Central™
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Manufacturers of World Class Discrete Semiconductors
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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)

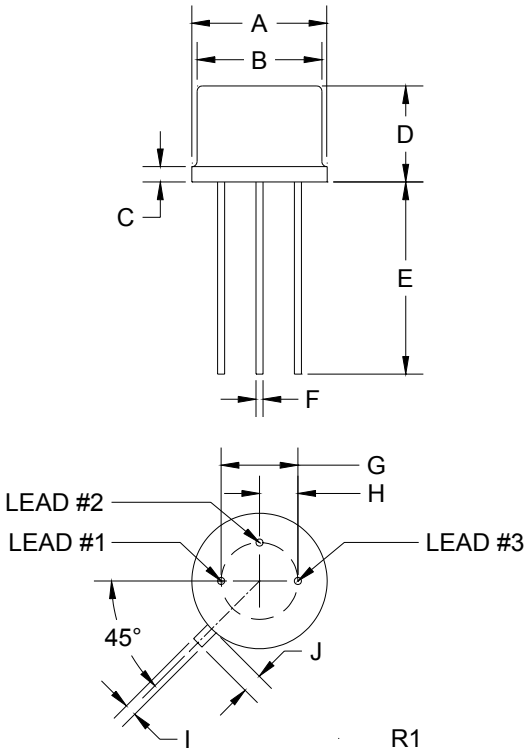
		2N3506		2N3507		
SYMBOL	TEST CONDITIONS	MIN	MAX	MIN	MAX	UNITS
I_{CEV}	V_{CE}=40V, $V_{EB(off)}$=4.0V		1.0			μA
I_{CEV}	V_{CE}=40V, $V_{EB(off)}$=4.0V, T_A=100°C		150			μA
I_{CEV}	V_{CE}=60V, $V_{EB(off)}$=4.0V				1.0	μA
I_{CEV}	V_{CE}=60V, $V_{EB(off)}$=4.0V, T_A=100°C				150	μA
BV_{CBO}	I_C=100μA	60		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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