

2N404
GERMANIUM
PNP TRANSISTOR



TO-5 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N404 is a germanium PNP transistor designed for low frequency, medium power amplifier and switching applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage
Collector-Emitter Voltage (Punch-through)
Emitter-Base Voltage
Continuous Collector Current
Continuous Emitter Current
Power Dissipation
Operating Junction Temperature
Storage Temperature

SYMBOL		UNITS
V_{CBO}	25	V
V_{pt}	24	V
V_{EBO}	12	V
I_C	100	mA
I_E	100	mA
P_D	150	mW
T_J	-65 to +85	$^\circ\text{C}$
T_{stg}	-65 to +100	$^\circ\text{C}$

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

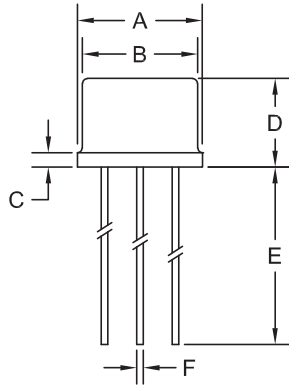
SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CBO}	$V_{CB}=12\text{V}$			5.0	μA
I_{CBO}	$V_{CB}=12\text{V}, T_A=80^\circ\text{C}$			90	μA
I_{EBO}	$V_{EB}=2.5\text{V}$			2.5	μA
BV_{CBO}	$I_C=20\mu\text{A}$	25			V
BV_{EBO}	$I_E=20\mu\text{A}$	12			V
$V_{CE(SAT)}$	$I_C=12\text{mA}, I_B=0.4\text{mA}$			0.15	V
$V_{CE(SAT)}$	$I_C=24\text{mA}, I_B=1.0\text{mA}$			0.20	V
$V_{BE(SAT)}$	$I_C=12\text{mA}, I_B=0.4\text{mA}$			0.35	V
$V_{BE(SAT)}$	$I_C=24\text{mA}, I_B=1.0\text{mA}$			0.40	V
h_{FE}	$V_{CE}=0.15\text{V}, I_C=12\text{mA}$	30			
h_{FE}	$V_{CE}=0.2\text{V}, I_C=24\text{mA}$	24			
h_{fe}	$V_{CB}=6.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		135		
h_{ie}	$V_{CE}=6.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		4.0		k Ω
h_{oe}	$V_{CE}=6.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		50		μS
h_{re}	$V_{CE}=6.0\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		7.0		$\times 10^{-4}$
C_{ob}	$V_{CB}=6.0\text{V}, I_E=0, f=1.0\text{MHz}$			20	pF
f_{hfb}	$V_{CB}=6.0\text{V}, I_E=1.0\text{mA}$	4.0			MHz

R1 (5-May 2014)

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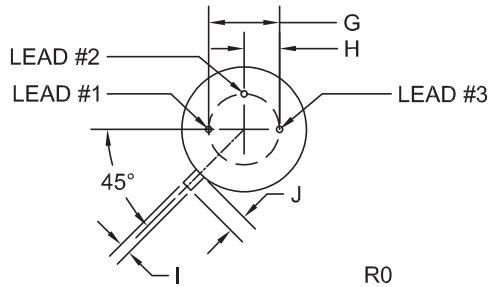


TO-5 CASE - MECHANICAL OUTLINE



SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	1.500	1.752	38.1	44.5
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-5 (REV: R0)



LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING: FULL PART NUMBER

R1 (5-May 2014)