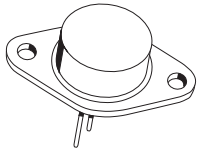


2N6383
2N6384
2N6385

**NPN SILICON POWER
DARLINGTON TRANSISTOR**



TO-3 CASE

CentralTM
Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3683 SERIES types are NPN Silicon Power Darlington Transistors designed for power amplifier applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Collector Current
Peak Collector Current
Base Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL	<u>2N6383</u>	<u>2N6384</u>	<u>2N6385</u>	UNITS
V_{CBO}	40	60	80	V
V_{CEX}	40	60	80	V
V_{CEO}	40	60	80	V
V_{EBO}		5.0		V
I_C		10		A
I_{CM}		15		A
I_B		250		mA
P_D		100		W
T_J, T_{stg}		-65 to +200		$^{\circ}\text{C}$
Θ_{JC}		1.75		$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CEV}=\text{Rated } V_{CEO}, V_{BE(\text{off})}=1.5\text{V}$		300	μA
I_{CEV}	$V_{CEV}=\text{Rated } V_{CEO}, V_{BE(\text{off})}=1.5\text{V}, T_C=150^{\circ}\text{C}$		3.0	mA
I_{CEO}	$V_{CE}=\text{Rated } V_{CEO}$		1.0	mA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	mA
BV_{CEO}	$I_C=200\text{mA}$ (2N6383)	40		V
BV_{CEO}	$I_C=200\text{mA}$ (2N6384)	60		V
BV_{CEO}	$I_C=200\text{mA}$ (2N6385)	80		V
BV_{CER}	$I_C=200\text{mA}, R_{BE}=100\Omega$ (2N6383)	40		V
BV_{CER}	$I_C=200\text{mA}, R_{BE}=100\Omega$ (2N6384)	60		V
BV_{CER}	$I_C=200\text{mA}, R_{BE}=100\Omega$ (2N6385)	80		V
BV_{CEV}	$I_C=200\text{mA}, V_{BE(\text{off})}=1.5\text{V}$ (2N6383)	40		V
BV_{CEV}	$I_C=200\text{mA}, V_{BE(\text{off})}=1.5\text{V}$ (2N6384)	60		V
BV_{CEV}	$I_C=200\text{mA}, V_{BE(\text{off})}=1.5\text{V}$ (2N6385)	80		V

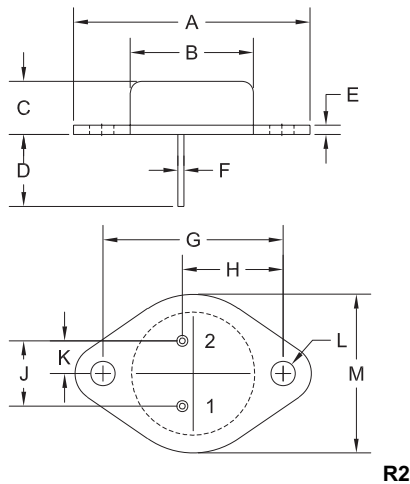
R1 (28-August 2008)

NPN SILICON POWER DARLINGTON TRANSISTOR

ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^\circ\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$V_{CE(SAT)}$	$I_C=5.0\text{A}$, $I_B=10\text{mA}$		2.0	V
$V_{CE(SAT)}$	$I_C=10\text{A}$, $I_B=100\text{mA}$		3.0	V
$V_{BE(ON)}$	$V_{CE}=3.0\text{V}$, $I_C=5.0\text{A}$		2.8	V
$V_{BE(ON)}$	$V_{CE}=3.0\text{V}$, $I_C=10\text{A}$		4.5	V
h_{FE}	$V_{CE}=3.0\text{V}$, $I_C=5.0\text{A}$	1K	20K	
h_{FE}	$V_{CE}=3.0\text{V}$, $I_C=10\text{A}$	100		
V_F	$I_F=10\text{A}$		4.0	V
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$		200	pF
$ h_{he} $	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{A}$, $f=1.0\text{MHz}$	20		
h_{he}	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{A}$, $f=1.0\text{kHz}$	1K		

TO-3 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	1.516	1.573	38.50	39.96
B (DIA)	0.748	0.875	19.00	22.23
C	0.250	0.450	6.35	11.43
D	0.433	0.516	11.00	13.10
E	0.054	0.065	1.38	1.65
F	0.035	0.045	0.90	1.15
G	1.177	1.197	29.90	30.40
H	0.650	0.681	16.50	17.30
J	0.420	0.440	10.67	11.18
K	0.205	0.225	5.21	5.72
L (DIA)	0.151	0.172	3.84	4.36
M	0.984	1.050	25.00	26.67

TO-3 (REV: R2)

LEAD CODE:

- 1) Base
- 2) Emitter
- C) Collector

MARKING: FULL PART NUMBER

R1 (28-August 2008)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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