

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!

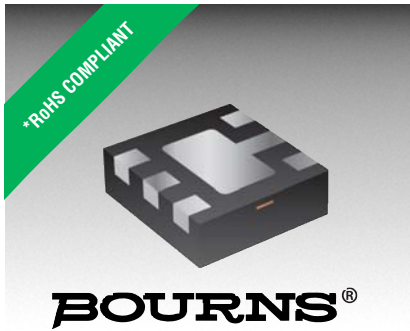


Contact us

Tel: +86-755-8981 8866 Fax: +86-755-8427 6832

Email & Skype: info@chipsmall.com Web: www.chipsmall.com

Address: A1208, Overseas Decoration Building, #122 Zhenhua RD., Futian, Shenzhen, China



Features

- Lead free as standard
- RoHS compliant*
- Low capacitance - 1.2 pF
- No insertion loss to 2 GHz
- ESD, EFT, surge protection

Applications

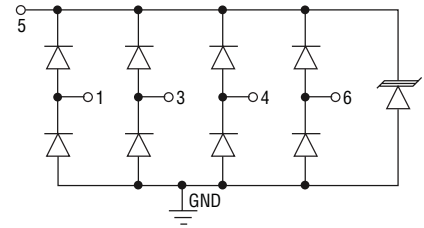
- USB 2.0 & USB OTG
- Multimedia card interface
- SD card interface
- SIM ports
- Gigabit Ethernet

CDDFN6-0504P - TVS/Steering Diode Array

General Information

The CDDFN6-0504P 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 molded packaged device will mount directly onto the industry standard DFN6 or QFN6 footprint. Bourns® Chip Diodes are easy to handle with standard pick and place equipment and their flat configuration minimizes roll away.



Absolute Maximum Ratings

Parameter	Symbol	CDDFN6-0504P	Unit
Peak Pulse Power ($t_p = 8/20 \mu s$) (NOTE 1)	P_{pk}	150	W
Peak Pulse Current ($t_p = 8/20 \mu s$) (NOTE 1)	I_{pp}	6.5	A
Storage Temperature	T_{STG}	-55 to +150	°C
Operating Temperature	T_{OPR}	-55 to +125	°C
Operating Supply Voltage	VDC	6	V
ESD per IEC 61000-4-2 (Air)(I/O to GND) ESD per IEC 61000-4-2 (Contact) (I/O to GND)	V_{ESD_IO}	18 14	kV
ESD per IEC 61000-4-2 (Air)(V_{CC} to GND) ESD per IEC 61000-4-2 (Contact)(V_{CC} to GND)	V_{ESD_VCC}	30 30	kV
DC Voltage at any I/O Pin	V_{IO}	(GND-0.5) to ($V_{CC}+0.5$)	V

Note 1. See Power Derating Curve.

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

Parameter	Symbol	CDDFN6-0504P	Unit
Maximum Reverse Standoff Voltage ¹	V_{RWM}	5.0	V
Maximum Leakage Current ¹ @ V_{RWM}	I_D	5.0	μA
Maximum Channel Leakage Current @ V_{RWM}	I_{CD}	1.0	μA
Minimum Reverse Breakdown Voltage ¹ @ $I_{BV}=1 \text{ mA}$	V_{BR}	6.0	V
Maximum Forward Voltage ⁴ @ $I_F = 15 \text{ mA}$	V_F	1.0	V
Typical Clamping Voltage ²	V_C	8.1	V
Typical ESD Clamping Voltage - I/O per IEC 61000-4-2 +6 kV, Contact ²	V_{clamp_io}	12.5	V
Typical ESD Clamping Voltage- V_{CC} ¹	V_{clamp_VCC}	9.0	V
Maximum Channel Input Capacitance ² @ $V_{PIN5}=5 \text{ V}$, $V_{PIN2}=0 \text{ V}$, $V_{IN}=2.5 \text{ V}$, $f=1 \text{ MHz}$	C_{IN}	1.6	pF
Maximum Channel to Channel Input Capacitance ³ @ $V_{PIN5}=5 \text{ V}$, $V_{PIN2}=0 \text{ V}$, $V_{IN}=2.5 \text{ V}$, $f=1 \text{ MHz}$	C_{CROSS}	0.14	pF
Maximum Variation of Channel Input Capacitance @ $V_{PIN5}=5 \text{ V}$, $V_{PIN2}=0 \text{ V}$, $V_{IN}=2.5 \text{ V}$, $f=1 \text{ MHz}$. (I/O Pin to GND)	ΔC_{IN}	0.06	pF

Note 1. Pin 5 to Pin 2 (ground).

Note 2. Pin 1, 3, 4 or 6 to Pin 2 (ground).

Note 3. Between any two of pins 1, 3, 4, 6.

Note 4. Pin 2 (ground) to Pin 5.

*RoHS Directive 2002/95/EC Jan 27, 2003 including Annex.
Specifications are subject to change without notice.

