



Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from,Europe,America and south Asia,supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of “Quality Parts,Customers Priority,Honest Operation,and Considerate Service”,our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip,ALPS,ROHM,Xilinx,Pulse,ON,Everlight and Freescale. Main products comprise IC,Modules,Potentiometer,IC Socket,Relay,Connector.Our parts cover such applications as commercial,industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



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CentralTM Semiconductor Corp.

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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 ($T_A=25^{\circ}\text{C}$)

	SYMBOL		UNITS
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 ($T_C=25^{\circ}\text{C}$)	P_D	5.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 to +200	$^{\circ}\text{C}$
Thermal Resistance	Θ_{JA}	175	$^{\circ}\text{C/W}$
Thermal Resistance	Θ_{JC}	35	$^{\circ}\text{C/W}$

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

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
I_{CBO}	$V_{CB}=75\text{V}$		50	nA
I_{CBO}	$V_{CB}=75\text{V}, T_A=150^{\circ}\text{C}$		50	μA
I_{EBO}	$V_{EB}=4.0\text{V}$		25	nA
BV_{CBO}	$I_C=10\mu\text{A}$	150		V
BV_{CEO}	$I_C=10\text{mA}$	150		V
BV_{EBO}	$I_E=10\mu\text{A}$	6.0		V
$V_{CE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.2	V
$V_{CE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.25	V
$V_{CE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.4	V
$V_{BE(SAT)}$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.8	V
$V_{BE(SAT)}$	$I_C=50\text{mA}, I_B=5.0\text{mA}$		0.9	V
$V_{BE(SAT)}$	$I_C=150\text{mA}, I_B=15\text{mA}$		1.2	V

(Continued on Reverse Side)

ELECTRICAL CHARACTERISTICS (Continued)

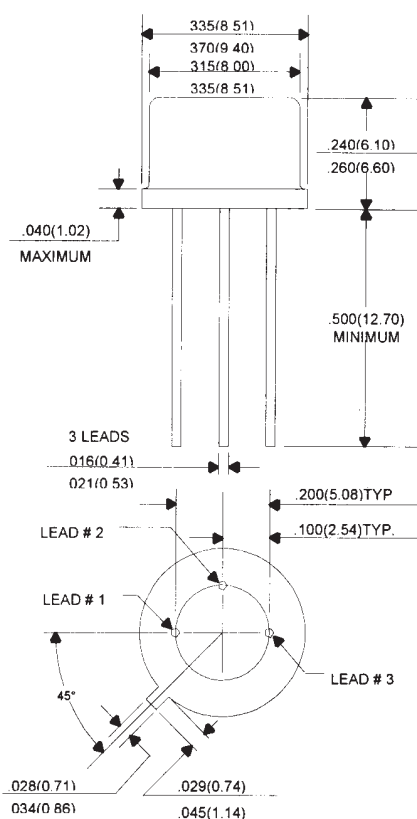
2N3500

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

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).

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