

2N2920
2N2920A

**SILICON
DUAL NPN TRANSISTORS**



TO-78 CASE



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_{CEO}	60	
V_{EBO}	6.0	
I_C	30	
P_D	300	
P_D	500	
P_D	750	
P_D	1.5	
T_J, T_{stg}	-65 to +200	

UNITS

V
V
V
mA
mW
mW
mW
W
$^\circ\text{C}$

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_{CB0}	$I_C=10\mu\text{A}$	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)

2N2920
2N2920A

SILICON
DUAL NPN TRANSISTORS

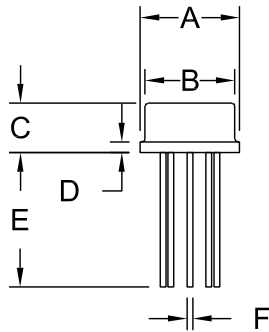


MATCHING CHARACTERISTICS: ($T_A=25^\circ\text{C}$ unless otherwise noted)

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

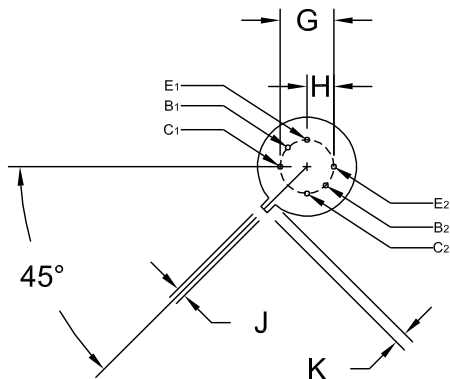
*The lowest reading is taken as h_{FE1} .

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

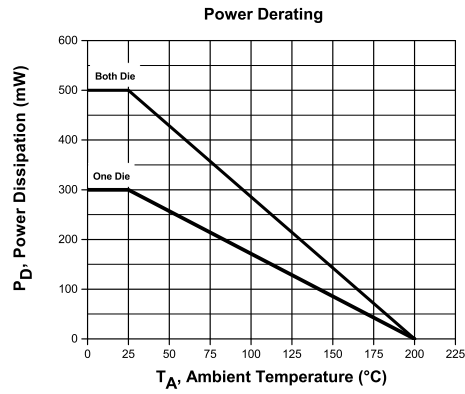
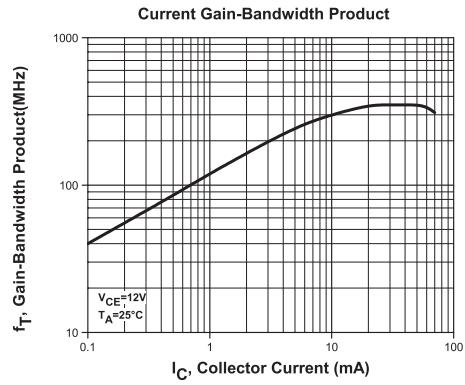
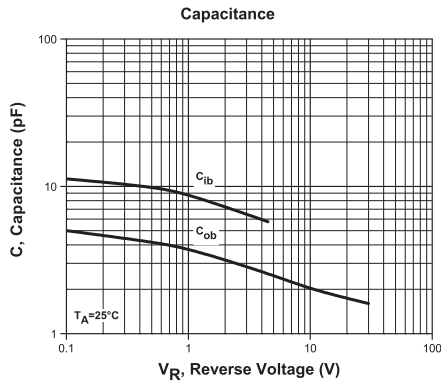
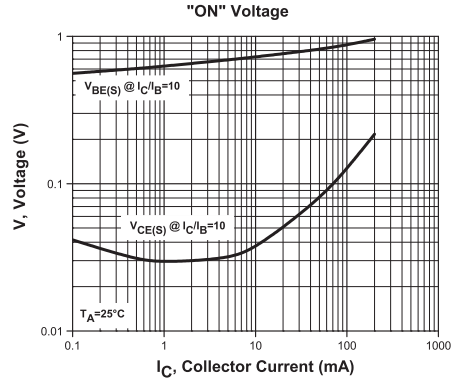
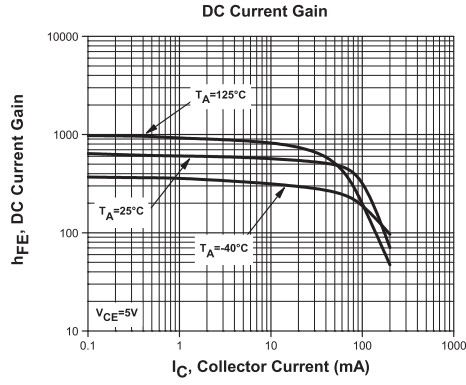
R1 (4-April 2014)

2N2920
2N2920A

SILICON
DUAL NPN TRANSISTORS



TYPICAL ELECTRICAL CHARACTERISTICS



R1 (4-April 2014)