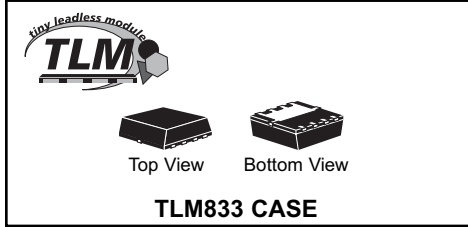




**CTLT953-M833**  
**SURFACE MOUNT**  
**HIGH CURRENT**  
**SILICON PNP TRANSISTOR**  
**TINY LEADLESS MODULE™**



**MARKING CODE: CHA4**  
**NPN COMPLEMENT: CTLT853-M833**

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

Collector-Base Voltage  
 Collector-Emitter Voltage  
 Emitter-Base Voltage  
 Collector Current  
 Power Dissipation  
 Power Dissipation  
 Power Dissipation

Operating and Storage  
 Junction Temperature  
 Thermal Resistance  
 Thermal Resistance  
 Thermal Resistance

# Central™

## Semiconductor Corp.

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CTLT953-M833 is a high performance 5.0A High Current PNP Transistor designed for applications where small size and operational efficiency are prime requirements. With a maximum power dissipation of 4.5W, and a very small package footprint, this device is 80% smaller than a comparable SOT-223 device. This leadless package design has a watts per unit area at least twice that of equivalent package devices.

**FEATURES:**

- High Voltage (140V)
- High Thermal Efficiency
- High Current ( $I_C=5.0\text{A}$ )
- 3 x 3mm TLM™ case
- Low  $V_{CE(SAT)} = 420\text{mV}$  Max @ 4.0A

SYMBOL		UNITS
$V_{CBO}$	140	V
$V_{CEO}$	100	V
$V_{EBO}$	6.0	V
$I_C$	5.0	A
$P_D$	4.5	W (Note 1)
$P_D$	4.0	W (Note 2)
$P_D$	2.5	W (Note 3)
$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
$\theta_{JA}$	27.78	$^\circ\text{C/W}$ (Note 1)
$\theta_{JA}$	31.25	$^\circ\text{C/W}$ (Note 2)
$\theta_{JA}$	50.00	$^\circ\text{C/W}$ (Note 3)

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$I_{CBO}$	$V_{CB}=100\text{V}$			50	nA
$I_{CER}$	$V_{CE}=100\text{V}, R_{BE} \leq 1\text{k}\Omega$			50	nA
$I_{CBO}$	$V_{CB}=100\text{V}, T_A=100^\circ\text{C}$			1.0	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=6.0\text{V}$			10	nA
$BV_{CBO}$	$I_C=100\mu\text{A}$	140	170		V
$BV_{CER}$	$I_C=10\text{mA}, R_{BE} \leq 1\text{k}\Omega$	140	150		V
$BV_{CEO}$	$I_C=10\text{mA}$	100	120		V
$BV_{EBO}$	$I_E=100\mu\text{A}$	6.0	9.0		V
$V_{CE(SAT)}$	$I_C=100\text{mA}, I_B=10\text{mA}$		20	50	mV
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		90	120	mV
$V_{CE(SAT)}$	$I_C=2.0\text{A}, I_B=200\text{mA}$		170	220	mV
$V_{CE(SAT)}$	$I_C=4.0\text{A}, I_B=400\text{mA}$		320	420	mV
$V_{BE(SAT)}$	$I_C=4.0\text{A}, I_B=400\text{mA}$		1.0	1.2	V

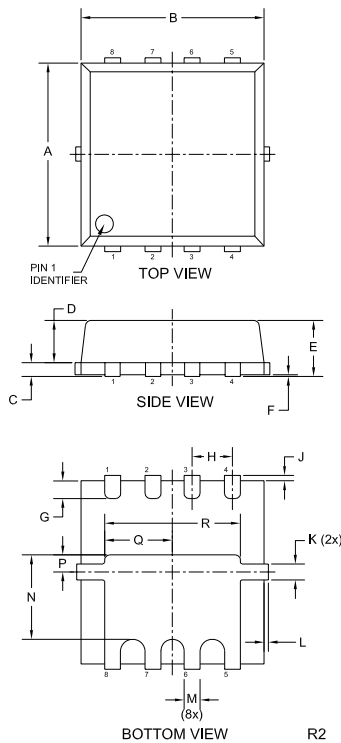
Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 75 mm<sup>2</sup>  
 (2) FR-4 Epoxy PC Board with copper mounting pad area of 75 mm<sup>2</sup>  
 (3) FR-4 Epoxy PC Board with copper mounting pad area of 25 mm<sup>2</sup>

R0 (10-November 2006)

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	100			
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=1.0\text{A}$	100	200	300	
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=3.0\text{A}$	50	70		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=4.0\text{A}$	30	45		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=10\text{A}$		15		
$f_T$	$V_{CE}=10\text{V}, I_C=100\text{mA}, f=50\text{MHz}$		150		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		45		pF

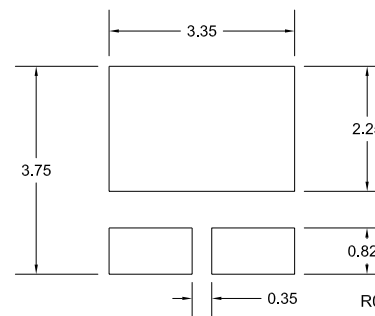
**TLM833 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.114	0.122	2.90	3.10
B	0.114	0.122	2.90	3.10
C	0.006	0.010	0.15	0.25
D	0.026	0.030	0.65	0.75
E	0.031	0.039	0.80	1.00
F	0.000	0.002	0.00	0.05
G	0.008	0.018	0.20	0.45
H		0.026		0.65
J	---	0.005	---	0.125
K	0.007	0.012	0.17	0.30
L	---	0.005	---	0.125
M	0.011	0.015	0.29	0.39
N	0.049	0.057	1.25	1.45
P	0.006	0.014	0.15	0.35
Q	0.040	0.048	1.01	1.21
R	0.085	0.093	2.16	2.36

TLM833 (REV:R2)

**Required Mounting Pad**  
(Dimensions in mm)



Failure to use this mounting pad layout may result in damage to device.

**LEAD CODE:**

- |            |              |
|------------|--------------|
| 1) EMITTER | 5) COLLECTOR |
| 2) EMITTER | 6) COLLECTOR |
| 3) BASE    | 7) COLLECTOR |
| 4) N. C.   | 8) COLLECTOR |

**MARKING CODE: CHA4**

R0 (10-November 2006)