

CTLT853-M833

**SURFACE MOUNT
HIGH CURRENT
NPN SILICON TRANSISTOR**



Top View Bottom View

TLM833 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR CTLT853-M833 is a high performance 6.0A High Current NPN 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.

MARKING CODE: CHA3

- PNP Complement: CTLT953-M833

FEATURES:

- High Voltage (200V)
- High Thermal Efficiency
- High Current ($I_C=6.0A$)
- 3 x 3mm TLM™ case
- Low $V_{CE(SAT)} = 340mV$ MAX @ 5.0A

MAXIMUM RATINGS: ($T_A=25^\circ C$)

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (Note 1)
Power Dissipation (Note 2)
Power Dissipation (Note 3)
Operating and Storage Junction Temperature
Thermal Resistance (Note 1)
Thermal Resistance (Note 2)
Thermal Resistance (Note 3)

SYMBOL

V_{CBO}	200
V_{CEO}	100
V_{EBO}	6.0
I_C	6.0
P_D	4.5
P_D	4.0
P_D	2.5
T_J, T_{stg}	-65 to +150
Θ_{JA}	27.78
Θ_{JA}	31.25
Θ_{JA}	50.00

UNITS

V
V
V
A
W
W
W
$^\circ C$
$^\circ C/W$
$^\circ C/W$
$^\circ C/W$

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

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=150V$			10	nA
I_{CBO}	$V_{CB}=150V, T_A=100^\circ C$			1.0	μA
I_{CER}	$V_{CE}=150V, R_{BE} \leq 1.0k\Omega$			10	nA
I_{EBO}	$V_{EB}=6.0V$			10	nA
BV_{CBO}	$I_C=100\mu A$	200	220		V
BV_{CER}	$I_C=10mA, R_{BE} \leq 1.0k\Omega$	200	210		V
BV_{CEO}	$I_C=10mA$	100	110		V
BV_{EBO}	$I_E=100\mu A$	6.0	8.0		V
$V_{CE(SAT)}$	$I_C=100mA, I_B=5.0mA$		22	50	mV
$V_{CE(SAT)}$	$I_C=2.0A, I_B=100mA$		135	170	mV
$V_{CE(SAT)}$	$I_C=5.0A, I_B=500mA$			340	mV
$V_{BE(SAT)}$	$I_C=5.0A, I_B=500mA$			1.25	V

Notes: (1) Ceramic or aluminum core PC Board with copper mounting pad area of 75 mm²
(2) FR-4 Epoxy PC Board with copper mounting pad area of 75 mm²
(3) FR-4 Epoxy PC Board with copper mounting pad area of 25 mm²

R1 (17-February 2010)

CTLT853-M833

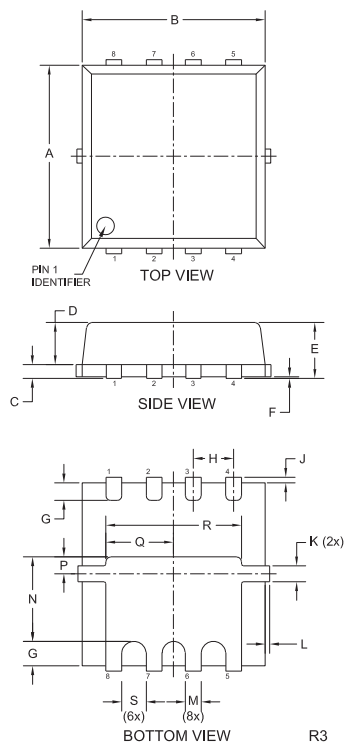
SURFACE MOUNT
HIGH CURRENT
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ELECTRICAL CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
h_{FE}	$V_{CE}=2.0\text{V}$, $I_C=10\text{mA}$	100			
h_{FE}	$V_{CE}=2.0\text{V}$, $I_C=2.0\text{A}$	100	200	300	
h_{FE}	$V_{CE}=2.0\text{V}$, $I_C=4.0\text{A}$	50	100		
h_{FE}	$V_{CE}=2.0\text{V}$, $I_C=10\text{A}$	20	30		
f_T	$V_{CE}=10\text{V}$, $I_C=100\text{mA}$, $f=50\text{MHz}$		190		MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		38		pF

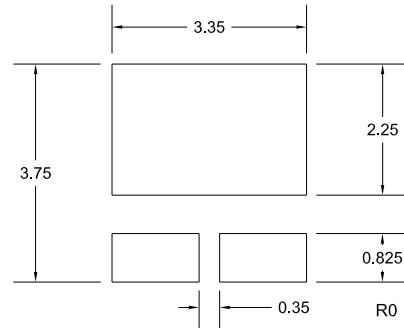
TLM833 CASE - MECHANICAL OUTLINE



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
S	0.012	0.016	0.30	0.40

TLM833 (REV:R3)

REQUIRED MOUNTING PADS
(Dimensions in mm)



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

R1 (17-February 2010)