

2N5781 PNP
2N5784 NPN

**COMPLEMENTARY SILICON
POWER TRANSISTORS**



TO-39 CASE



www.centrasemi.com

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5781 and 2N5784 types are Complementary Silicon Power Transistors designed for general purpose switching and amplifier applications.

MARKING: FULL PART NUMBER

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

Collector-Base Voltage
Collector-Emitter Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Continuous Base Current
Power Dissipation
Power Dissipation ($T_A=25^\circ\text{C}$)
Operating and Storage Junction Temperature
Thermal Resistance
Thermal Resistance

SYMBOL		UNITS
V_{CBO}	80	V
V_{CER}	80	V
V_{CEO}	65	V
V_{EBO}	5.0	V
I_C	3.5	A
I_B	1.0	A
P_D	10	W
P_D	1.0	W
T_J, T_{stg}	-65 to +200	$^\circ\text{C}$
θ_{JC}	17.5	$^\circ\text{C/W}$
θ_{JA}	175	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CEV}	$V_{CE}=75\text{V}, V_{BE}=1.5\text{V}$		10	μA
I_{CEV}	$V_{CE}=75\text{V}, V_{BE}=1.5\text{V}, T_C=150^\circ\text{C}$		1.0	mA
I_{CER}	$V_{CE}=65\text{V}, R_{BE}=100\Omega$		10	μA
I_{CER}	$V_{CE}=65\text{V}, R_{BE}=100\Omega, T_C=150^\circ\text{C}$		1.0	mA
I_{CEO}	$V_{CE}=50\text{V}$		100	μA
I_{EBO}	$V_{EB}=5.0\text{V}$		10	μA
BV_{CER}	$I_C=10\text{mA}, R_{BE}=100\Omega$	80		V
BV_{CEO}	$I_C=10\text{mA}$	65		V
$V_{CE(SAT)}$	$I_C=1.0\text{A}, I_B=100\text{mA}$		0.5	V
$V_{BE(ON)}$	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$		1.5	V
h_{FE}	$V_{CE}=2.0\text{V}, I_C=1.0\text{A}$	20	150	
h_{FE}	$V_{CE}=2.0\text{V}, I_C=3.2\text{A}$	4.0		
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=4.0\text{MHz}$ (2N5781)	8.0	60	MHz
f_T	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=200\text{kHz}$ (2N5784)	1.0	4.0	MHz
h_{fe}	$V_{CE}=2.0\text{V}, I_C=100\text{mA}, f=1.0\text{kHz}$	25		
t_{on}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5781)		0.5	μs
t_{on}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5784)		5.0	μs
t_{off}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5781)		2.5	μs
t_{off}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$ (2N5784)		15	μs

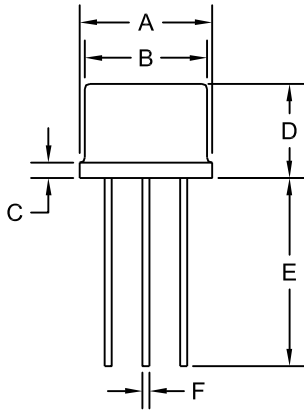
R1 (25-January 2011)

2N5781 PNP
2N5784 NPN

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POWER TRANSISTORS

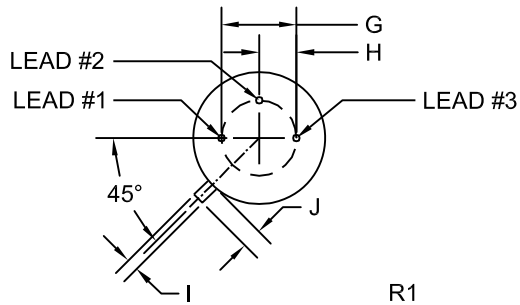


TO-39 CASE - MECHANICAL OUTLINE



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 (25-January 2011)

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

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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

Product End of Life Notification

PDN ID:	PDN01239
Notification Date:	7/29/22
Last Buy Date:	1/29/23
Last Shipment Date	7/29/23

Summary: The following NPN high current transistors in the TO-39 package are discontinued 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 Portfolio Management. 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
BFX34	N/A
BSX62-10	N/A
BSX63-10	N/A
2N3420	N/A
2N3421	N/A
2N3507	N/A
2N4237	N/A
2N4238	N/A
2N4239	N/A
2N4895	N/A
2N5784	N/A
2N5785	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.centralsemi.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.