

CTLT853-M833

**SURFACE MOUNT  
HIGH CURRENT  
NPN SILICON TRANSISTOR**



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**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)	$\theta_{JA}$	27.78	$^\circ C/W$
Thermal Resistance (Note 2)	$\theta_{JA}$	31.25	$^\circ C/W$
Thermal Resistance (Note 3)	$\theta_{JA}$	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	$\mu A$
$I_{CER}$	$V_{CE}=150V, R_{BE} \leq 1.0k\Omega$			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 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>

R1 (17-February 2010)

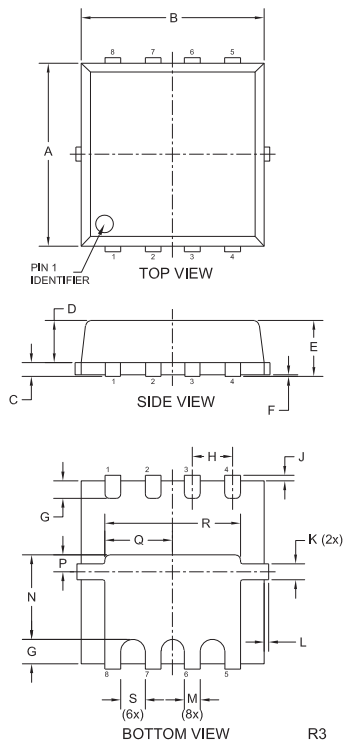
**CTLT853-M833**  
**SURFACE MOUNT**  
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**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_A=25^{\circ}\text{C}$  unless otherwise noted)

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

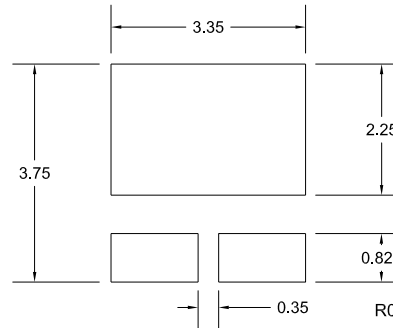
**TLM833 CASE - MECHANICAL OUTLINE**



SYMBOL	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 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 |

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