

CTLR5-06

**SURFACE MOUNT SILICON  
RECTIFIER  
5.0 AMP, 600 VOLT**



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

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLR5-06 is a high voltage rectifier packaged in the low profile TLM364 case. The CTLR5-06 offers high current density in a package that is ideal for space constrained industrial, consumer, medical and power supply applications.

**MARKING: FULL PART NUMBER**



**APPLICATIONS:**

- Input rectification
- Reverse polarity protection
- Voltage clamping
- Voltage multipliers

**FEATURES:**

- Low profile package
- Glass passivated die for high reliability
- High peak forward surge current ( $I_{FSM}$ )
- Low forward voltage drop ( $V_F$ )

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

Peak Repetitive Reverse Voltage  
DC Blocking Voltage  
RMS Reverse Voltage  
Average Forward Current  
Peak Forward Surge Current,  $t_p=8.3\text{ms}$   
Operating and Storage Junction Temperature

SYMBOL		UNITS
$V_{RRM}$	600	V
$V_R$	600	V
$V_{R(RMS)}$	420	V
$I_O$	5.0	A
$I_{FSM}$	150	A
$T_J, T_{stg}$	-55 to +150	$^\circ\text{C}$

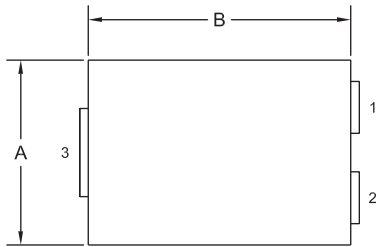
**ELECTRICAL CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_R$	$V_R=600\text{V}$		0.03	5.0	$\mu\text{A}$
$I_R$	$V_R=600\text{V}, T_A=125^\circ\text{C}$		9.0	50	$\mu\text{A}$
$BV_R$	$I_R=100\mu\text{A}$	600			V
$V_F$	$I_F=5.0\text{A}$		0.94	1.0	V
$C_J$	$V_R=0, f=1.0\text{MHz}$		104	125	pF

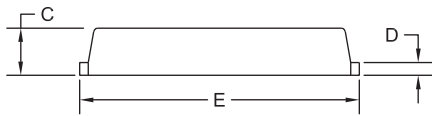
**CTLR5-06**  
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**RECTIFIER**  
**5.0 AMP, 600 VOLT**



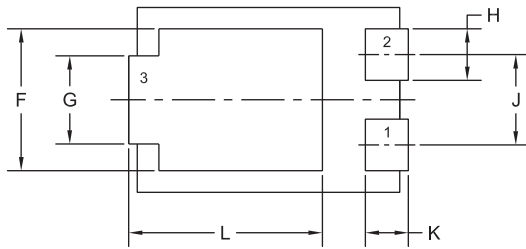
**TLM364 CASE - MECHANICAL OUTLINE**



TOP VIEW



SIDE VIEW

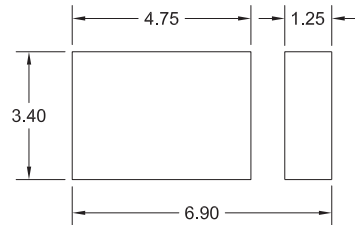


BOTTOM VIEW R0

SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.167	0.172	4.25	4.35
B	0.238	0.243	6.05	6.15
C	0.039	0.048	1.00	1.20
D	0.009	0.014	0.25	0.35
E	0.250	0.262	6.35	6.65
F	0.128	0.136	3.25	3.45
G	0.076	0.085	1.95	2.15
H	0.044	0.052	1.10	1.30
J	0.083		2.10	
K	0.035	0.044	0.90	1.10
L	0.171	0.183	4.35	4.65

TLM364 (REV:R0)

**SUGGESTED MOUNTING PADS**  
(Dimensions in mm)



R0

**LEAD CODE:**

- 1) Anode
- 2) Anode
- 3) Cathode

**MARKING: FULL PART NUMBER**

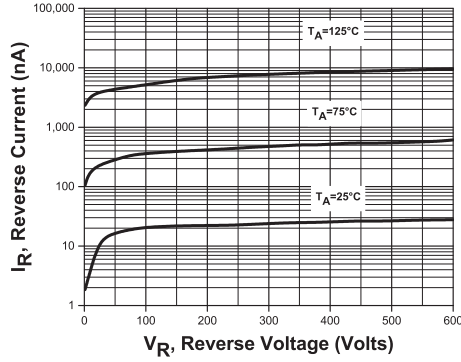
R2 (8-September 2014)

