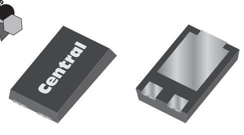
CTLSH10-45L

SURFACE MOUNT
LOW V_F
SILICON SCHOTTKY RECTIFIER


Top View Bottom View

TLM364 CASE

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLSH10-45L is a high performance 10 amp silicon Schottky rectifier designed for applications as a by-pass diode in low profile solar panels.

MARKING CODE: CSH1045L

APPLICATIONS:

- Solar by-pass diode
- OR-ing diode
- DC-DC output rectification
- Reverse polarity protection
- Power management

FEATURES:

- Low forward voltage, V_F=0.47V MAX @ 10A
- Low reverse leakage current, I_R=0.25mA MAX @ 45V
- Low profile 1.2mm MAX package height

MAXIMUM RATINGS: (T_A=25°C)	**SYMBOL**		**UNITS**
Peak Repetitive Reverse Voltage	V_{RRM}	45	V
DC Blocking Voltage	V_R	45	V
RMS Reverse Voltage	$V_{R(RMS)}$	32	V
Average Forward Current (T_L=110°C)	I_O	10	A
Peak Forward Surge Current, tp=8.3ms	I_{FSM}	275	A
Operating and Storage Junction Temperature	T_J, T_{stg}	-55 to +150	°C
Thermal Resistance (Note 1)	Θ_{JA}	60	°C/W
Thermal Resistance (Note 1)	Θ_{JL}	8.0	°C/W

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	**TEST CONDITIONS**	**MIN**	**TYP**	**MAX**	**UNITS**
I_R	V_R=45V		0.1	0.25	mA
I_R	V_R=45V, T_A=125°C		15		mA
BV_R	I_R=0.5mA	45			V
V_F	I_F=5.0A		0.38		V
V_F	I_F=5.0A, T_A=125°C		0.32		V
V_F	I_F=10A		0.44	0.47	V
V_F	I_F=10A, T_A=125°C		0.41		V
C_J	V_R=10V, f=1.0MHz		400		pF

Notes: (1) FR-4 epoxy PCB with minimum copper pad area.

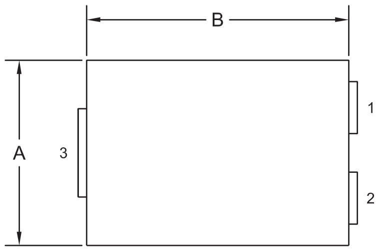
R1 (16-July 2012)

CTLSH10-45L

SURFACE MOUNT
LOW V_F
SILICON SCHOTTKY RECTIFIER

Central™
Semiconductor Corp.

TLM364 CASE - MECHANICAL OUTLINE

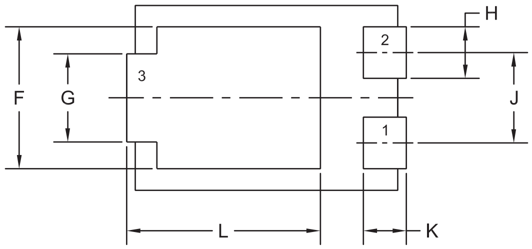


TOP VIEW

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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

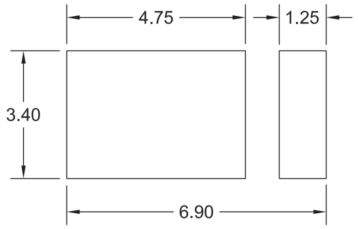
TLM364 (REV:R0)

SIDE VIEW



BOTTOM VIEW R0

SUGGESTED MOUNTING PADS
(Dimensions in mm)



R0

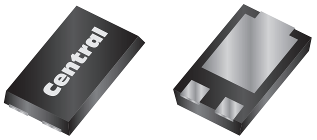
LEAD CODE:
1) Anode
2) Anode
3) Cathode

MARKING CODE: CSH1045L

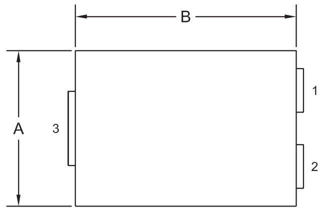
R1 (16-July 2012)

