

**2N2060M**  
**SILICON**  
**DUAL NPN TRANSISTOR**



[www.centrasemi.com](http://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**



**TO-78 CASE**

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

	SYMBOL		UNITS
Collector-Base Voltage	$V_{CB0}$	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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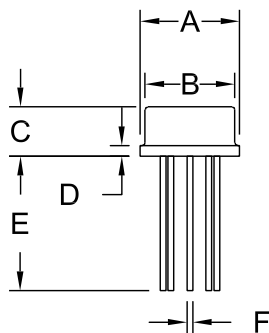


**MATCHING CHARACTERISTICS - Continued:** ( $T_A=25^\circ\text{C}$  unless otherwise noted)

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

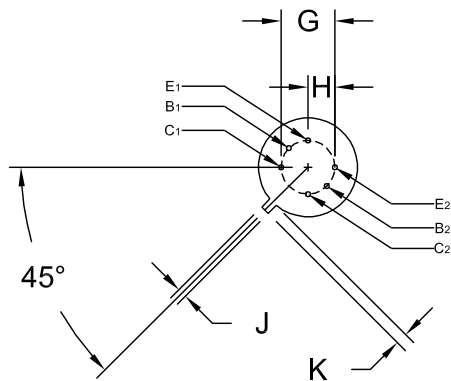
Notes: (1) The lowest reading is taken as  $h_{FE1}$ .

**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)



R1

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