

CEN-U05 CEN-U06 CEN-U07 NPN  
 CEN-U55 CEN-U56 CEN-U57 PNP

**COMPLEMENTARY SILICON  
 POWER TRANSISTORS**



**TO-202 CASE**



[www.centralemi.com](http://www.centralemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR CEN-U05/U55 series types are complementary silicon power transistors designed for general purpose audio amplifier applications. These devices are electrically equivalent to National Semiconductor's NSDU05, NSDU06, NSDU07, NSDU55, NSDU56, and NSDU57.

**MARKING: FULL PART NUMBER**

**APPLICATIONS:**

- Designed for general purpose high voltage amplifiers and drivers

**FEATURES:**

- High Collector-Emitter breakdown voltage
- High 10W power dissipation

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

Collector-Base Voltage	$V_{CB0}$	60	80	100	V
Collector-Emitter Voltage	$V_{CEO}$	60	80	100	V
Emitter-Base Voltage	$V_{EBO}$		4.0		V
Continuous Collector Current	$I_C$		2.0		A
Power Dissipation	$P_D$		10		W
Power Dissipation ( $T_A=25^\circ\text{C}$ )	$P_D$		1.75		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$		71.4		$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$		12.5		$^\circ\text{C/W}$

SYMBOL	CEN-U05	CEN-U06	CEN-U07	UNITS
	CEN-U55	CEN-U56	CEN-U57	
$V_{CB0}$	60	80	100	V
$V_{CEO}$	60	80	100	V
$V_{EBO}$		4.0		V
$I_C$		2.0		A
$P_D$		10		W
$P_D$		1.75		W
$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
$\theta_{JA}$		71.4		$^\circ\text{C/W}$
$\theta_{JC}$		12.5		$^\circ\text{C/W}$

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

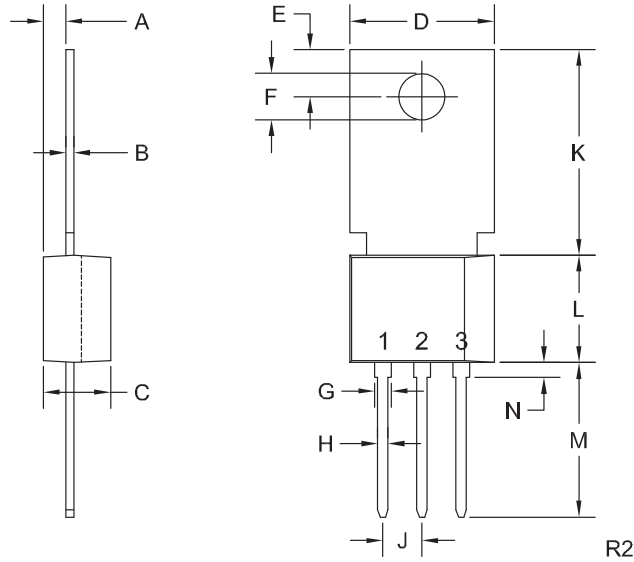
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CB0}$		0.1	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=4.0\text{V}$		100	$\mu\text{A}$
$BV_{CEO}$	$I_C=1.0\text{mA}$ (CEN-U05, CEN-U55)	60		V
$BV_{CEO}$	$I_C=1.0\text{mA}$ (CEN-U06, CEN-U56)	80		V
$BV_{CEO}$	$I_C=1.0\text{mA}$ (CEN-U07, CEN-U57)	100		V
$V_{CE(SAT)}$	$I_C=250\text{mA}, I_B=10\text{mA}$		0.5	V
$V_{CE(SAT)}$	$I_C=250\text{mA}, I_B=25\text{mA}$		0.35	V
$V_{BE(ON)}$	$V_{CE}=1.0\text{V}, I_C=250\text{mA}$		1.2	V
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=50\text{mA}$	80		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=250\text{mA}$	50		
$h_{FE}$	$V_{CE}=1.0\text{V}, I_C=500\text{mA}$	20		
$f_T$	$V_{CE}=5.0\text{V}, I_C=200\text{mA}, f=100\text{MHz}$	50		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		30	pF

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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	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 (20-January 2012)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### 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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### CONTACT US

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