

2N2920  
2N2920A

**SILICON  
DUAL NPN TRANSISTORS**



**TO-78 CASE**



[www.centrasemi.com](http://www.centrasemi.com)

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N2920 and 2N2920A are dual silicon NPN transistors manufactured by the epitaxial planar process utilizing two individual chips mounted in a hermetically sealed metal case designed for differential amplifier applications.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage	$V_{CB0}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	60	V
Emitter-Base Voltage	$V_{EBO}$	6.0	V
Continuous Collector Current	$I_C$	30	mA
Power Dissipation (One Die)	$P_D$	300	mW
Power Dissipation (Both Dice)	$P_D$	500	mW
Power Dissipation (One Die, $T_C=25^\circ\text{C}$ )	$P_D$	750	mW
Power Dissipation (Both Dice, $T_C=25^\circ\text{C}$ )	$P_D$	1.5	W
Operating and Storage Junction Temperature	$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

**SYMBOL**

$V_{CB0}$	60	V
$V_{CEO}$	60	V
$V_{EBO}$	6.0	V
$I_C$	30	mA
$P_D$	300	mW
$P_D$	500	mW
$P_D$	750	mW
$P_D$	1.5	W
$T_J, T_{stg}$	-65 to +200	$^\circ\text{C}$

**UNITS**

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=45\text{V}$		2.0	nA
$I_{CEO}$	$V_{CE}=5.0\text{V}$		2.0	nA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		2.0	nA
$BV_{CBO}$	$I_C=10\mu\text{A}$	60		V
$BV_{CEO}$	$I_C=10\text{mA}$	60		V
$BV_{EBO}$	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=1.0\text{mA}, I_B=100\mu\text{A}$		0.35	V
$V_{BE(ON)}$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$		0.70	V
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$	150	600	
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}, T_A=-55^\circ\text{C}$	40		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	225		
$h_{FE}$	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	300		
$f_T$	$V_{CE}=5.0\text{V}, I_C=500\mu\text{A}, f=20\text{MHz}$	60		MHz
$C_{ob}$	$V_{CB}=5.0\text{V}, I_E=0, f=140\text{kHz}$		6.0	pF
NF	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}, R_S=10\text{k}\Omega,$ $f=1.0\text{kHz}, BW=200\text{Hz}$		3.0	dB

R1 (4-April 2014)

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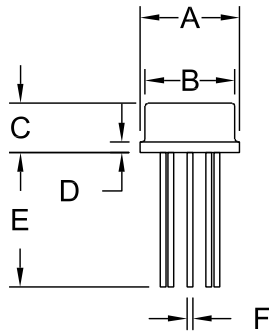


**MATCHING CHARACTERISTICS:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N2920		2N2920A		UNITS
		MIN	MAX	MIN	MAX	
$h_{FE1}/h_{FE2}^*$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	0.9	1.0	0.9	1.0	
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$	-	5.0	-	2.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	-	3.0	-	1.5	mV
$\Delta(V_{BE1}-V_{BE2})$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, T_A=-55^\circ\text{C}$ to $+25^\circ\text{C}$	-	0.8	-	-	mV
$\Delta(V_{BE1}-V_{BE2})$	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}, T_A=+25^\circ\text{C}$ to $+125^\circ\text{C}$	-	1.0	-	-	mV

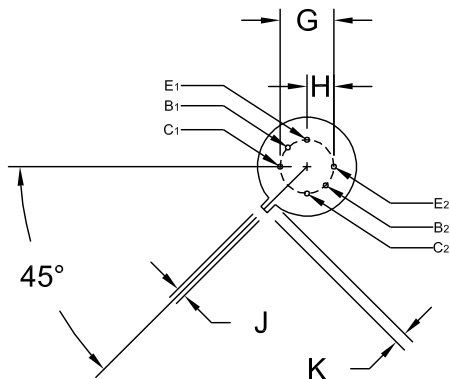
\*The lowest reading is taken as  $h_{FE1}$ .