**CTLR5-06**  
**SURFACE MOUNT SILICON**  
**RECTIFIER**  
**5.0 AMP, 600 VOLT**

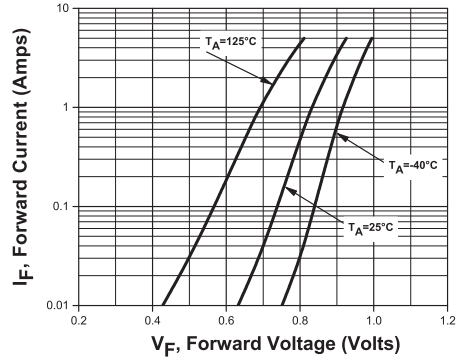


**TYPICAL ELECTRICAL CHARACTERISTICS**

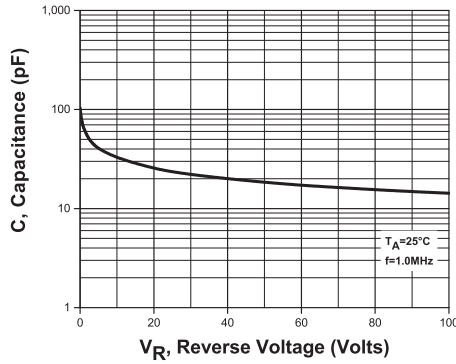
**Leakage Current**



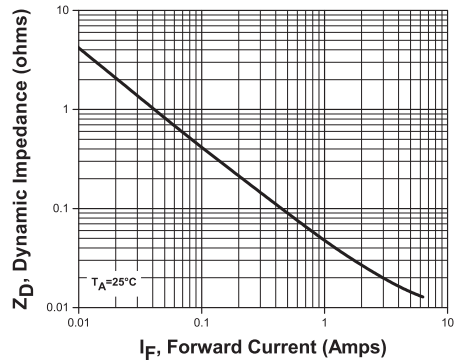
**Forward Voltage**



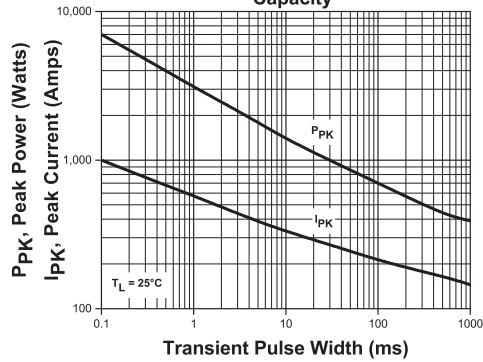
**Capacitance**



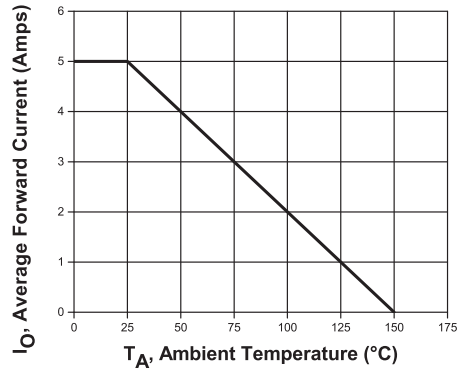
**Forward Dynamic Impedance**



**Transient Peak Power and Peak Current Capacity**



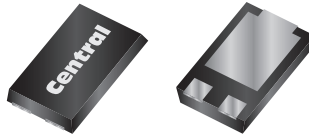
**Current Derating**



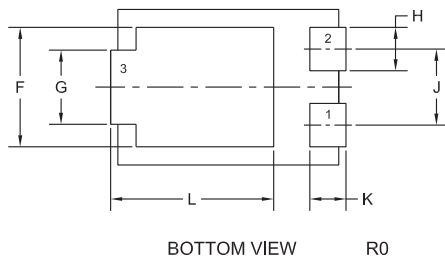
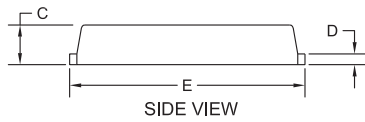
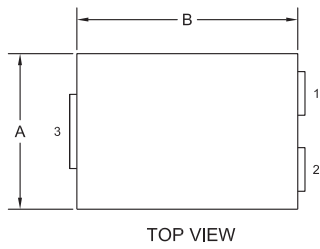
R2 (8-September 2014)

