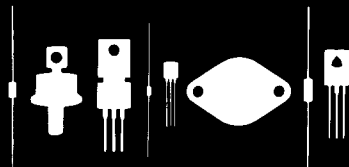


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2N4256

NPN SILICON TRANSISTOR

JEDEC TO-92 CASE (ECB)

**DESCRIPTION**

The CENTRAL SEMICONDUCTOR 2N4256 type is a Silicon NPN Planar Epitaxial Transistor designed for low level medium speed switching applications.

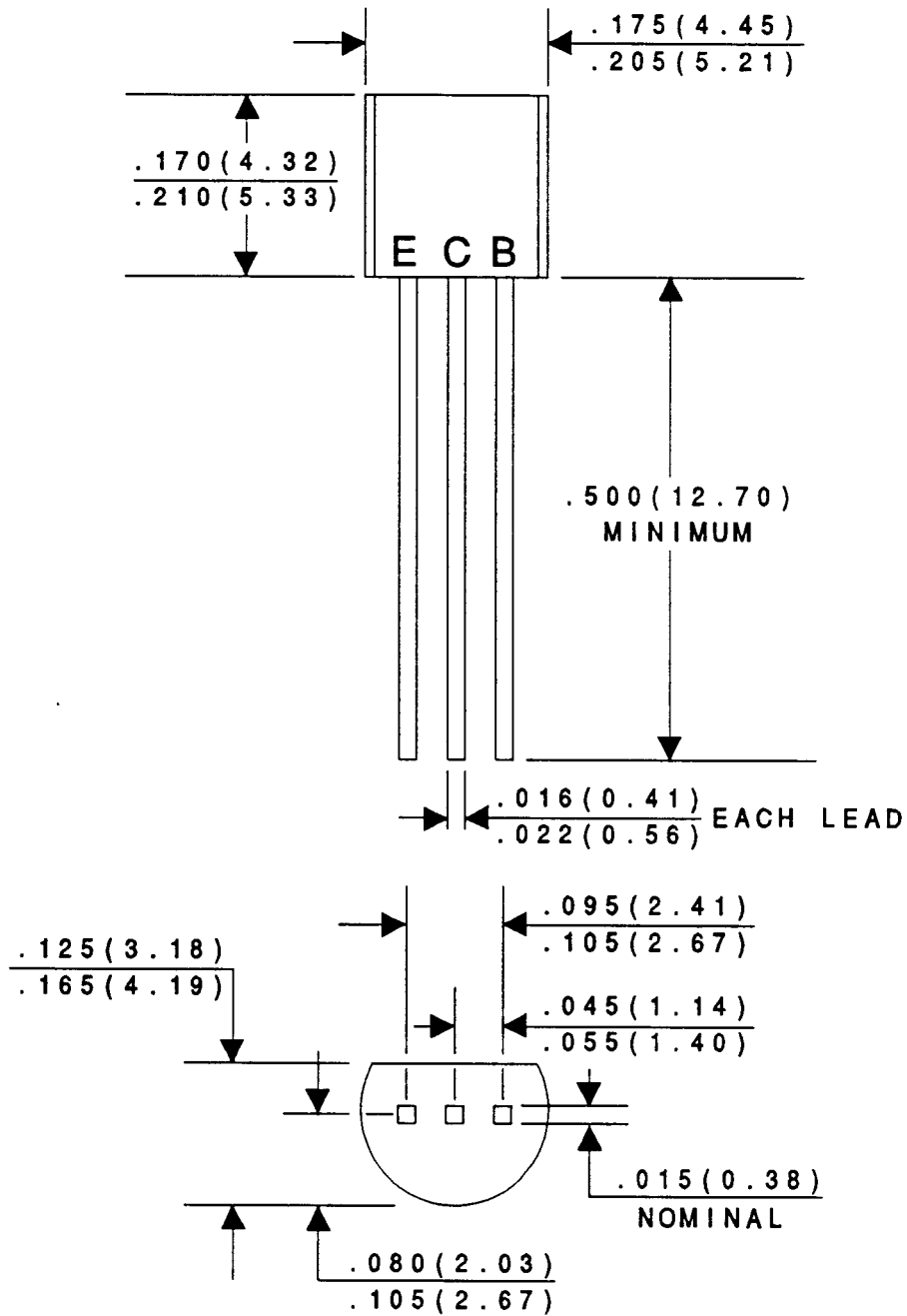
**MAXIMUM RATINGS** ( $T_A = 25^\circ\text{C}$ )

