

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: ($T_A=25^{\circ}C$)

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	200	V
Collector-Emitter Voltage	V_{CEO}	100	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Continuous Collector Current	I_C	6.0	A
Power Dissipation (Note 1)	P_D	4.5	W
Power Dissipation (Note 2)	P_D	4.0	W
Power Dissipation (Note 3)	P_D	2.5	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^{\circ}C$
Thermal Resistance (Note 1)	Θ_{JA}	27.78	$^{\circ}C/W$
Thermal Resistance (Note 2)	Θ_{JA}	31.25	$^{\circ}C/W$
Thermal Resistance (Note 3)	Θ_{JA}	50.00	$^{\circ}C/W$

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)

Central™
Semiconductor Corp.

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

Figure 1 shows three views of a rectangular component with dimensions and labels:

- TOP VIEW:** A rectangle with overall width B and height A . It features a central dashed line and eight numbered points (1-8) along the perimeter. A circle labeled "PIN 1 IDENTIFIER" is located near the bottom-left corner.
- SIDE VIEW:** A cross-section showing the component's profile. It has a top width D , a total height E , and a base width F . The component is divided into four numbered sections (1-4) along its length.
- BOTTOM VIEW:** A cross-section showing the component's base. It has a total width N and a central dashed line. It features four numbered points (1-4) along the top edge and four numbered points (5-8) along the bottom edge. Dimensions H , J , Q , R , P , $K(2x)$, L , $S(6x)$, and $M(8x)$ are indicated.

- 1) Emitter
- 2) Emitter
- 3) Base
- 4) N.C.
- 5) Collector
- 6) Collector
- 7) Collector
- 8) Collector

DIMENSIONS				
SYMBOL	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)

Technical drawing of a mechanical part with dimensions:

- Overall width: 3.35
- Overall height: 3.75
- Top section height: 2.25
- Bottom section height: 0.825
- Bottom section width: 0.35
- Feature: R0 (fillet)

R1 (17-February 2010)