

2N5320 2N5321 NPN  
2N5322 2N5323 PNP

# COMPLEMENTARY SILICON SWITCHING TRANSISTORS



TO-39 CASE



www.centrasemi.com

## DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5320, 2N5322 series types are complementary silicon power transistors manufactured by the epitaxial planar process, designed for amplifier and switching applications.

## MARKING: FULL PART NUMBER

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

Collector-Base Voltage  
Collector-Emitter Voltage  
Collector-Emitter Voltage  
Emitter-Base Voltage  
Continuous Collector Current  
Continuous Base Current  
Power Dissipation  
Operating and Storage Junction Temperature  
Thermal Resistance  
Thermal Resistance

SYMBOL	2N5320	2N5321	UNITS
	2N5322	2N5323	
$V_{CBO}$	100	75	V
$V_{CEV}$	100	75	V
$V_{CEO}$	75	50	V
$V_{EBO}$	6.0	5.0	V
$I_C$		2.0	A
$I_B$		1.0	A
$P_D$		10	W
$T_J, T_{stg}$	-65 to +200		$^{\circ}\text{C}$
$\theta_{JA}$		175	$^{\circ}\text{C/W}$
$\theta_{JC}$		17.5	$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5320		2N5321		UNITS
		2N5322		2N5323		
$I_{CBO}$	$V_{CB}=80\text{V}$	-	0.5	-	-	$\mu\text{A}$
$I_{CBO}$	$V_{CB}=60\text{V}$	-	-	-	5.0	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=5.0\text{V}$	-	0.1	-	-	$\mu\text{A}$
$I_{EBO}$	$V_{EB}=4.0\text{V}$	-	-	-	0.5	$\mu\text{A}$
$BV_{CEV}$	$I_C=100\mu\text{A}, V_{BE}=1.5\text{V}$	100	-	75	-	V
$BV_{CEO}$	$I_C=10\text{mA}$	75	-	50	-	V
$BV_{EBO}$	$I_E=100\mu\text{A}$	6.0	-	5.0	-	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$ (2N5320)	-	0.5	-	-	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$ (2N5321)	-	-	-	0.8	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$ (2N5322)	-	0.7	-	-	V
$V_{CE(SAT)}$	$I_C=500\text{mA}, I_B=50\text{mA}$ (2N5323)	-	-	-	1.2	V
$V_{BE(ON)}$	$V_{CE}=4.0\text{V}, I_C=500\text{mA}$	-	1.1	-	1.4	V
$h_{FE}$	$V_{CE}=4.0\text{V}, I_C=500\text{mA}$	30	175	40	250	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	10	-	-	-	
$f_T$	$V_{CE}=4.0\text{V}, I_C=50\text{mA}, f=10\text{MHz}$	50	-	50	-	MHz

R5 (11-May 2017)

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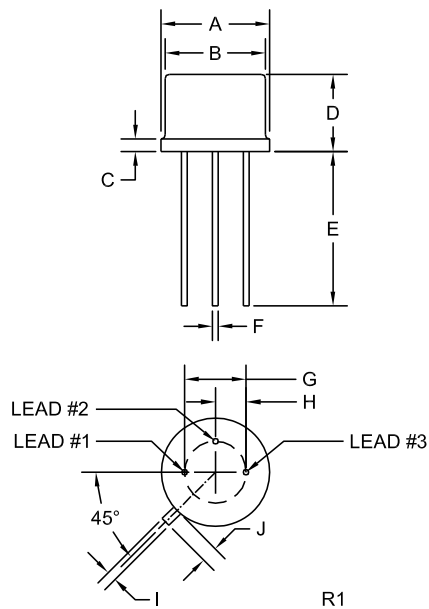
**COMPLEMENTARY SILICON  
SWITCHING TRANSISTORS**



**ELECTRICAL CHARACTERISTICS - Continued:** ( $T_C=25^{\circ}\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	MAX	UNITS
$t_{on}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=50\text{mA}$ (2N5320, 2N5321)	80	ns
$t_{on}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=50\text{mA}$ (2N5322, 2N5323)	100	ns
$t_{off}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=I_{B2}=50\text{mA}$ (2N5320, 2N5321)	800	ns
$t_{off}$	$V_{CC}=30\text{V}$ , $I_C=500\text{mA}$ , $I_{B1}=I_{B2}=50\text{mA}$ (2N5322, 2N5323)	1.0	$\mu\text{s}$

**TO-39 CASE - MECHANICAL OUTLINE**



DIMENSIONS				
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	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

**MARKING: FULL PART NUMBER**

R5 (11-May 2017)

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2<sup>nd</sup> day air)
- Online technical data and parametric search
- SPICE models
- Custom electrical curves
- Environmental regulation compliance
- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
- Application and design sample kits
- Custom product and package development

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### REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix "TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix "PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

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### CONTACT US

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