

2N5193  
2N5194  
2N5195

**PNP SILICON  
POWER TRANSISTORS**



**TO-126 CASE**

**Central**<sup>TM</sup>  
**Semiconductor Corp.**

**DESCRIPTION:**

The CENTRAL SEMICONDUCTOR 2N5193 Series types are Silicon PNP Power Transistors, manufactured by the epitaxial base process, designed for medium power amplifier and switching applications. These devices are complementary to the NPN 2N5190 Series types.

**MARKING: FULL PART NUMBER**

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

Collector-Base Voltage	$V_{CBO}$	40	60	80	V
Collector-Emitter Voltage	$V_{CEO}$	40	60	80	V
Emitter-Base Voltage	$V_{EBO}$		5.0		V
Continuous Collector Current	$I_C$		4.0		A
Base Current	$I_B$		1.0		A
Power Dissipation ( $T_C=25^\circ\text{C}$ )	$P_D$		40		W
Operating and Storage Junction Temperature	$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
Thermal Resistance (Junction to Case)	$\theta_{JC}$		3.12		$^\circ\text{C/W}$

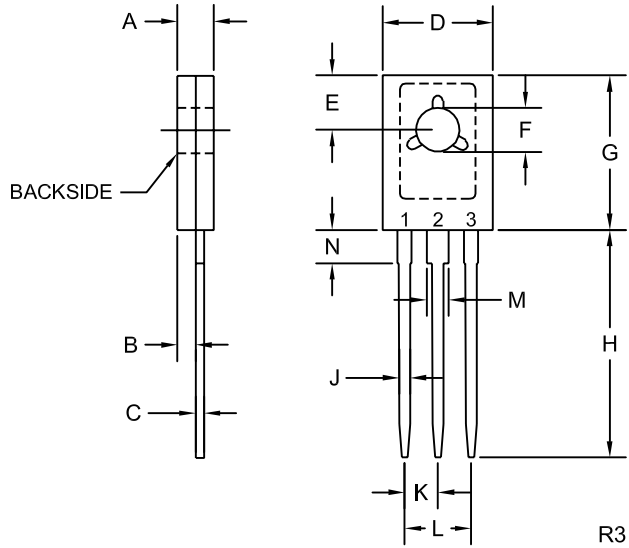
SYMBOL	<u>2N5193</u>	<u>2N5194</u>	<u>2N5195</u>	UNITS
$V_{CBO}$	40	60	80	V
$V_{CEO}$	40	60	80	V
$V_{EBO}$		5.0		V
$I_C$		4.0		A
$I_B$		1.0		A
$P_D$		40		W
$T_J, T_{stg}$		-65 to +150		$^\circ\text{C}$
$\theta_{JC}$		3.12		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
$I_{CBO}$	$V_{CB}=\text{Rated } V_{CBO}$		100	$\mu\text{A}$
$I_{CEX}$	$V_{CE}=\text{Rated } V_{CEO}, V_{EB}=1.5\text{V}$		100	$\mu\text{A}$
$I_{CEO}$	$V_{CE}=\text{Rated } V_{CEO}$		1.0	mA
$I_{EBO}$	$V_{EB}=5.0\text{V}$		1.0	mA
$BV_{CEO}$	$I_C=100\text{mA}$ (2N5193)	40		V
$BV_{CEO}$	$I_C=100\text{mA}$ (2N5194)	60		V
$BV_{CEO}$	$I_C=100\text{mA}$ (2N5195)	80		V
$V_{CE(\text{SAT})}$	$I_C=1.5\text{A}, I_B=150\text{mA}$		0.6	V
$V_{CE(\text{SAT})}$	$I_C=4.0\text{A}, I_B=1.0\text{A}$		1.4	V
$V_{BE(\text{ON})}$	$V_{CE}=2.0\text{V}, I_C=1.5\text{A}$		1.2	V
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.5\text{A}$ (2N5193, 2N5194)	25	100	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=1.5\text{A}$ (2N5195)	20	80	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=4.0\text{A}$ (2N5193, 2N5194)	10		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=4.0\text{A}$ (2N5195)	7.0		
$f_T$	$V_{CE}=10\text{V}, I_C=1.0\text{A}, f=1.0\text{MHz}$	2.0		MHz

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**TO-126 CASE - MECHANICAL OUTLINE**



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.094	0.110	2.40	2.80
B	0.050		1.27	
C	0.015	0.030	0.38	0.75
D	0.291	0.335	7.40	8.50
E	0.148		3.75	
F	0.118	0.134	3.00	3.40
G	0.413	0.472	10.50	12.00
H	0.618		15.70	
J	0.024	0.035	0.62	0.90
K	0.089		2.25	
L	0.177		4.50	
M	0.045	0.055	1.14	1.40
N	0.083		2.10	

TO-126 (REV:R3)

**LEAD CODE:**

- 1) EMITTER
- 2) COLLECTOR
- 3) BASE

**MARKING:**

**FULL PART NUMBER**

## OUTSTANDING SUPPORT AND SUPERIOR SERVICES



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### 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

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### DESIGNER SUPPORT/SERVICES

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

- Free quick ship samples (2<sup>nd</sup> 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

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### CONTACT US

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<http://www.centrasemi.com>

# Product End of Life Notification

<b>PDN ID:</b>	PDN01039
<b>Notification Date:</b>	8/11/16
<b>Last Buy Date:</b>	2/11/17
<b>Last Shipment Date</b>	8/11/17

Summary: The 2N5190 series of NPN and PNP Power transistors, with the exception of 2N5192 and 2N5195, is discontinued and is 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.

<u>Central Part Number</u>	<u>Replacement</u>
2N5190	2N5192 SL    H
2N5191	2N5192 SL    H
2N5192R	N/A
2N5193	2N5195 SL    H
2N5194	2N5195 SL    H

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](mailto: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.