**TO-78 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.305	0.335	7.75	8.51
C	0.150	0.185	3.81	4.70
D	-	0.040	-	1.02
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G	0.200		5.08	
H	0.100		2.54	
J	0.028	0.034	0.71	0.86
K	0.029	0.045	0.74	1.14

TO-78 (REV: R1)



R1

**MARKING: FULL PART NUMBER**

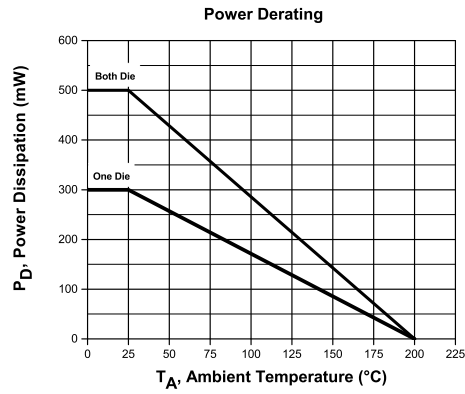
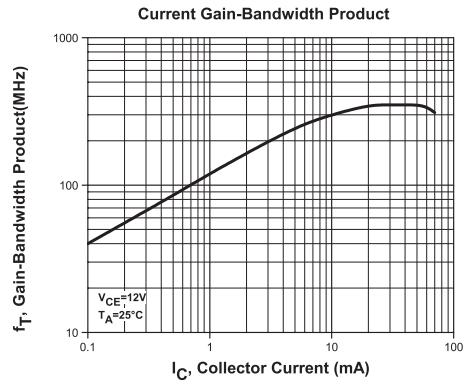
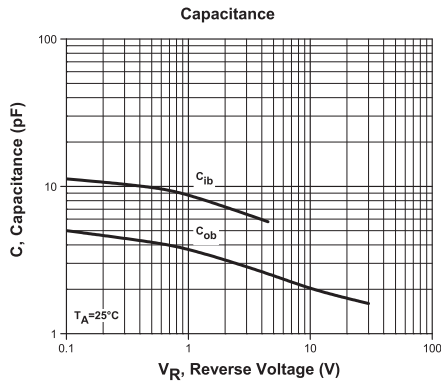
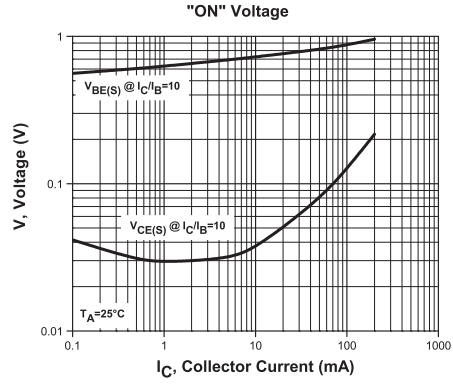
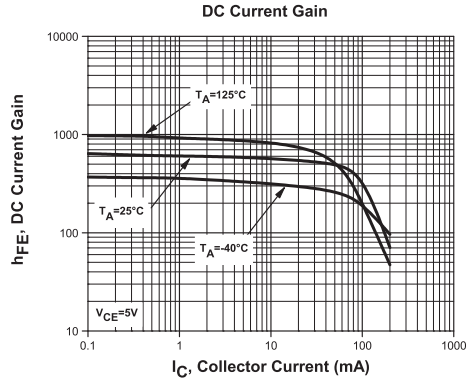
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TYPICAL ELECTRICAL CHARACTERISTICS



R1 (4-April 2014)

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- Inventory bonding
- Consolidated shipping options
- Custom bar coding for shipments
- Custom product packing

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### DESIGNER SUPPORT/SERVICES

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- Customer specific screening
- Up-screening capabilities
- Special wafer diffusions
- PbSn plating options
- Package details
- Application notes
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