

2N5336 2N5338
2N5337 2N5339

**SILICON
NPN TRANSISTORS**



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5336 series devices are silicon epitaxial planar NPN transistors designed for power amplifier and switching power supplies where very low saturation voltage and high speed switching at high current levels are needed.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Continuous Base Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL	2N5336	2N5338	UNITS
	2N5337	2N5339	
V_{CBO}	80	100	V
V_{CEO}	80	100	V
V_{EBO}		6.0	V
I_C		5.0	A
I_B		1.0	A
P_D		6.0	W
T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Θ_{JC}	29		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5336		2N5338		UNITS
		2N5337		2N5339		
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} =Rated V _{CBO}	-	10	-	10	μA
I _{CEV}	V _{CE} =75V, V _{EB} =1.5V	-	10	-	-	μA
I _{CEV}	V _{CE} =90V, V _{EB} =1.5V	-	-	-	10	μA
I _{CEV}	V _{CE} =75V, V _{EB} =1.5V, T _C =150°C	-	1.0	-	-	mA
I _{CEV}	V _{CE} =90V, V _{EB} =1.5V, T _C =150°C	-	-	-	1.0	mA
I _{CEO}	V _{CE} =75V	-	100	-	-	μA
I _{CEO}	V _{CE} =90V	-	-	-	100	μA
I _{EBO}	V _{EB} =6.0V	-	100	-	100	μA
BV _{CEO}	I _C =50mA	80	-	100	-	V
V _{CE} (SAT)	I _C =2.0A, I _B =200mA	-	0.7	-	0.7	V
V _{CE} (SAT)	I _C =5.0A, I _B =500mA	-	1.2	-	1.2	V
V _{BE} (SAT)	I _C =2.0A, I _B =200mA	-	1.2	-	1.2	V
V _{BE} (SAT)	I _C =5.0A, I _B =500mA	-	1.8	-	1.8	V
h _{FE}	V _{CE} =2.0V, I _C =500mA (2N5336, 2N5338)	30	-	30	-	
h _{FE}	V _{CE} =2.0V, I _C =500mA (2N5337, 2N5339)	60	-	60	-	
h _{FE}	V _{CE} =2.0V, I _C =2.0A (2N5336, 2N5338)	30	120	30	120	
h _{FE}	V _{CE} =2.0V, I _C =2.0A (2N5337, 2N5339)	60	240	60	240	
h _{FE}	V _{CE} =2.0V, I _C =5.0A (2N5336, 2N5338)	20	-	20	-	
h _{FE}	V _{CE} =2.0V, I _C =5.0A (2N5337, 2N5339)	40	-	40	-	

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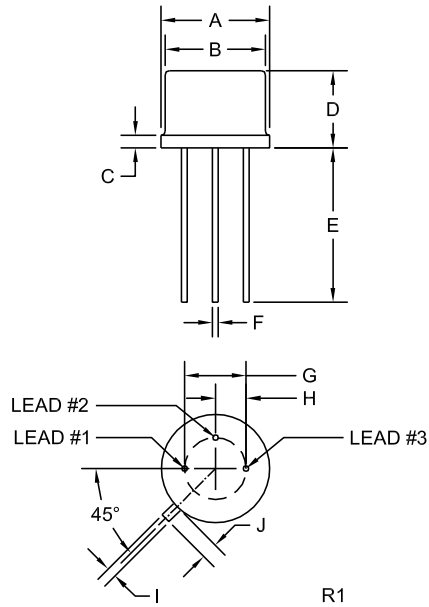
**SILICON
NPN TRANSISTORS**



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

SYMBOL	TEST CONDITIONS	2N5336		2N5338		UNITS
		2N5337		2N5339		
		MIN	MAX	MIN	MAX	
f_T	$V_{CE}=10\text{V}$, $I_C=500\text{mA}$, $f=10\text{MHz}$	30	-	30	-	MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=100\text{kHz}$	-	250	-	250	pF
C_{ib}	$V_{BE}=2.0\text{V}$, $I_C=0$, $f=100\text{kHz}$	-	1.0	-	1.0	nF
t_{on}	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=200\text{mA}$	-	200	-	200	ns
t_s	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=I_{B2}=200\text{mA}$	-	2.0	-	2.0	μs
t_f	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=I_{B2}=200\text{mA}$	-	200	-	200	ns