Package Details

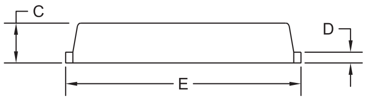
TLM364 Case



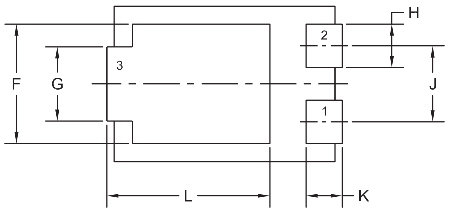
Mechanical Drawing



TOP VIEW



SIDE VIEW



BOTTOM VIEW R0

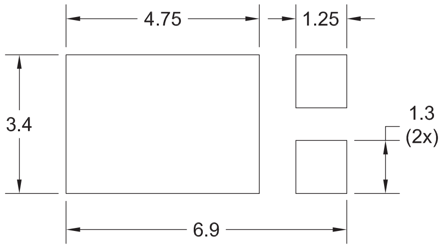
DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	MIN	MAX	MIN	MAX
A	0.167	0.172	4.25	4.35
B	0.238	0.243	6.05	6.15
C	0.039	0.048	1.00	1.20
D	0.009	0.014	0.25	0.35
E	0.250	0.262	6.35	6.65
F	0.128	0.136	3.25	3.45
G	0.076	0.085	1.95	2.15
H	0.044	0.052	1.10	1.30
J	0.083		2.10	
K	0.035	0.044	0.90	1.10
L	0.171	0.183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

TLM364 (REV:R0)

Part Marking:
7-8 Character Alpha/Numeric Code

Lead Code:
Reference individual device datasheet.

Mounting Pad Geometry (Dimensions in mm)



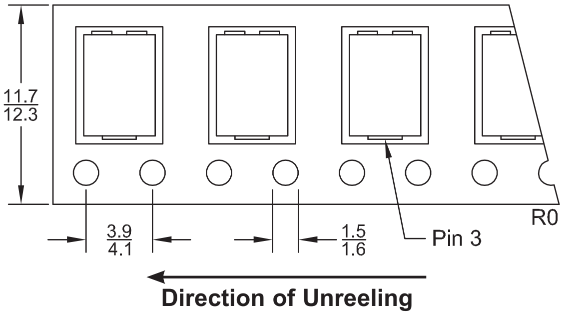
R0

Package Details

TLM364 Case

Tape Dimensions and Orientation (Dimensions in mm)

Tape Width: 12mm



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

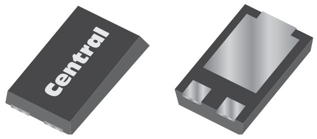
Reel Size	Reels per Box (Maximum)	Parts per Box (Maximum)	Box Dimensions		Shipping Weight (Max.)	
			INCH	CM	LB	KG
13”	5	25,000	15x4x15	38x10x38	12	6
	14	70,000	15x15x9	38x38x23	32	15
	26	130,000	15x15x18	38x38x46	57	26

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.

Material Composition Specification

TLM364 Case



Device average mass . . . . 92 mg

Fluctuation margin . . . . +/-10%

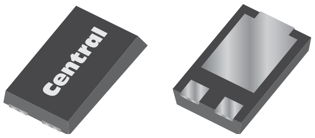
Component	Material	Material		Substance	CAS No.	Substance		
		(%wt)	(mg)			(%wt)	(mg)	(ppm)
active device	doped Si	10.41%	9.58	Si	7440-21-3	10.41%	9.58	104,130
clip	Cu alloy	5.36%	4.93	Cu	7440-50-8	5.21%	4.79	52,065
				Fe	7439-89-6	0.15%	0.14	1,522
leadframe	Cu alloy	32.72%	30.1	Cu	7440-50-8	32.66%	30.05	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.

R0 (11-January 2012)

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.

R0 (11-January 2012)