# Package Details

## TLM364 Case



### Mechanical Drawing



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TLM364 (REV:R0)

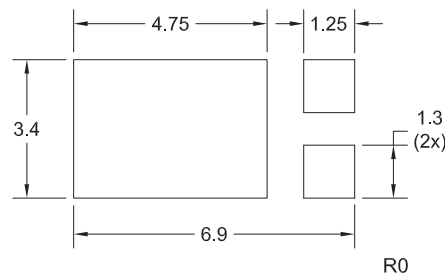
#### Part Marking:

7-8 Character Alpha/Numeric Code

#### Lead Code:

Reference individual device datasheet.

### Mounting Pad Geometry (Dimensions in mm)



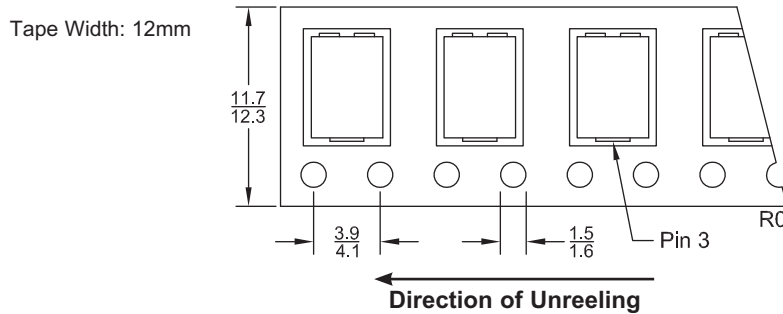
R0 (27-March 2013)

# Package Details

## TLM364 Case



### Tape Dimensions and Orientation (Dimensions in mm)



Devices are taped in accordance with Electronic Industries Association Standard EIA-481-D

### Packaging Base

13" Reel = 5,000 pcs.

### Reel Labeling Information

Each reel is labeled with the following information:

Central Part Number, Customer Part Number, Purchase Order Number, Quantity, Lot Number, Date Code, Ship Date and Marking Code.

### Reel Packing Information

Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13"	5	25,000	15x4x15	38x10x38	12	6
	14	70,000	15x15x9	38x38x23	32	15
	26	130,000	15x15x18	38x38x46	57	26

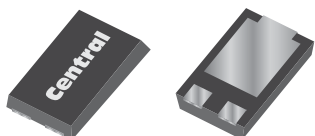
### Ordering Information

- For devices taped and reeled on 13" reels, add TR13 suffix to part number.
- All SMDs are available in small quantities for prototype and manual placement applications.

R0 (27-March 2013)

# Material Composition Specification

## TLM364 Case



Device average mass . . . . . **92 mg**  
 Fluctuation margin . . . . . **+/-10%**

Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	10.41%	9.58	Si	7440-21-3	10.41%	9.58	104,130
clip	Cu alloy	5.36%	4.93	Cu	7440-50-8	5.21%	4.79	52,065
				Fe	7439-89-6	0.15%	0.14	1,522
leadframe	Cu alloy	32.72%	30.1	Cu	7440-50-8	32.66%	30.05	326,630
				Fe	7439-89-6	0.05%	0.05	543
die attach	high temperature solder paste	4.52%	4.16	Pb	7439-92-1	4.18%	3.85	41,848
				Sn	7440-31-5	0.23%	0.21	2,283
				Ag	7440-22-4	0.11%	0.1	1,087
encapsulation*	EMC GREEN	46.98%	43.22	silica	60676-86-0	36.17%	33.28	361,739
				epoxy resin	29690-82-2	4.70%	4.32	46,957
				phenol resin	9003-35-4	4.55%	4.19	45,543
				carbon black	1333-86-4	0.14%	0.13	1,413
				metal hydroxide	1309-42-8	1.41%	1.3	14,130
plating	matte tin	0.01%	0.01	Sn	7440-31-5	0.01%	0.01	109

\*EMC GREEN molding compound is Halogen Free.

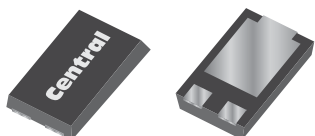
### Disclaimer

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R0 (11-January 2012)

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