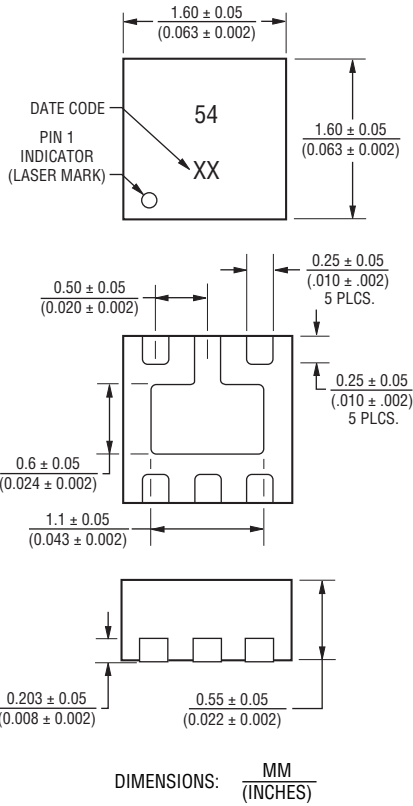
Customers should verify actual device performance in their specific applications.

CDDFN6-0504P - TVS/Steering Diode Array



Product Dimensions

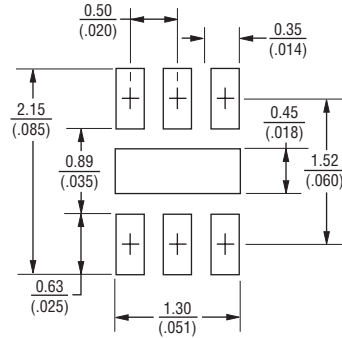
This is a molded DFN6 package with lead free Nickel-Paladium-Gold (Ni/Pd/Au) on the lead frame. It has a flammability rating of UL 94V-0.



