2N3811
2N3811A

SILICON
DUAL PNP TRANSISTORS

TO-78 CASE

Central Semiconductor Corp.

www.centralsemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3811 and 2N3811A are dual silicon PNP 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)	**SYMBOL**		**UNITS**
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5.0	V
Continuous Collector Current	I_C	50	mA
Power Dissipation (One Die)	P_D	500	mW
Power Dissipation (Both Dice)	P_D	600	mW
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	°C

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

SYMBOL	**TEST CONDITIONS**	**MIN**	**MAX**	**UNITS**
I_{CBO}	V_{CB}=50V		10	nA
I_{EBO}	V_{EB}=4.0V		20	nA
BV_{CBO}	I_C=10μA	60		V
BV_{CEO}	I_C=10mA	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=1.0μA	75		
h_{FE}	V_{CE}=5.0V, I_C=10μA	225		
h_{FE}	V_{CE}=5.0V, I_C=100μA	300	900	
h_{FE}	V_{CE}=5.0V, I_C=500μA	300	900	
h_{FE}	V_{CE}=5.0V, I_C=1.0mA	300	900	
h_{FE}	V_{CE}=5.0V, I_C=10mA	250		
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
h_{ie}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	10	40	Ω
h_{re}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz		25	$x10^{-4}$
h_{fe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	300	900	
h_{oe}	V_{CE}=10V, I_C=1.0mA, f=1.0kHz	5.0	60	μS
NF	V_{CE}=10V, I_C=100μA, R_G=3.0kΩ, f=100Hz, BW=20Hz		4.0	dB

R0 (31-January 2014)

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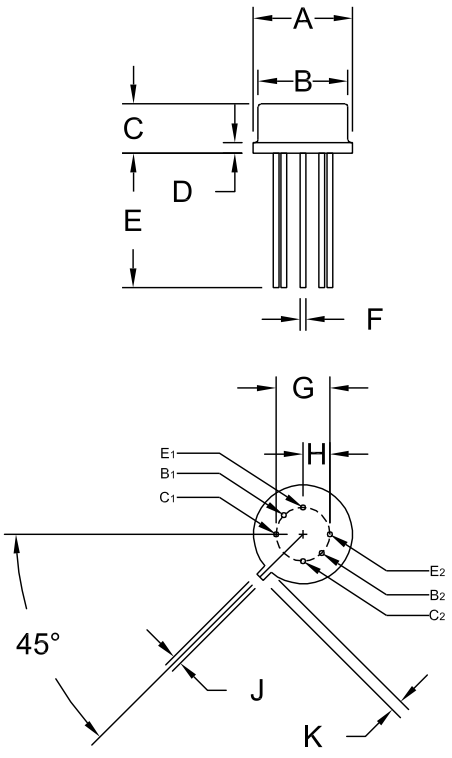
MATCHING CHARACTERISTICS: (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2} (Note 1)	V_{CE}=5.0V, I_C=100μA (2N3811)	0.90	1.0	
h_{FE1}/h_{FE2} (Note 1)	V_{CE}=5.0V, I_C=100μA (2N3811A)	0.95	1.0	
$\lvert V_{BE1}\text{-}V_{BE2}\rvert$	V_{CE}=5.0V, I_C=10μA to 10mA		5.0	mV
$\lvert V_{BE1}\text{-}V_{BE2}\rvert$	V_{CE}=5.0V, I_C=100μA (2N3811)		3.0	mV
$\lvert V_{BE1}\text{-}V_{BE2}\rvert$	V_{CE}=5.0V, I_C=100μA (2N3811A)		1.5	mV

Notes: (1) The lowest reading is taken as h_{FE1}.

TO-78 CASE - MECHANICAL OUTLINE



R1

DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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)

MARKING: FULL PART NUMBER

R0 (31-January 2014)