

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

145 Adams Ave., Hauppauge, NY 11788 USA  
Phone (631) 435-1110 FAX (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com

2N5320 2N5321 NPN  
2N5322 2N5323 PNP

COMPLEMENTARY SILICON  
SWITCHING TRANSISTORS

JEDEC TO-39 CASE

## DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N5320 Series types are Complementary Silicon Power Transistors manufactured by the Epitaxial Planar Process, mounted in a hermetically sealed metal case, designed for amplifier and switching applications.

## MAXIMUM RATINGS (T<sub>C</sub>=25°C unless otherwise noted)

	SYMBOL	2N5320 2N5322	2N5321 2N5323	UNITS
Collector-Base Voltage	V <sub>CB0</sub>	100	75	V
Collector-Emitter Voltage (V <sub>BE</sub> =1.5V)	V <sub>CEV</sub>	100	75	V
Collector-Emitter Voltage	V <sub>CEO</sub>	75	50	V
Emitter-Base Voltage	V <sub>EBO</sub>	6.0	5.0	V
Collector Current	I <sub>C</sub>		2.0	A
Base Current	I <sub>B</sub>		1.0	A
Power Dissipation	P <sub>D</sub>		10	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200		°C
Thermal Resistance	θ <sub>JC</sub>		17.5	°C/W
Thermal Resistance	θ <sub>JA</sub>		175	°C/W

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

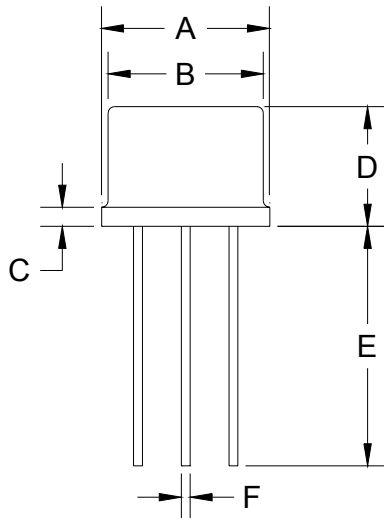
SYMBOL	TEST CONDITIONS	2N5320 2N5322		2N5321 2N5323		UNITS
		MIN	MAX	MIN	MAX	
I <sub>CB0</sub>	V <sub>CB</sub> =80V		0.5		-	μA
I <sub>CB0</sub>	V <sub>CB</sub> =60V		-		5.0	μA
I <sub>EBO</sub>	V <sub>EB</sub> =5.0V		0.1		-	μA
I <sub>EBO</sub>	V <sub>EB</sub> =4.0V		-		0.5	μA
BV <sub>CEV</sub>	I <sub>C</sub> =0.1mA, V <sub>BE</sub> =1.5V	100		75		V
BV <sub>CEO</sub>	I <sub>C</sub> =10mA	75		50		V
BV <sub>EBO</sub>	I <sub>E</sub> =0.1mA	6.0		5.0		V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA (2N5320)		0.5		-	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA (2N5321)		-		0.8	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA (2N5322)		0.7		-	V
V <sub>CE(SAT)</sub>	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA (2N5323)		-		1.2	V
V <sub>BE(ON)</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =500mA		1.1		1.4	V
h <sub>FE</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =500mA	30	150	40	250	
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =1.0A	10		-		
f <sub>T</sub>	V <sub>CE</sub> =4.0V, I <sub>C</sub> =50mA, f=10MHz	50		50		MHz

(SEE REVERSE SIDE)

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

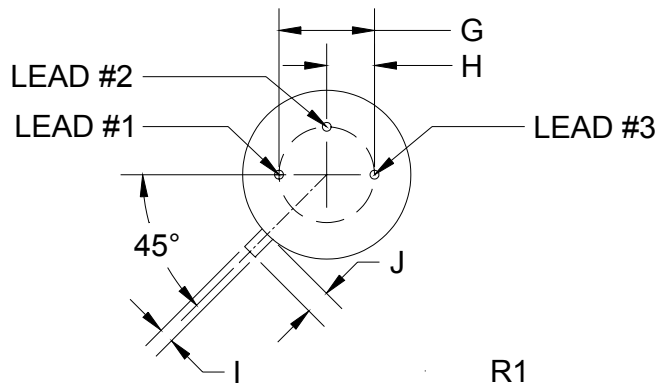
SYMBOL	TEST CONDITIONS	2N5320 2N5322		2N5321 2N5323		UNITS
		MIN	MAX	MIN	MAX	
$t_{on}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=50\text{mA}$ (2N5320, 2N5321)		80		80	ns
$t_{on}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=50\text{mA}$ (2N5322, 2N5323)		100		100	ns
$t_{off}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=I_{B2}=50\text{mA}$ (2N5320, 2N5321)		800		800	ns
$t_{off}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=I_{B2}=50\text{mA}$ (2N5322, 2N5323)		1000		1000	ns

TO-39 PACKAGE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	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	0.500	-	12.70	-
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-39 (REV: R1)



Lead Code

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

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

145 Adams Ave., Hauppauge, NY 11788 USA  
Phone (631) 435-1110 FAX (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

www.centrasemi.com