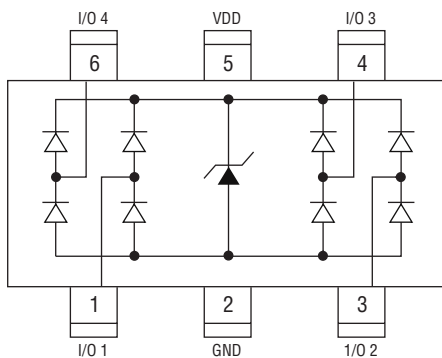
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Product Dimensions

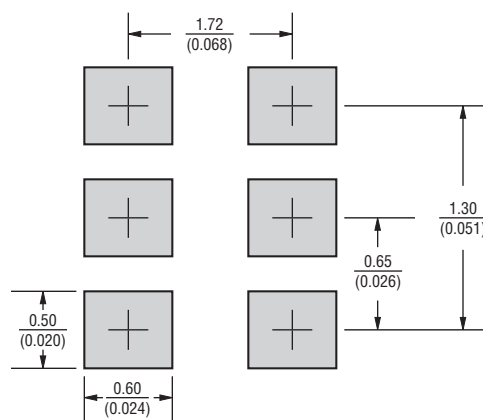
This is a molded JEDEC SC70-6L package with lead free 100 % Matte Sn on the lead frame. It weighs approximately 7 mg and has a flammability rating of UL 94V-0.



Configuration



Recommended Footprint



DIMENSIONS = $\frac{\text{MILLIMETERS}}{(\text{INCHES})}$

Typical Part Marking

CDSC706-0504C C05

How to Order

CD SC706 - 05 04 C

Common Diode _____

Chip Diode _____

Package _____
SC706 = SC70-6L Package

Working Peak Reverse Voltage _____
05 = 5 V_{RWM} (Volts)

Number of Lines _____
04 = 4 Data Lines

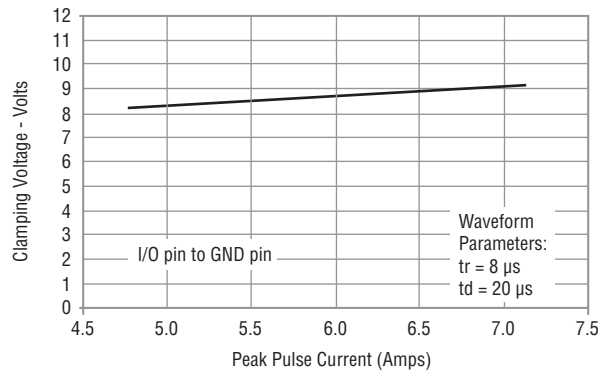
Suffix _____
C = Low Capacitance

CDSC706-0504C - Surface Mount TVS Diode Array

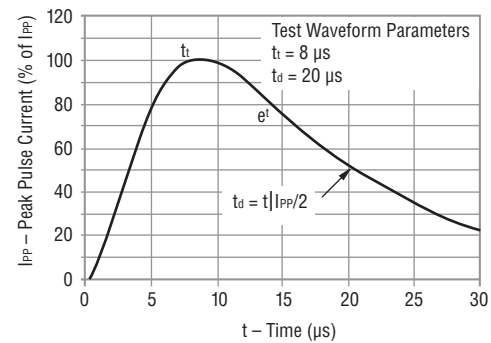
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Rating & Characteristic Curves

