2N2060M

SILICON DUAL NPN TRANSISTOR

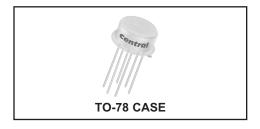


www.centralsemi.com

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°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°C)	P_{D}	1.5	W
Power Dissipation (Both Dice, T _C =25°C)	P_{D}	3.0	W
Operating and Storage Junction Temperature	T _{.I} , T _{sta}	-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} =80V		2.0	nA
I _{EBO}	V _{EB} =5.0V		2.0	nA
BV _{CBO}	I _C =100μA	100		V
BVCER	I_C =10mA, R_{BE} =10 Ω	80		V
BVCEO	I _C =30mA	60		V
BV _{EBO}	I _E =100μA	7.0		V
V _{CE(SAT)}	I _C =50mA, I _B =5.0mA		1.2	V
V _{BE(SAT)}	I _C =50mA, I _B =5.0mA		0.9	V
h _{FE}	V_{CE} =5.0V, I_{C} =10 μ A	25	150	
h _{FE}	V_{CE} =5.0V, I_{C} =100 μ A	30	150	
h _{FE}	V _{CE} =5.0V, I _C =1.0mA	40	150	
h _{FE}	V _{CE} =5.0V, I _C =10mA	50	200	
f_{T}	V_{CE} =10V, I_{C} =50mA, f=20MHz	60		MHz
C _{ob}	V_{CB} =10V, I_E =0, f=1.0MHz		15	pF
C _{ib}	V_{BE} =0.5V, I_{C} =0, f=1.0MHz		85	pF
NF	V_{CE} =10V, I_{C} =300 μ A, R_{S} =510 Ω ,			
	f=1.0kHz, BW=200Hz		8.0	dB

R1 (2-December 2013)

2N2060M

SILICON DUAL NPN TRANSISTOR

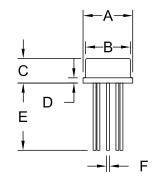


MATCHING CHA	NRACTERISTICS - Continued: $(T_A =$	25°C unless otherwise	noted)
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matronimo en altre i Entre i estimate di l'A est e unicos ette i income i este un				
SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
hFE1/hFE2 (Note 1)	V_{CE} =5.0V, I_{C} =100 μ A	0.9	1.0	
hFE1/hFE2 (Note 1)	V_{CE} =5.0V, I_{C} =1.0mA	0.9	1.0	
V _{BE1} -V _{BE2}	V_{CE} =5.0V, I_{C} =100 μ A		5.0	mV
V _{BE1} -V _{BE2}	V_{CE} =5.0V, I_{C} =1.0mA		5.0	mV

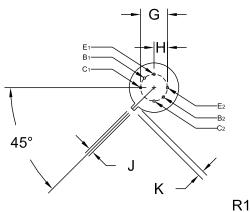
Notes: (1) The lowest reading is taken as $h_{\mbox{\scriptsize FE1}}$.

TO-78 CASE - MECHANICAL OUTLINE



DIMENSIONS				
	INC	HES	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
С	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
Н	0.1	00	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 (2-December 2013)

OUTSTANDING SUPPORT AND SUPERIOR SERVICES



PRODUCT SUPPORT

Central's operations team provides the highest level of support to insure product is delivered on-time.

- Supply management (Customer portals)
- · Inventory bonding
- · Consolidated shipping options

- · Custom bar coding for shipments
- · Custom product packing

DESIGNER SUPPORT/SERVICES

Central's applications engineering team is ready to discuss your design challenges. Just ask.

- Free quick ship samples (2nd day air)
- Online technical data and parametric search
- SPICE models
- · Custom electrical curves
- Environmental regulation compliance
- · Customer specific screening
- · Up-screening capabilities

- · Special wafer diffusions
- · PbSn plating options
- Package details
- · Application notes
- · Application and design sample kits
- · Custom product and package development

CONTACT US

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Product End of Life Notification

PDN ID:	PDN01061
Notification Date:	1/17/17
Last Buy Date:	7/17/17
Last Shipment Date	1/17/18

Summary: All transistors manufactured in the TO-78 package are discontinued and now classified as End of Life (EOL).

Although Central Semiconductor Corp. makes every effort to continue to produce devices that have been proclaimed EOL (End of Life) by various manufacturers, it is an accepted industry practice to discontinue certain devices when customer demand falls below a minimum level of sustainability. Accordingly, the following product(s) have been transitioned to End of Life status as part of Central's Product Management Process. Any replacement product will be noted below. The effective date for placing the last purchase order will be six(6) months from the date of this notice and twelve(12) months from the notice date for final shipments; this may be extended if inventory is available.

Central Part Number	Replacement
CEN876	N/A
CEN894	N/A
CEN895	N/A
CEN896	N/A
CEN911	N/A
CEN947	N/A
CEN955 W/DATA	N/A
MD2219A	N/A
MD2369	N/A
MD2369A	N/A
MD2369B	N/A
MD2905	N/A
MD2905A	N/A
MD5179	N/A
MD7000	N/A
MD7001	N/A
MD7003	N/A
MD7003A	N/A
MD7003B	N/A
MD8002	N/A
MD8003	N/A
MD918	N/A
MD918A	N/A
MD918B	N/A
MD984	N/A
2N2060	N/A
2N2060A	N/A
2N2060M	N/A
2N2223	N/A
2N2223A	N/A
2N2453	N/A
2N2453A	N/A
2N2480	N/A
2N2480A	N/A
2N2639	N/A
2N2640	N/A
2N2641	N/A
2N2642	N/A
*** CONTINUED ***	

DISCLAIMER: This End of Life (EOL) notification is in accordance with JEDEC standard JESD48 - Product Discontinuance. Central Semiconductor Corp. will make every effort to offer life-time buy (LTB) opportunities and/or offer replacement devices to existing customers for discontinued devices, however, one or both may not be possible for all devices. Please contact your local Central Semiconductor sales representative for LTB opportunities/additional information.

CCC785 REV 002



Product End of Life Notification

PDN ID:	PDN01061
Notification Date:	1/17/17
Last Buy Date:	7/17/17
Last Shipment Date	1/17/18

*** CONTINUED FROM PRIOR PAGE ***

a	
Central Part Number	Replacement
2N2643	N/A
2N2644	N/A
2N2652	N/A
2N2652A	N/A
2N2720	N/A
2N2721	N/A
2N2722	N/A
2N2903	N/A
2N2903A	N/A
2N2913	N/A
2N2914	N/A
2N2915	N/A
2N2915A	N/A
2N2916	N/A
2N2916A	N/A
2N2917	N/A
2N2918	N/A
2N2919	N/A
2N2919A	N/A
2N2920	N/A
2N2920A	N/A
2N3726	N/A
2N3727	N/A
2N3806	N/A
2N3807	N/A
2N3808	N/A
2N3809	N/A
2N3810	N/A
2N3810A	N/A
2N3811	N/A
2N3811A	N/A
2N4015	N/A
2N4016	N/A
2N4854	N/A
2N4937	N/A
2N4938	N/A
2N4939	N/A
2N5793	N/A
2N5794	N/A
2N5796	N/A
2N5912	N/A
2N6502	N/A

*** CONTINUED ***

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CCC785 REV 002



Product End of Life Notification

PDN ID:	PDN01061
Notification Date:	1/17/17
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*** CONTINUED FROM PRIOR PAGE ***

Central Part Number	Replacement
Central would be happy to assist yo	ou by providing additional information or technical data to help locate an alternate source if we
have no replacement available. Plea	ase email your requests to engineering@centralsemi.com.

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CCC785 REV 002