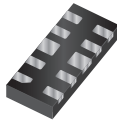


**CTLTVS5-4****SURFACE MOUNT SILICON  
LOW CAPACITANCE  
QUAD TVS/DIODE ARRAY****Ideal for  
USB  
3.0****TLM1031 CASE**[www.centrasemi.com](http://www.centrasemi.com)**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLTVS5-4 is a 4-line TVS/Diode array packaged in a TLM1031 surface mount case. With its ultra low capacitance, this device was designed to protect four high speed data or transmission lines from over-voltage transients and ESD damage.

**MARKING CODE: CTL5****APPLICATIONS:**

- USB 3.0 Power and Data Line Protection
- HDMI Interface Protection
- Tablets, Monitors, Displays, Smart Phones
- Ethernet Ports

**FEATURES:**

- Low capacitance
- Low clamping voltage
- Protects four I/O lines

**MAXIMUM RATINGS:** ( $T_A=25^\circ\text{C}$ )

Peak Pulse Current (8x20 $\mu\text{s}$ )  
 Peak Power Dissipation (8x20 $\mu\text{s}$ )  
 Electrical Fast Transient (IEC 61000-4-4) (5x50ns)  
 ESD Voltage (IEC 61000-4-2, Air)  
 ESD Voltage (IEC 61000-4-2, Contact)  
 Operating and Storage Junction Temperature

**SYMBOL**

$I_{PP}$  2.5  
 $P_{PK}$  32.5  
 EFT 40  
 $V_{ESD}$  15  
 $V_{ESD}$  8.0  
 $T_J, T_{stg}$  -55 to +150

**UNITS**

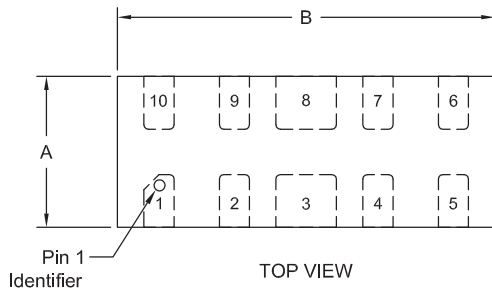
A  
 W  
 A  
 kV  
 kV  
 $^\circ\text{C}$

**ELECTRICAL CHARACTERISTICS PER DIODE:** ( $T_A=25^\circ\text{C}$ )

Maximum Reverse Stand-off Voltage $V_{RWM}$	Reverse Breakdown Voltage I/O to GND $V_Z$ @ 1.0mA		Maximum Reverse Leakage Current I/O to GND $I_R$ @ $V_{RWM}$	Maximum Clamping Voltage I/O to GND (8x20 $\mu\text{s}$ ) $V_C$ @ $I_{PP}$		Typical TLP Clamping Voltage (Note 1) $V_{CL}$ @ $I_{PP}$		Typical Dynamic Resistance (Note 1) $R_{DYN}$	Maximum Off State Junction Capacitance ( $V_R=0$ , $f=1.0\text{MHz}$ )	
									I/O to GND	I/O to I/O
	MIN V	MAX V		V	A	V	A		$C_J$	$C_J$
5.0	6.0	9.0	1.0	12	1.0	12	4.0	0.5	0.8	0.4
				13	2.5	14	8.0			

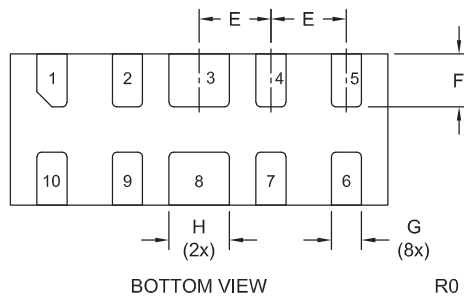
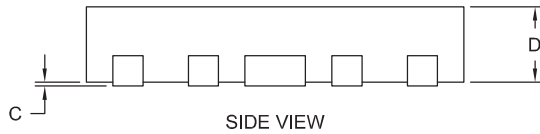
Note 1: Transmission Line Pulse (TLP) conditions:  $Z_0=50\Omega$ ,  $t_p=100\text{ns}$

R4 (4-September 2015)

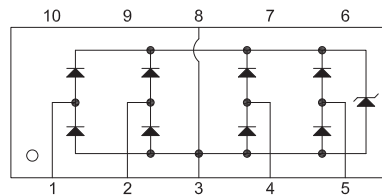
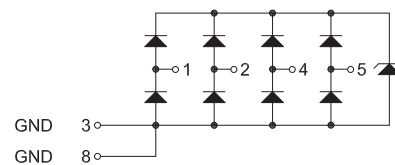
**CTLTVS5-4****SURFACE MOUNT SILICON  
LOW CAPACITANCE  
QUAD TVS/DIODE ARRAY****TLM1031 CASE - MECHANICAL OUTLINE**

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.037	0.041	0.95	1.05
B	0.096	0.100	2.45	2.55
C	0.000	0.002	0.00	0.05
D	0.018	0.022	0.45	0.55
E	0.020		0.50	
F	0.012	0.016	0.30	0.40
G	0.006	0.010	0.15	0.25
H	0.014	0.018	0.35	0.45

TLM1031 (REV:R0)

**LEAD CODE:**

- |           |           |
|-----------|-----------|
| 1) I/O    | 6) N/C    |
| 2) I/O    | 7) N/C    |
| 3) Ground | 8) Ground |
| 4) I/O    | 9) N/C    |
| 5) I/O    | 10) N/C   |