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	$V_{CB0}$	30	V
Collector-Emitter Voltage	$V_{CES}$	30	V
Emitter-Base Voltage	$V_{EBO}$	5.0	V
Collector Current	$I_C$	100	mA
Power Dissipation	$P_D$	625	mW
Power Dissipation ( $T_C = 25^\circ\text{C}$ )	$P_D$	1.5	W
Operating and Storage			
Junction Temperature	$T_J, T_{stg}$	-65 to +150	$^\circ\text{C}$
Thermal Resistance	$\theta_{JA}$	200	$^\circ\text{C/W}$
Thermal Resistance	$\theta_{JC}$	83.3	$^\circ\text{C/W}$

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

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>TYP</u>	<u>MAX</u>	<u>UNITS</u>
$I_{CBO}$	$V_{CB} = 30\text{V}$			500	nA
$I_{CBO}$	$V_{CE} = 18\text{V}, T_A = 100^\circ\text{C}$			15	$\mu\text{A}$
$I_{CES}$	$V_{CE} = 30\text{V}$			500	nA
$I_{EBO}$	$V_{EB} = 5.0\text{V}$			500	nA
$BV_{CBO}$	$I_C = 100\mu\text{A}$	30			V
$BV_{CES}$	$I_C = 1.0\text{mA}$	30			V
$BV_{EBO}$	$I_E = 100\mu\text{A}$	5.0			V
$V_{CE(SAT)}$	$I_C = 0.1\text{mA}, I_B = 2.0\mu\text{A}$			0.2	V
$V_{CE(SAT)}$	$I_C = 1.0\text{mA}, I_B = 20\mu\text{A}$			0.2	V
$V_{CE(SAT)}$	$I_C = 10\text{mA}, I_B = 200\mu\text{A}$			0.2	V
$V_{CE(SAT)}$	$I_C = 50\text{mA}, I_B = 2.5\text{mA}$			0.2	V
$V_{BE(SAT)}$	$I_C = 50\text{mA}, I_B = 2.5\text{mA}$			0.92	V
$h_{FE}$	$V_{CE} = 4.5\text{V}, I_C = 2.0\text{mA}$	100		500	
$h_{FE}$	$V_{CE} = 0.2\text{V}, I_C = 10\text{mA}$	60			
$h_{FE}$	$V_{CE} = 0.2\text{V}, I_C = 50\text{mA}$	20			
$f_T$	$V_{CE} = 1.0\text{V}, I_C = 10\text{mA}$		200		MHz
$C_{ib}$	$V_{BE} = 0.5\text{V}, I_C = 0, f = 1.0\text{MHz}$		10		pF
$C_{ob}$	$V_{CB} = 10\text{V}, I_E = 0, f = 1.0\text{MHz}$			4.0	pF
$Q_{SB}$	$I_C = 10\text{mA}, I_B = 0.32\text{mA}$			600	pC
$t_{on}$	$V_{CC} = 6.0\text{V}, I_C = 10\text{mA}$		4.0		ns
$t_{off}$	$V_{CC} = 6.0\text{V}, I_C = 10\text{mA}$			3.5	$\mu\text{s}$
$t_{on}$	$V_{CC} = 6.0\text{V}, I_C = 10\text{mA},$ $I_{B1} = 0.32\text{mA}, I_{B2} = 54\mu\text{A}$			180	ns
$t_{off}$	$V_{CC} = 6.0\text{V}, I_C = 10\text{mA},$ $I_{B1} = 0.32\text{mA}, I_{B2} = 54\mu\text{A}$			3.5	$\mu\text{s}$

# JEDEC TO-92 CASE - MECHANICAL DIMENSIONS



All Dimensions in Inches (mm).