Pin Out

Pin	Function
1	I/O
2	GND
3	I/O
4	I/O
5	V _{CC}
6	I/O
Center Tab	GND

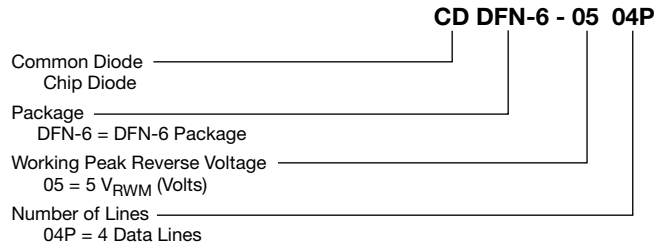
Recommended Footprint



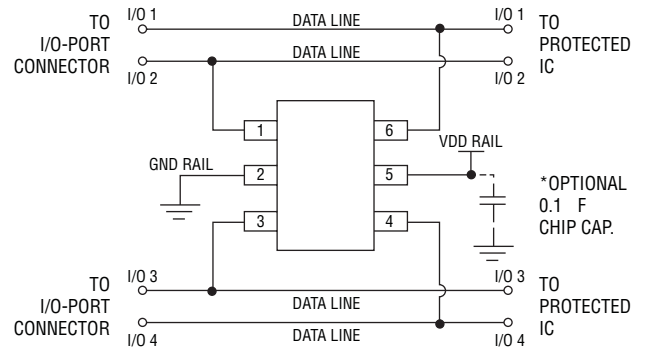
Typical Part Marking

CDDFN6-0504P54

How to Order



Typical Application

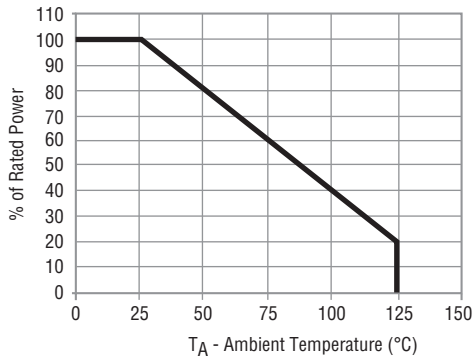


CDDFN6-0504P - TVS/Steering Diode Array

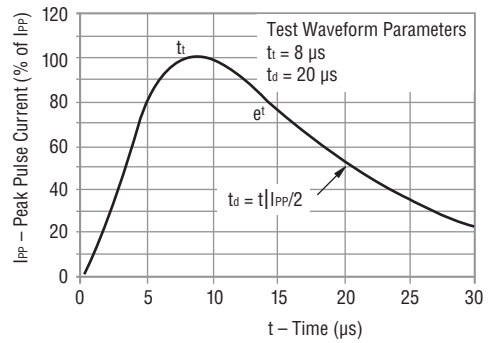
BOURNS®

Rating & Characteristic Curves

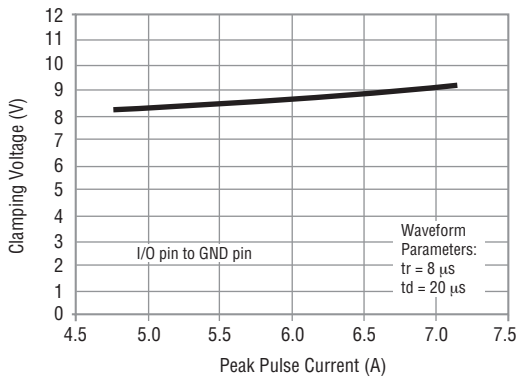
Power Derating Curve



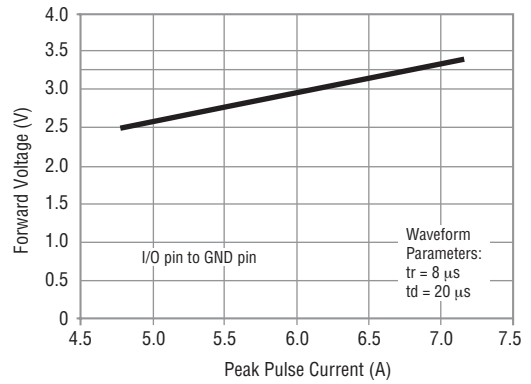
Pulse Waveform



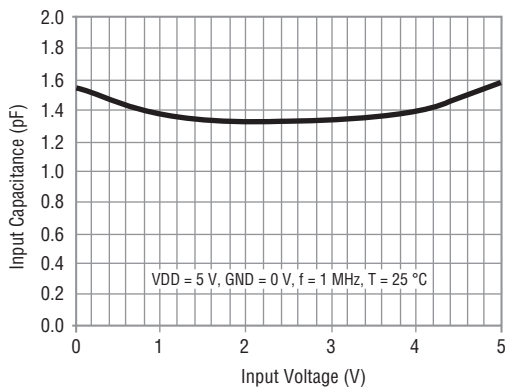
Clamping Voltage vs. Peak Pulse Current



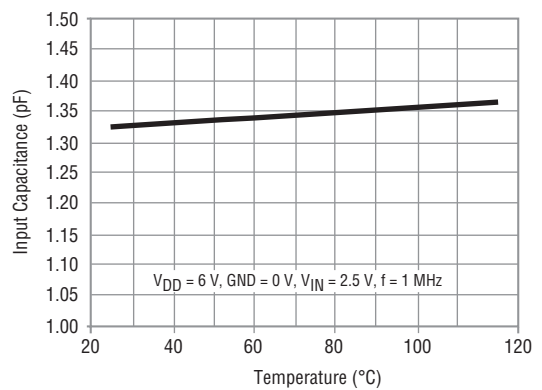
Forward Voltage vs. Forward Current



Capacitance vs. Line Voltage



Capacitance vs. Temperature

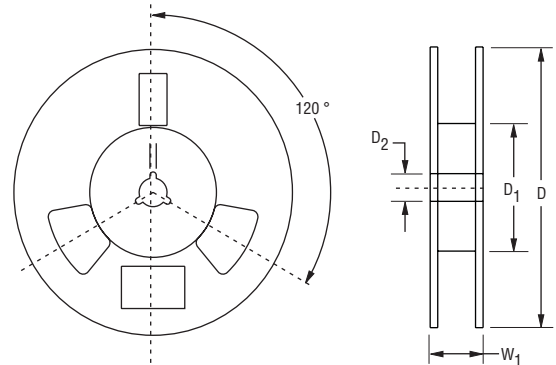
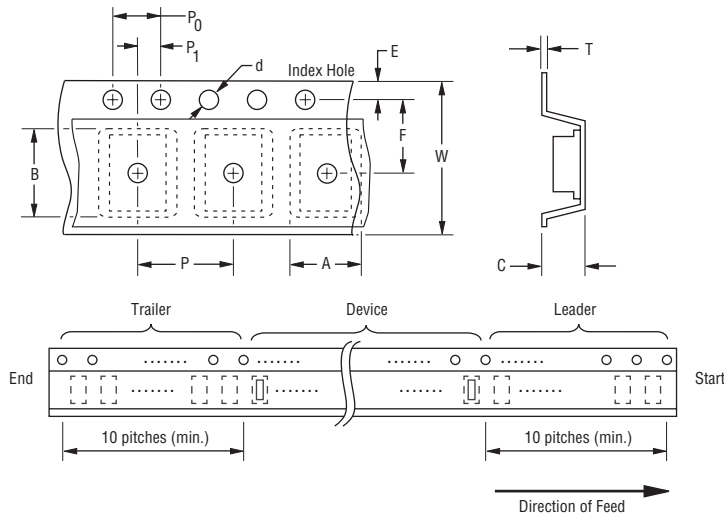


CDDFN6-0504P - TVS/Steering Diode Array

BOURNS®

Packaging Information

The product will be dispensed in tape and reel format (see diagram below).



DIMENSIONS: $\frac{\text{MM}}{\text{(INCHES)}}$

Devices are packed in accordance with EIA standard RS-481-A.

Item	Symbol	DFN-6
Carrier Width	A	$\frac{1.78 \pm 0.05}{(0.070 \pm 0.002)}$
Carrier Length	B	$\frac{1.78 \pm 0.05}{(0.070 \pm 0.002)}$
Carrier Depth	C	$\frac{0.69 \pm 0.05}{(0.027 \pm 0.002)}$
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	$\frac{50.0}{(1.969)}$ 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	$\frac{14.4}{(0.567)}$ MAX.
Quantity per Reel	--	3000

REV. 01/11

Specifications are subject to change without notice. Customers should verify actual device performance in their specific applications.