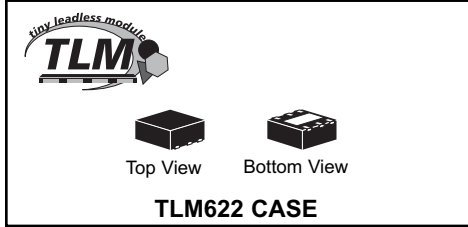


CTLSMS05-M622  
 CTLSMS12-M622  
 CTLSMS15-M622  
 CTLSMS24-M622

**SURFACE MOUNT TLM™  
 SILICON QUAD TVS/ZENER ARRAY  
 5.0 THRU 24 VOLTS**



# Central™ Semiconductor Corp.

## DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLSMS05 Series is a 4 line TVS/Zener Array packaged in a space saving TLM™ (Tiny Leadless Module™) TLM622 case. These devices are designed to protect sensitive equipment against ESD and to prevent latch-up events in CMOS circuitry operating at 5V, 12V, 15V and 24V.

## MARKING CODES:

CTLSMS05-M622: CBC  
 CTLSMS12-M622: CBD  
 CTLSMS15-M622: CBF  
 CTLSMS24-M622: CBH

## FEATURES:

- Very low clamping voltage
- Low leakage current
- 350W power dissipation
- IEC61000-4-2 ESD 20kV air, 15kV contact compliance
- New Tiny Leadless Module (TLM) package with a footprint compatible with the SOT-363 footprint.

## APPLICATIONS:

- PDA's
- Memory Card Ports
- Mobile Phones
- Instrumentation

## MAXIMUM RATINGS: (T<sub>A</sub>=25°C)

Peak Pulse Power (8x20µsec waveform)  
 ESD Voltage (HBM)  
 Operating Temperature Range  
 Storage Temperature Range

## SYMBOL

P<sub>pp</sub>  
 V<sub>ESD</sub>  
 T<sub>J</sub>  
 T<sub>stg</sub>

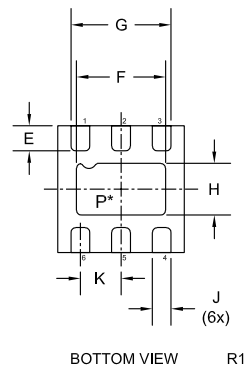
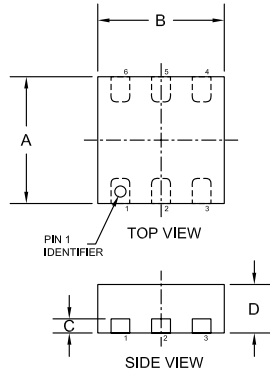
## UNITS

350  
 >25  
 -50 to +125  
 -50 to +150  
 W  
 kV  
 °C  
 °C

## ELECTRICAL CHARACTERISTICS PER DIODE: (T<sub>A</sub>=25°C unless otherwise noted)

Type No.	Reverse Stand-Off Voltage	Reverse Breakdown Voltage			Reverse Leakage Current			Clamping Voltage 8x20µsec		Clamping Voltage 8x20µsec		Off State Junction Capacitance V <sub>R</sub> =0V f=1.0MHz	Marking Code
		V <sub>WRM</sub> MAX (V)	V <sub>BR</sub> MIN (V)	I <sub>BR</sub> (mA)	I <sub>R</sub> MAX (µA)	V <sub>R</sub> (V)	V <sub>cl</sub> MAX (V)	I <sub>pp</sub> (A)	V <sub>cl</sub> MAX (V)	I <sub>pp</sub> (A)	C <sub>j</sub> MAX (pF)		
CTLSMS05-M622	5	6	1.0	5.0	5.0	9.5	5.0	13	24	200	CBC		
CTLSMS12-M622	12	13.3	1.0	5.0	12	17	5.0	21	15	90	CBD		
CTLSMS15-M622	15	16.7	1.0	5.0	15	22	5.0	27	12	70	CBF		
CTLSMS24-M622	24	26.7	1.0	5.0	24	35	5.0	40	8	50	CBH		

### TLM622 CASE - MECHANICAL OUTLINE



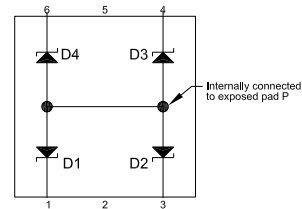
\* See lead code for internal connections to exposed pad P

**Marking Codes:**  
 CTLSMS05-M622: CBC  
 CTLSMS12-M622: CBD  
 CTLSMS15-M622: CBF  
 CTLSMS24-M622: CBH

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.077	0.081	1.95	2.05
B	0.077	0.081	1.95	2.05
C	0.007	0.009	0.18	0.23
D	0.029	0.031	0.73	0.78
E	0.012	0.016	0.30	0.40
F	0.053	0.057	1.35	1.45
G	0.061		1.55	
H	0.030	0.033	0.75	0.85
J	0.008	0.012	0.20	0.30
K	0.026		0.65	

TLM622 (REV:R1)

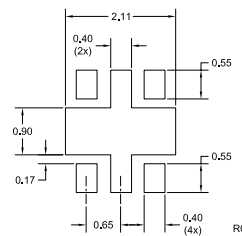
### Pinout



### Lead Code:

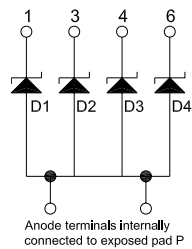
- 1) Cathode D1
  - 2) No Connection
  - 3) Cathode D2
  - 4) Cathode D3
  - 5) No Connection
  - 6) Cathode D4
- P) Anode D1, D2, D3, D4

Suggested mounting pad layout for maximum power dissipation (Dimensions in mm)



For standard mounting refer to TLM622 Package Details

### Schematic



R1 (10-April 2006)