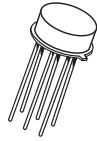


**2N3810
2N3810A**

**DUAL PNP
SILICON TRANSISTOR**



TO-78 CASE

CentralTM

Semiconductor Corp.

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3810 and 2N3810A types are dual PNP silicon 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°C)

Collector-Emitter Voltage
Collector-Base Voltage
Emitter-Base Voltage
Continuous Collector Current
Power Dissipation (One Die)
Power Dissipation (Both Die)
Operating and Storage Junction Temperature

SYMBOL		UNITS
V _{CEO}	60	V
V _{CBO}	60	V
V _{EBO}	5.0	V
I _C	50	mA
P _D	500	mW
P _D	600	mW
T _J , T _{stg}	-65 to +200	°C

ELECTRICAL CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I _{CBO}	V _{CB} =50V		10	nA
I _{EBO}	V _{BE} =4.0V		20	nA
BV _{CEO}	I _C =10mA	60		V
BV _{CBO}	I _C =10μA	60		V
BV _{EBO}	I _E =10μA	5.0		V
V _{CE(SAT)}	I _C =100μA, I _B =10μA		0.20	V
V _{CE(SAT)}	I _C =1.0mA, I _B =100μA		0.25	V
V _{BE(SAT)}	I _C =100μA, I _B =10μA		0.70	V
V _{BE(SAT)}	I _C =1.0mA, I _B =100μA		0.80	V
V _{BE(ON)}	V _{CE} =5.0V, I _C =100μA		0.70	V
h _{FE}	V _{CE} =5.0V, I _C =10μA	100		
h _{FE}	V _{CE} =5.0V, I _C =100μA	150	450	
h _{FE}	V _{CE} =5.0V, I _C =500μA	150	450	
h _{FE}	V _{CE} =5.0V, I _C =1.0mA	150	450	
h _{FE}	V _{CE} =5.0V, I _C =10mA	125		
f _T	V _{CE} =5.0V, I _C =500μA, f=30MHz	30		MHz
f _T	V _{CE} =5.0V, I _C =1.0mA, f=100MHz	100	500	MHz
C _{ob}	V _{CB} =5.0V, I _E =0, f=100kHz		4.0	pF
C _{ib}	V _{BE} =0.5V, I _C =0, f=100kHz		8.0	pF

**DUAL PNP
SILICON TRANSISTOR**

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

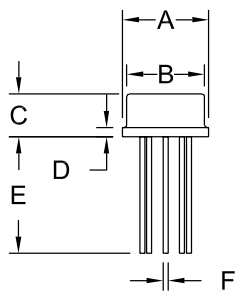
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{ie}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	3.0	30	Ω
h_{re}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$		25	$\times 10^{-4}$
h_{fe}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	150	600	
h_{oe}	$V_{CE}=10\text{V}, I_C=1.0\text{mA}, f=1.0\text{kHz}$	5.0	60	μS
NF	$V_{CE}=10\text{V}, I_C=100\mu\text{A}, R_G=3.0\text{k}\Omega,$ $f=100\text{Hz}, \text{BW}=20\text{Hz}$		7.0	dB

MATCHING CHARACTERISTICS:

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (2N3810)	0.90	1.0	
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (2N3810A)	0.95	1.0	
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$ to 10mA		5.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (2N3810)		3.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$ (2N3810A)		1.5	mV

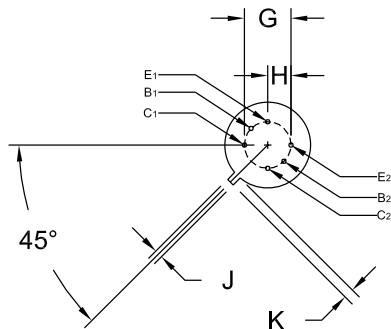
1) The lowest h_{FE} reading is taken as h_{FE1} .

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