

CentralTM Semiconductor Corp.

145 Adams Avenue, Hauppauge, NY 11788 USA
Tel: (631) 435-1110 • Fax: (631) 435-1824

Manufacturers of World Class Discrete Semiconductors

2N3500
2N3501

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3500 and 2N3501 types are Silicon NPN Epitaxial Planar Transistors designed for high voltage inductive load switching applications.

MAXIMUM RATINGS (T_A=25°C)

	<u>SYMBOL</u>		<u>UNITS</u>
Collector-Base Voltage	V _{CBO}	150	V
Collector-Emitter Voltage	V _{CEO}	150	V
Emitter-Base Voltage	V _{EBO}	6.0	V
Collector Current	I _C	300	mA
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)

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
I _{CBO}	V _{CB} =75V		50	nA
I _{CBO}	V _{CB} =75V, T _A =150°C		50	μA
I _{EBO}	V _{EB} =4.0V		25	nA
BV _{CBO}	I _C =10μA	150		V
BV _{CEO}	I _C =10mA	150		V
BV _{EBO}	I _E =10μA	6.0		V
V _{CE} (SAT)	I _C =10mA, I _B =1.0mA		0.2	V
V _{CE} (SAT)	I _C =50mA, I _B =5.0mA		0.25	V
V _{CE} (SAT)	I _C =150mA, I _B =15mA		0.4	V
V _{BE} (SAT)	I _C =10mA, I _B =1.0mA		0.8	V
V _{BE} (SAT)	I _C =50mA, I _B =5.0mA		0.9	V
V _{BE} (SAT)	I _C =150mA, I _B =15mA		1.2	V

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

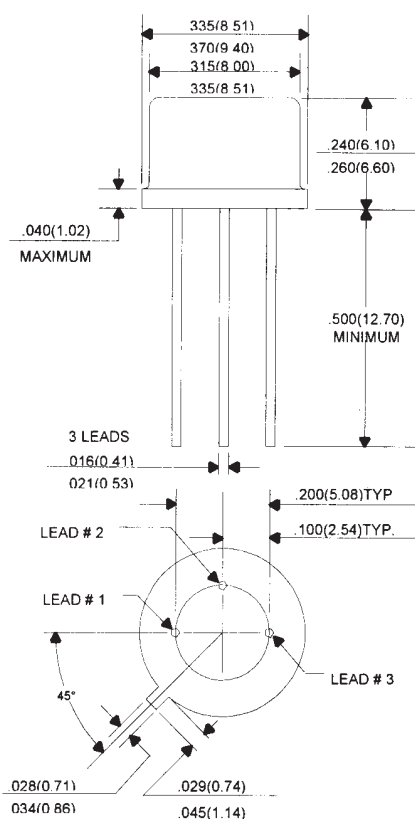
2N3500

2N3501

<u>SYMBOL</u>	<u>TEST CONDITIONS</u>	<u>MIN</u>	<u>MAX</u>	<u>MIN</u>	<u>MAX</u>	<u>UNITS</u>
h_{FE}	$V_{CE}=10V, I_C=0.1mA$	20		35		
h_{FE}	$V_{CE}=10V, I_C=1.0mA$	25		50		
h_{FE}	$V_{CE}=10V, I_C=10mA$	35		75		
h_{FE}	$V_{CE}=10V, I_C=150mA$	40	120	100	300	
h_{FE}	$V_{CE}=10V, I_C=300mA$	15		20		
f_T	$V_{CE}=20V, I_C=20mA, f=100MHz$	150		150		MHz
C_{ob}	$V_{CB}=10V, I_E=0, f=100kHz$		8.0		8.0	pF
C_{ib}	$V_{EB}=0.5V, I_C=0, f=100kHz$		80		80	pF
t_d	$V_{CC}=100V, I_C=150mA, I_{B1}=15mA$	20 TYP		20 TYP		ns
t_r	$V_{CC}=100V, I_C=150mA, I_{B1}=15mA$	35 TYP		35 TYP		ns
t_s	$V_{CC}=100V, I_C=150mA, I_{B1}=I_{B2}=15mA$	800 TYP		800 TYP		ns
t_f	$V_{CC}=100V, I_C=150mA, I_{B1}=I_{B2}=15mA$	80 TYP		80 TYP		ns

JEDEC TO-39 CASE - MECHANICAL OUTLINE

All Dimensions in Inches (mm).



Lead Code:

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

Central
Semiconductor Corp.

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

Corporate Headquarters & Customer Support Team

Central Semiconductor Corp.
145 Adams Avenue
Hauppauge, NY 11788 USA
Main Tel: (631) 435-1110
Main Fax: (631) 435-1824
Support Team Fax: (631) 435-3388
www.centalsemi.com

Worldwide Field Representatives:
www.centalsemi.com/wwreps

Worldwide Distributors:
www.centalsemi.com/wwdistributors

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.centalsemi.com/terms

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Central Semiconductor:](#)

[2N3501](#)