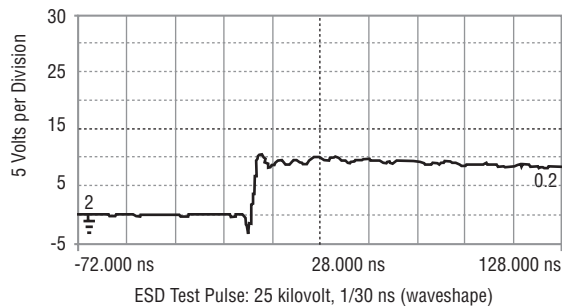
Clamping Voltage vs. Peak Pulse Current



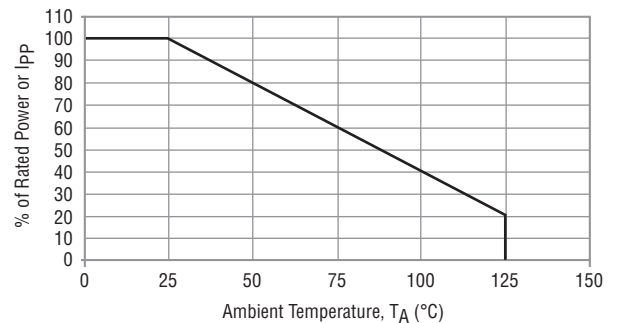
Pulse Waveform



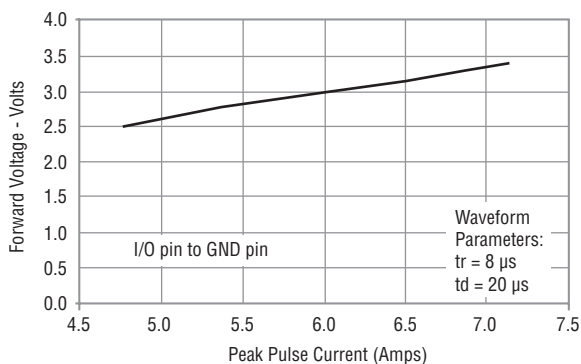
Overshoot and Clamping Voltage



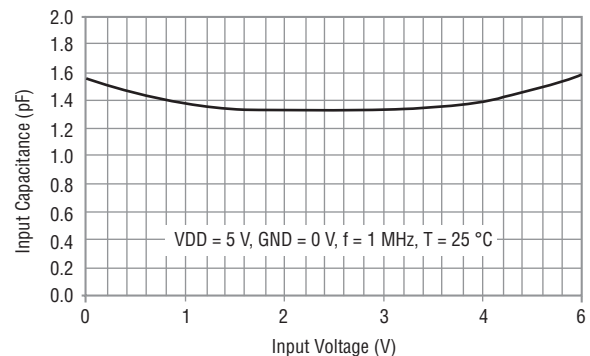
Power Derating Curve



Forward Voltage vs. Forward Current



Typical Variation of C_{in} vs. V_{in}

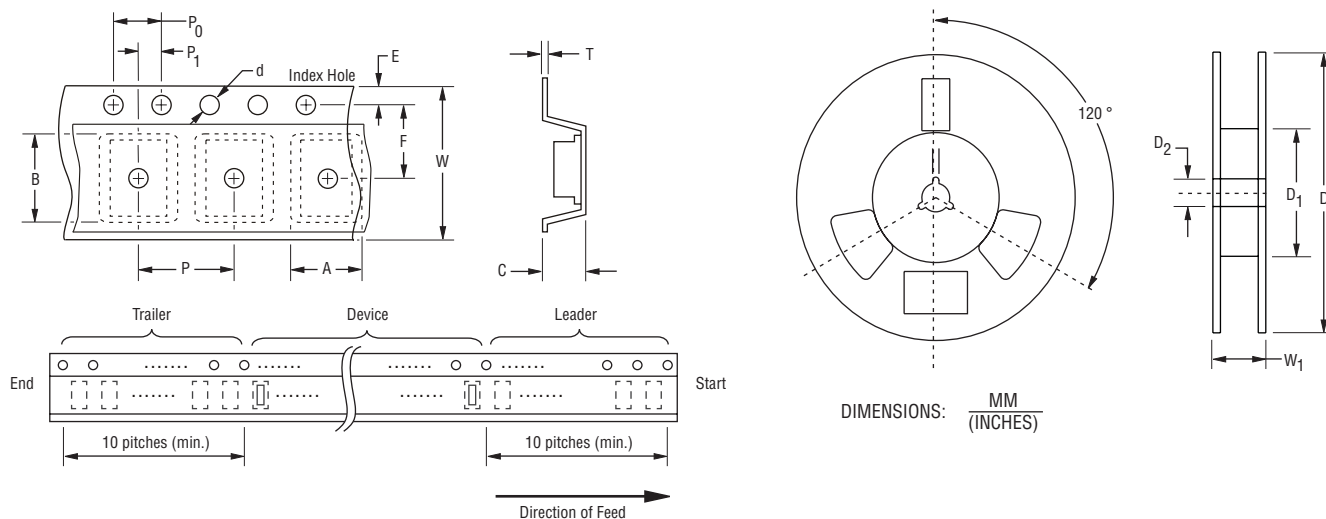


CDSC706-0504C - Surface Mount TVS Diode Array

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Packaging Information

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



Item	Symbol	SC70-6L
Carrier Width	A	$\frac{2.25 \pm 0.10}{(0.088 \pm 0.004)}$
Carrier Length	B	$\frac{2.34 \pm 0.10}{(0.092 \pm 0.004)}$
Carrier Depth	C	$\frac{1.22 \pm 0.10}{(0.048 \pm 0.004)}$
Sprocket Hole	d	$\frac{1.55 \pm 0.05}{(0.061 \pm 0.002)}$
Reel Outside Diameter	D	$\frac{178}{(7.008)}$
Reel Inner Diameter	D ₁	$\frac{50.0}{(1.969)} \text{ MIN.}$
Feed Hole Diameter	D ₂	$\frac{13.0 \pm 0.20}{(0.512 \pm 0.008)}$
Sprocket Hole Position	E	$\frac{1.75 \pm 0.10}{(0.069 \pm 0.004)}$
Punch Hole Position	F	$\frac{3.50 \pm 0.05}{(0.138 \pm 0.002)}$
Punch Hole Pitch	P	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Sprocket Hole Pitch	P ₀	$\frac{4.00 \pm 0.10}{(0.157 \pm 0.004)}$
Embossment Center	P ₁	$\frac{2.00 \pm 0.05}{(0.079 \pm 0.002)}$
Overall Tape Thickness	T	$\frac{0.20 \pm 0.10}{(0.008 \pm 0.004)}$
Tape Width	W	$\frac{8.00 \pm 0.20}{(0.315 \pm 0.008)}$
Reel Width	W ₁	$\frac{14.4}{(0.567)} \text{ MAX.}$
Quantity per Reel	--	3000