

2N2060M
SILICON
DUAL NPN TRANSISTOR



TO-78 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N2060M is a silicon dual NPN transistor utilizing two individual chips mounted in a hermetically sealed metal case designed for differential amplifier applications.

MARKING: FULL PART NUMBER

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

	SYMBOL		UNITS
Collector-Base Voltage	V_{CBO}	100	V
Collector-Emitter Voltage	V_{CER}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	7.0	V
Continuous Collector Current	I_C	500	mA
Power Dissipation (One Die)	P_D	500	mW
Power Dissipation (Both Dice)	P_D	600	mW
Power Dissipation (One Die, $T_C=25^{\circ}\text{C}$)	P_D	1.5	W
Power Dissipation (Both Dice, $T_C=25^{\circ}\text{C}$)	P_D	3.0	W
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}	$V_{CB}=80\text{V}$		2.0	nA
I_{EBO}	$V_{EB}=5.0\text{V}$		2.0	nA
BV_{CBO}	$I_C=100\mu\text{A}$	100		V
BV_{CER}	$I_C=10\text{mA}, R_{BE}=10\Omega$	80		V
BV_{CEO}	$I_C=30\text{mA}$	60		V
BV_{EBO}	$I_E=100\mu\text{A}$	7.0		V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		1.2	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.9	V
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\mu\text{A}$	25	150	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=100\mu\text{A}$	30	150	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.0\text{mA}$	40	150	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=10\text{mA}$	50	200	
f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=20\text{MHz}$	60		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=1.0\text{MHz}$		15	pF
C_{ib}	$V_{BE}=0.5\text{V}, I_C=0, f=1.0\text{MHz}$		85	pF
NF	$V_{CE}=10\text{V}, I_C=300\mu\text{A}, R_S=510\Omega, f=1.0\text{kHz}, BW=200\text{Hz}$		8.0	dB

R1 (2-December 2013)

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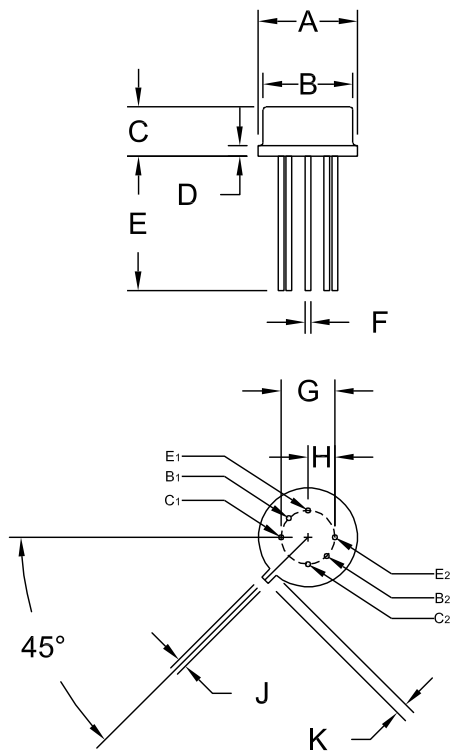


MATCHING CHARACTERISTICS - Continued: ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$	0.9	1.0	
h_{FE1}/h_{FE2} (Note 1)	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$	0.9	1.0	
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=100\mu\text{A}$		5.0	mV
$ V_{BE1}-V_{BE2} $	$V_{CE}=5.0\text{V}$, $I_C=1.0\text{mA}$		5.0	mV

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

TO-78 CASE - MECHANICAL OUTLINE



SYMBOL	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)

MARKING: FULL PART NUMBER

R1

R1 (2-December 2013)