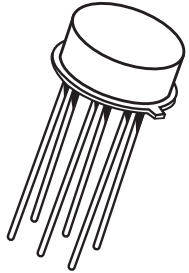


2N2920
NPN SILICON
DUAL TRANSISTORS



JEDEC TO-78 CASE

CentralTM

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N2920 is a silicon NPN dual transistor utilizing two individual chips mounted in a hermetically sealed metal case designed for differential amplifier applications.

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	6.0	V
Collector Current	I_C	30	mA
Power Dissipation (One Die)	P_D	300	mW
Power Dissipation (Both Die)	P_D	500	mW
Power Dissipation (One Die, $T_C=25^\circ\text{C}$)	P_D	750	mW
Power Dissipation (Both Die, $T_C=25^\circ\text{C}$)	P_D	1500	mW
Operating and Storage			
Junction Temperature	T_J, T_{stg}	-65 to +200	$^\circ\text{C}$

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_{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
$V_{CE(SAT)}$	$I_C=1.0\text{mA}, I_B=0.1\text{mA}$		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

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

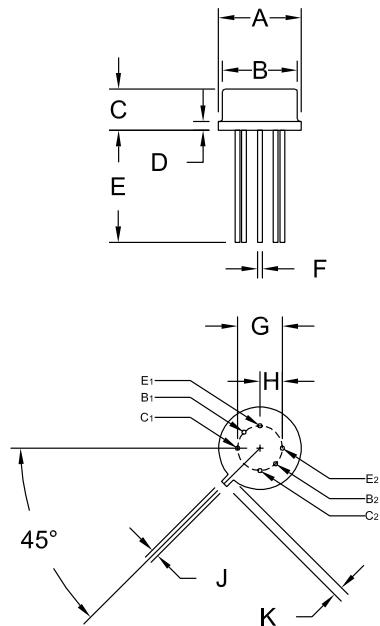
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
C_{ob}	$V_{CB}=5.0\text{V}$, $I_E=0$, $f=140\text{kHz}$		6.0	pF
NF	$V_{CE}=5.0\text{V}$, $I_C=10\mu\text{A}$, $R_S=10\text{k}\Omega$ $f=1.0\text{kHz}$, $BW=200\text{Hz}$		3.0	dB

MATCHING CHARACTERISTICS:

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2}^*	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$	0.9	1.0	
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=10\mu\text{A}$		5.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$		3.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$		5.0	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 h_{FE} reading is taken as h_{FE1}

JEDEC 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)