Central™
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°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°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)

SYMBOL	TEST CONDITIONS	MIN	MAX	UNITS
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

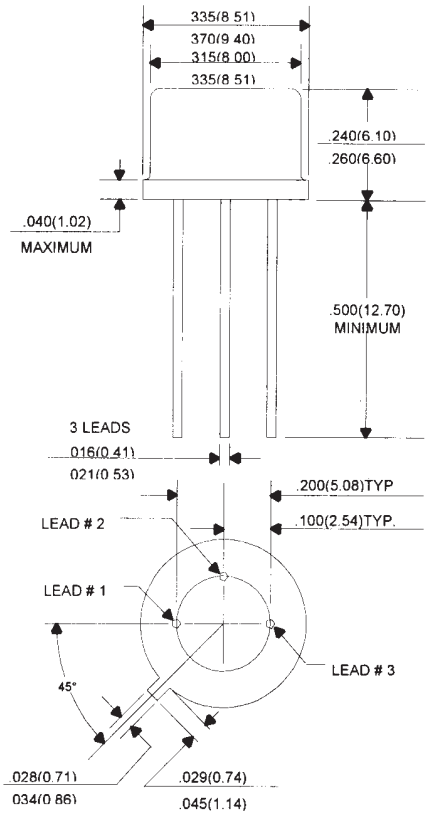
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ELECTRICAL CHARACTERISTICS (Continued)

		2N3500		2N3501		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
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

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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

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