**MARKING CODE: CTL5****PIN CONFIGURATION****SCHEMATIC**

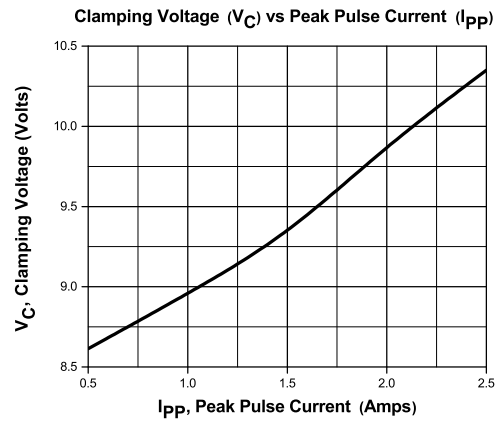
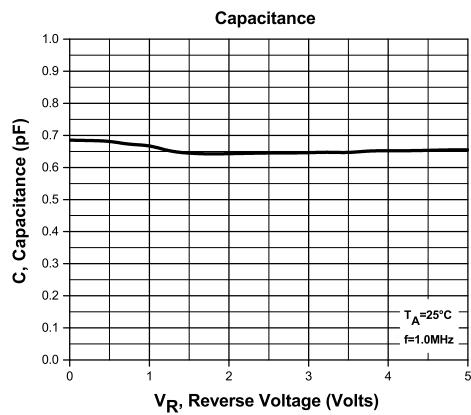
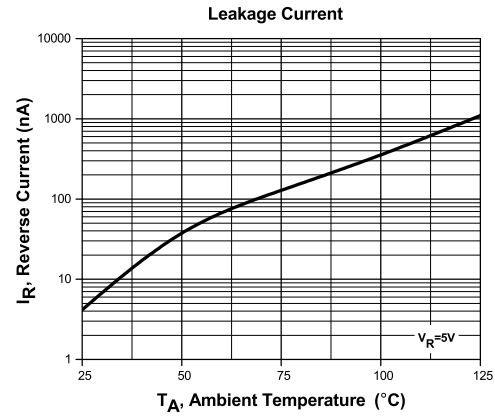
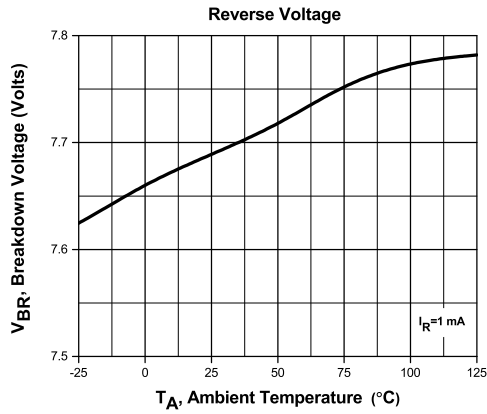
R4 (4-September 2015)

CTLTVS5-4

SURFACE MOUNT SILICON  
LOW CAPACITANCE  
QUAD TVS/DIODE ARRAY



## TYPICAL ELECTRICAL CHARACTERISTICS



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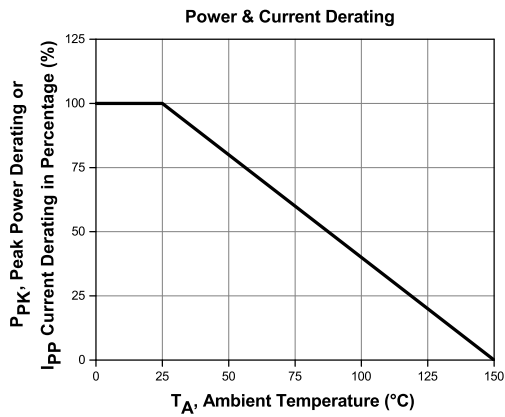
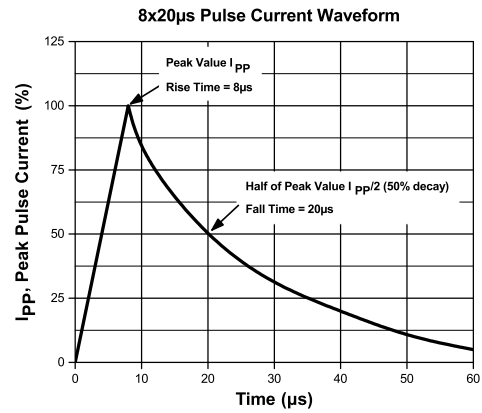
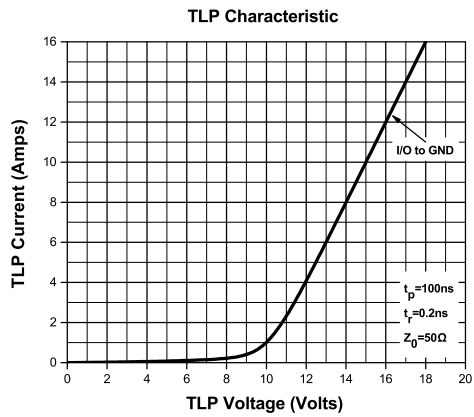
[www.centrasemi.com](http://www.centrasemi.com)

CTLTVS5-4

SURFACE MOUNT SILICON  
LOW CAPACITANCE  
QUAD TVS/DIODE ARRAY



## TYPICAL ELECTRICAL CHARACTERISTICS



R4 (4-September 2015)

[www.centrasemi.com](http://www.centrasemi.com)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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[www.centrasemi.com](http://www.centrasemi.com)

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