

# Central<sup>TM</sup> Semiconductor Corp.

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Manufacturers of World Class Discrete Semiconductors

CEN-U45

NPN SILICON  
DARLINGTON TRANSISTOR

JEDEC TO-202 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR CEN-U45 type is a NPN Silicon Monolithic Darlington Transistor designed for applications requiring high gain and high power dissipation.

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

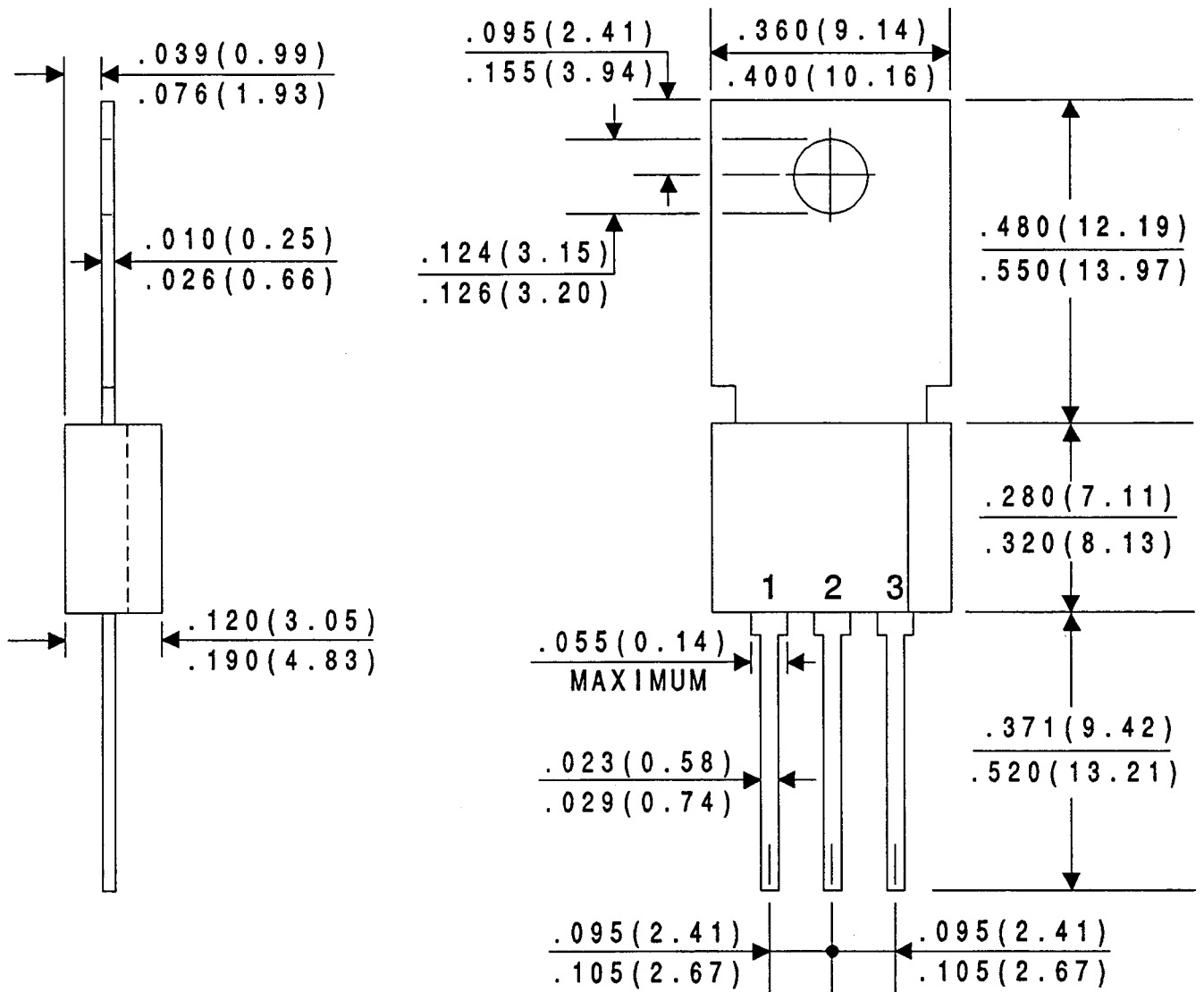
	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CES}$	40	V
Collector-Emitter Voltage	$V_{CEO}$	40	V
Emitter-Base Voltage	$V_{EBO}$	12	V
Collector Current	$I_C$	2.0	A
Power Dissipation	$P_D$	2.0	W
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$	10	W
Operating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

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
$I_{CBO}$	$V_{CB}=30\text{V}$		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
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=200\text{mA}$		1.0	V
$V_{BE(SAT)}$	$I_C=1.0\text{A}, I_B=200\text{mA}$		2.0	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{A}$		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

(SEE REVERSE SIDE)

# JEDEC TO-202 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

LEAD CODE:

- 1) EMITTER
- 2) BASE
- 3) COLLECTOR