

CEN-U45

NPN SILICON
DARLINGTON TRANSISTOR



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR CEN-U45 is a NPN silicon Darlington transistor designed for general purpose amplifier and driver applications where high gain and high power dissipation is required.



TO-202 CASE

APPLICATIONS:

- Designed for general purpose amplifiers and drivers

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

Collector-Base Voltage	V_{CBO}	50	V
Collector-Emitter Voltage	V_{CEO}	40	V
Collector-Emitter Voltage	V_{CES}	40	V
Emitter-Base Voltage	V_{EBO}	12	V
Continuous Collector Current	I_C	2.0	A
Power Dissipation	P_D	2.0	W
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	10	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +150	$^\circ\text{C}$
Thermal Resistance	Θ_{JA}	62.5	$^\circ\text{C}/\text{W}$
Thermal Resistance	Θ_{JC}	12.5	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=30\text{V}$		100	nA
I_{EBO}	$V_{EB}=10\text{V}$		100	nA
BV_{CBO}	$I_C=100\mu\text{A}$	50		V
BV_{CES}	$I_C=100\mu\text{A}$	40		V
BV_{EBO}	$I_E=10\mu\text{A}$	12		V
$V_{CE(\text{SAT})}$	$I_C=1.0\text{A}, I_B=2.0\text{mA}$		1.5	V
$V_{CE(\text{SAT})}$	$I_C=200\text{mA}, I_B=2.0\text{mA}$		1.0	V
$V_{BE(\text{SAT})}$	$I_C=1.0\text{A}, I_B=2.0\text{mA}$		2.0	V
$V_{BE(\text{ON})}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$		2.0	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=200\text{mA}$	25K	150K	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=500\text{mA}$	15K		
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$	4.0K		
f_T	$V_{CE}=5.0\text{V}, I_C=200\text{mA}, f=100\text{MHz}$	100		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		8.0	pF

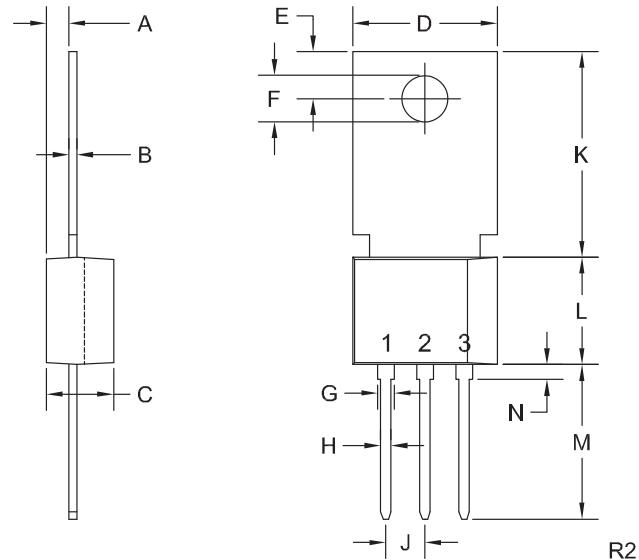
R2 (23-January 2012)

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TO-202 CASE - MECHANICAL OUTLINE



LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector
- Tab is common to pin 3

MARKING:
FULL PART NUMBER

SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.055	0.071	1.40	1.80
B	0.016	0.024	0.40	0.60
C	0.173	0.181	4.40	4.60
D	0.374	0.413	9.50	10.5
E	0.118	0.154	3.00	3.90
F (DIA)	0.124	0.150	3.15	3.80
G	0.035	0.055	0.90	1.40
H	0.023	0.031	0.59	0.80
J	0.094	0.106	2.39	2.69
K	0.459	0.559	11.66	14.21
L	0.280	0.346	7.12	8.80
M	0.406	0.531	10.3	13.5
N	0.024	0.059	0.60	1.50

TO-202 (REV: R2)

R2 (23-January 2012)

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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