

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

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Manufacturers of World Class Discrete Semiconductors

2N2604  
2N2605

PNP SILICON TRANSISTOR

JEDEC TO-46 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N2604, 2N2605 types are Silicon PNP Transistors designed for low-level, low noise, high gain amplifier applications.

## MAXIMUM RATINGS (T<sub>A</sub> = 25°C)

	SYMBOL		UNITS
Collector-Base Voltage	V <sub>CB0</sub>	60	V
Collector-Emitter Voltage	V <sub>CEO</sub>	45	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	V
Collector Current	I <sub>C</sub>	30	mA
Power Dissipation	P <sub>D</sub>	400	mW
Operating and Storage			
Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200	°C
Thermal Resistance	θ <sub>JA</sub>	438	°C/W

## ELECTRICAL CHARACTERISTICS (T<sub>A</sub> = 25°C unless otherwise noted)

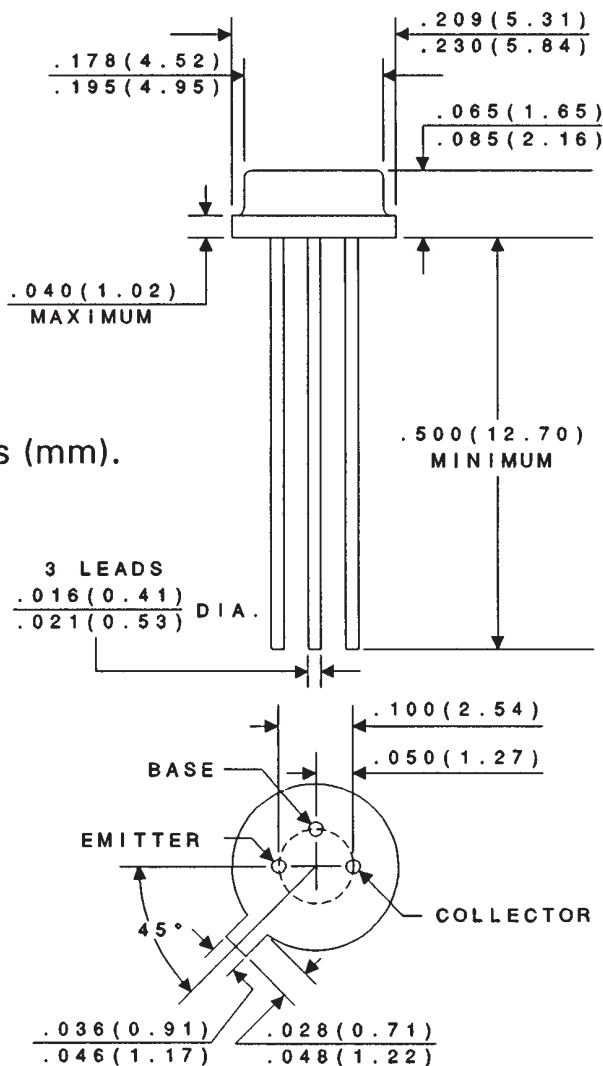
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I <sub>CES</sub>	V <sub>CE</sub> = 45V		10	nA
I <sub>CES</sub>	V <sub>CE</sub> = 45V, T <sub>A</sub> = 170°C		10	μA
I <sub>CBO</sub>	V <sub>CB</sub> = 45V		10	nA
I <sub>EBO</sub>	V <sub>EB</sub> = 5.0V		2.0	nA
BV <sub>CB0</sub>	I <sub>C</sub> = 10μA	60		V
BV <sub>CEO</sub>	I <sub>C</sub> = 10mA	45		V
BV <sub>EBO</sub>	I <sub>E</sub> = 10μA	6.0		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA		0.5	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> = 10mA, I <sub>B</sub> = 0.5mA	0.7	0.9	V
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10μA (2N2604)	40	120	-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10μA (2N2605)	100	300	-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10μA, T <sub>A</sub> = -55°C (2N2604)	10		-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10μA, T <sub>A</sub> = -55°C (2N2605)	20		-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 500μA (2N2604)	60		-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 500μA (2N2605)	150		-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10mA (2N2604)		350	-
h <sub>FE</sub>	V <sub>CE</sub> = 5.0V, I <sub>C</sub> = 10mA (2N2605)		600	-

(Continued on Reverse Side)

**ELECTRICAL CHARACTERISTICS (Continued)**

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
$f_T$	$V_{CE}=5.0V, I_C=500\mu A, f=30MHz$	30		MHz
$C_{ob}$	$V_{CB}=5.0V, I_E=0, f=1.0MHz$		6.0	pF
$h_{ie}$	$V_{CE}=5.0V, I_C=1.0mA, f=100MHz$		200	$\Omega$
$h_{ib}$	$V_{CB}=5.0V, I_E=1.0mA, f=1.0kHz$	25	35	$\Omega$
$h_{rb}$	$V_{CB}=5.0V, I_E=1.0mA, f=1.0kHz$		10	$10^{-4}$
$h_{ob}$	$V_{CB}=5.0V, I_E=1.0mA, f=1.0kHz$		1.0	$\mu mho$
$h_{fe}$	$V_{CB}=5.0V, I_E=1.0mA, f=1.0kHz$ (2N2604)	60	350	-
$h_{fe}$	$V_{CB}=5.0V, I_E=1.0mA, f=1.0kHz$ (2N2605)	150	600	-
NF	$V_{CE}=5.0V, I_C=10\mu A, R_G=10k\Omega, f=10Hz$ to 15.7kHz (2N2604)		4.0	dB
NF	$V_{CE}=5.0V, I_C=10\mu A, R_G=10k\Omega, f=10Hz$ to 15.7kHz (2N2605)		3.0	dB

**JEDEC TO-46 - MECHANICAL OUTLINE**



All Dimensions in Inches (mm).