Central™
Semiconductor Corp.
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Manufacturers of World Class Discrete Semiconductors
www.centralsemi.com

2N3506
2N3507

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N3506, 2N3507 types are Silicon NPN Epitaxial Planar Transistors designed for general purpose switching applications.

MAXIMUM RATINGS (T_A=25°C unless otherwise noted)

	SYMBOL	2N3506	2N3507	UNITS
Collector-Base Voltage	V_{CBO}	60	80	V
Collector-Emitter Voltage	V_{CEO}	40	50	V
Emitter-Base Voltage	V_{EBO}	5.0		V
Collector Current	I_C	3.0		A
Power Dissipation	P_D	1.0		W
Power Dissipation (T_C=25°C)	P_D	5.0		W
Operating and Storage Junction Temperature	T_J,T_{stg}	-65 to +200		°C
Thermal Resistance	Θ_{JA}	175		°C/W
Thermal Resistance	Θ_{JC}	35		°C/W

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise noted)

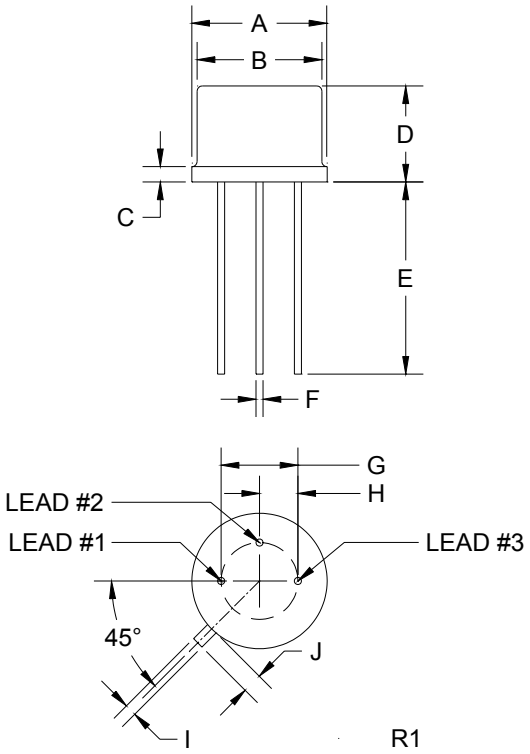
		2N3506		2N3507		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=40V, $V_{EB(off)}$=4.0V		1.0			μA
I_{CEV}	V_{CE}=40V, $V_{EB(off)}$=4.0V, T_A=100°C		150			μA
I_{CEV}	V_{CE}=60V, $V_{EB(off)}$=4.0V				1.0	μA
I_{CEV}	V_{CE}=60V, $V_{EB(off)}$=4.0V, T_A=100°C				150	μA
BV_{CBO}	I_C=100μA	60		80		V
BV_{CEO}	I_C=10mA	40		50		V
BV_{EBO}	I_E=10μA	5.0		5.0		V
$V_{CE(SAT)}$	I_C=500mA, I_B=50mA		0.5		0.5	V
$V_{CE(SAT)}$	I_C=1.5A, I_B=150mA		1.0		1.0	V
$V_{CE(SAT)}$	I_C=2.5A, I_B=250mA		1.5		1.5	V
$V_{BE(SAT)}$	I_C=500mA, I_B=50mA		1.0		1.0	V
$V_{BE(SAT)}$	I_C=1.5A, I_B=150mA	0.9	1.4	0.9	1.4	V
$V_{BE(SAT)}$	I_C=2.5A, I_B=250mA		2.0		2.0	V

(Continued)

ELECTRICAL CHARACTERISTICS CONTINUED (T_A=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N3506 MIN	2N3506 MAX	2N3507 MIN	2N3507 MAX	UNITS
h_{FE}	V_{CE}=1.0V, I_C=500mA	50		35		
h_{FE}	V_{CE}=2.0V, I_C=1.5A	40	200	30	150	
h_{FE}	V_{CE}=3.0V, I_C=2.5A	30		25		
h_{FE}	V_{CE}=5.0V, I_C=3.0A	25		20		
f_T	V_{CE}=5.0V, I_C=100mA, f=20MHz	60		60		MHz
C_{ob}	V_{CB}=10V, I_E=0, f=100kHz		40		40	pF
C_{ib}	V_{BE}=3.0V, I_C=0, f=100kHz		300		300	pF
t_d	V_{CC}=30V, I_C=1.5A, I_{B1}=150mA		15		15	ns
t_r	V_{CC}=30V, I_C=1.5A, I_{B1}=150mA		30		30	ns
t_s	V_{CC}=30V, I_C=1.5A, I_{B1}=I_{B2}=150mA		55		55	ns
t_f	V_{CC}=30V, I_C=1.5A, I_{B1}=I_{B2}=150mA		35		35	ns

TO-39 PACKAGE - MECHANICAL OUTLINE



DIMENSIONS				
	INCHES		MILLIMETERS	
SYMBOL	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

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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.centralsemi.com/terms

http://www.centralsemi.com

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.