TO-39 CASE - MECHANICAL OUTLINE



DIMENSIONS				
SYMBOL	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A (DIA)	0.335	0.370	8.51	9.40
B (DIA)	0.315	0.335	8.00	8.51
C	-	0.040	-	1.02
D	0.240	0.260	6.10	6.60
E	0.500	-	12.70	-
F (DIA)	0.016	0.021	0.41	0.53
G (DIA)	0.200		5.08	
H	0.100		2.54	
I	0.028	0.034	0.71	0.86
J	0.029	0.045	0.74	1.14

TO-39 (REV: R1)

LEAD CODE:

- 1) Emitter
- 2) Base
- 3) Collector

MARKING: FULL PART NUMBER

R1 (4-April 2014)

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

REQUESTING PRODUCT PLATING

1. If requesting Tin/Lead plated devices, add the suffix " TIN/LEAD" to the part number when ordering (example: 2N2222A TIN/LEAD).
2. If requesting Lead (Pb) Free plated devices, add the suffix " PBFREE" to the part number when ordering (example: 2N2222A PBFREE).

CONTACT US

Corporate Headquarters & Customer Support Team

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For the latest version of Central Semiconductor's **LIMITATIONS AND DAMAGES DISCLAIMER**, which is part of Central's Standard Terms and Conditions of sale, visit: www.centrasemi.com/terms



<http://www.centrasemi.com>

Product End of Life Notification

PDN ID:	PDN01121
Notification Date:	3/21/19
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Please be advised that Central Semiconductor must immediately discontinue the product(s) listed in the attached PDN notice. We are unable to accept any further orders for these products **unless** we have available inventory on hand.

You may have purchased one or more of the products listed. Please do not hesitate to contact your local Central Semiconductor sales representative with any questions or needs you may have. Central regrets any inconvenience this may cause.

Sincerely,

Central Semiconductor Corp.

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.



<http://www.centrasemi.com>

Product End of Life Notification

PDN ID:	PDN01121
Notification Date:	3/21/19
Last Buy Date:	Stock Only
Last Shipment Date	Stock Only

Summary: The CP219 transistor die process is 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 other 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 ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

Central Part Number	Replacement
CP219-2N5338-WN	N/A, Stock Only
CP219-2N5339-CM	N/A, Stock Only
CP219-2N5339-CT	N/A, Stock Only
CP219-2N5339-WN	N/A, Stock Only
2N5339	N/A, Stock Only
2N5430	N/A, Stock Only

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. Please email your requests to engineering@centrasemi.com.

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.

Product End of Life Notification

PDN ID:	PDN01192
Notification Date:	10/19/21
Last Buy Date:	4/19/22
Last Shipment Date	10/19/22

Summary: The following through-hole transistors are discontinued and now classified as of 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 other 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 ongoing Product Management Process. Any replacement products are noted below. The effective date for placing last purchase orders will be six (6) months from the date of this notice and twelve (12) months from the notice date for final shipments, and minimum order quantities may apply. The last purchase and shipment dates may be extended if inventory is available.

*** All Plating types (PBFREE,TIN/LEAD) for each item listed are included in this notice.**

Central Part Number	Suggested Replacement
BU911	N/A
CEN597	N/A
MJE3055T	N/A
MJ4034	N/A
2N2483	N/A
2N2540	N/A
2N3735	N/A
2N4407	N/A
2N5154	N/A
2N5337	N/A
2N6101	N/A
2N6488	N/A

Central would be happy to assist you by providing additional information or technical data to help locate an alternate source if we have no replacement available. If you would like assistance, please visit <https://my.centalsemi.com/submit-inquiry?type=ER> to submit an online inquiry.

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.