

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

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Manufacturers of World Class Discrete Semiconductors

2N4208  
2N4209

PNP SILICON TRANSISTOR

JEDEC TO-18 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N4208, 2N4209 types are PNP Saturated Switching Transistors designed for high speed switching applications.

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

	SYMBOL	2N4208	2N4209	UNITS
Collector-Base Voltage	V <sub>CBO</sub>	12	15	V
Collector-Emitter Voltage	V <sub>CEO</sub>	12	15	V
Emitter-Base Voltage	V <sub>EBO</sub>		4.5	V
Collector Current	I <sub>C</sub>	200		mA
Power Dissipation	P <sub>D</sub>		0.5	W
Power Dissipation (T <sub>C</sub> =25°C)	P <sub>D</sub>		1.2	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C
Thermal Resistance	θ <sub>JA</sub>		350	°C/W
Thermal Resistance	θ <sub>JC</sub>		146	°C/W

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

SYMBOL	TEST CONDITIONS	2N4208		2N4209		UNITS
		MIN	MAX	MIN	MAX	
I <sub>CES</sub>	V <sub>CE</sub> =6.0V		10			nA
I <sub>CES</sub>	V <sub>CE</sub> =6.0V, T <sub>A</sub> =125°C		5.0			μA
I <sub>CES</sub>	V <sub>CE</sub> =8.0V				10	nA
I <sub>CES</sub>	V <sub>CE</sub> =8.0V, T <sub>A</sub> =125°C				5.0	μA
BV <sub>CBO</sub>	I <sub>C</sub> =100μA	12		15		V
BV <sub>CES</sub>	I <sub>C</sub> =100μA	12		15		V
BV <sub>CEO</sub>	I <sub>C</sub> =3.0mA	12		15		V
BV <sub>EBO</sub>	I <sub>E</sub> =100μA	4.5		4.5		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =1.0mA, I <sub>B</sub> =100μA		0.13		0.15	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA		0.15		0.18	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA		0.50		0.60	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =1.0mA, I <sub>B</sub> =100μA		0.80		0.80	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =10mA, I <sub>B</sub> =1.0mA	0.78	0.95	0.78	0.95	V
V <sub>BE(SAT)</sub>	I <sub>C</sub> =50mA, I <sub>B</sub> =5.0mA		1.5		1.5	V
h <sub>FE</sub>	V <sub>CE</sub> =0.5V, I <sub>C</sub> =1.0mA	15		35		
h <sub>FE</sub>	V <sub>CE</sub> =0.3V, I <sub>C</sub> =10mA	30	120	50	120	
h <sub>FE</sub>	V <sub>CE</sub> =0.3V, I <sub>C</sub> =10mA, T <sub>A</sub> =-55°C	12		20		
h <sub>FE</sub>	V <sub>CE</sub> =1.0V, I <sub>C</sub> =50mA	30		40		

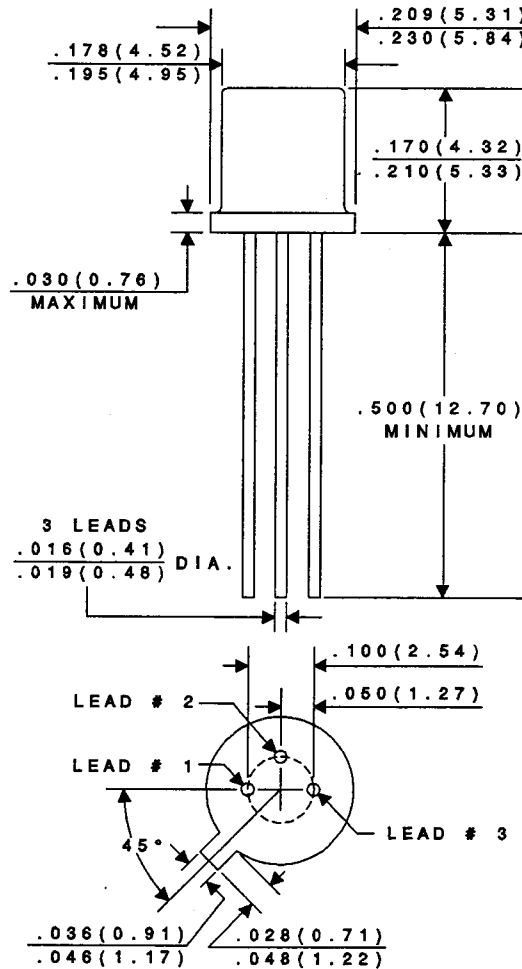
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ELECTRICAL CHARACTERISTICS (Continued)

SYMBOL	TEST CONDITIONS	2N4208		2N4209		UNITS
		MIN	MAX	MIN	MAX	
$f_T$	$V_{CE}=10V, I_C=10mA, f=100MHz$	700		850		MHz
$C_{ob}$	$V_{CB}=5.0V, I_E=0$		3.0		3.0	pF
$C_{ib}$	$V_{BE}=0.5V, I_C=0$		3.5		3.5	pF
$t_{on}$	$V_{CC}=1.5V, I_C=10mA, I_{B1}=1.0mA$		15		15	ns
$t_{off}$	$V_{CC}=1.5V, I_C=10mA, I_{B1}=I_{B2}=1.0mA$		20		20	ns
$\tau_s$	$V_{CC}=3.0V, I_C=10mA, I_{B1}=I_{B2}=10mA$		20		20	ns

JEDEC TO-18 CASE - MECHANICAL OUTLINE



All Dimensions in Inches (mm).

Lead Code:

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

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