

2N5336 2N5338
2N5337 2N5339

**SILICON
NPN TRANSISTORS**



TO-39 CASE



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DESCRIPTION:

The CENTRAL SEMICONDUCTOR 2N5336 series devices are silicon epitaxial planar NPN transistors designed for power amplifier and switching power supplies where very low saturation voltage and high speed switching at high current levels are needed.

MARKING: FULL PART NUMBER

MAXIMUM RATINGS: ($T_C=25^\circ\text{C}$)

Collector-Base Voltage
Collector-Emitter Voltage
Emitter-Base Voltage
Continuous Collector Current
Continuous Base Current
Power Dissipation
Operating and Storage Junction Temperature
Thermal Resistance

SYMBOL	2N5336	2N5338	UNITS
	<u>2N5337</u>	<u>2N5339</u>	
V_{CBO}	80	100	V
V_{CEO}	80	100	V
V_{EBO}		6.0	V
I_C		5.0	A
I_B		1.0	A
P_D		6.0	W
T_J, T_{stg}	-65 to +200		$^\circ\text{C}$
Θ_{JC}		29	$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5336		2N5338		UNITS
		2N5337		2N5339		
		MIN	MAX	MIN	MAX	
I _{CBO}	V _{CB} =Rated V _{CBO}	-	10	-	10	μA
I _{CEV}	V _{CE} =75V, V _{EB} =1.5V	-	10	-	-	μA
I _{CEV}	V _{CE} =90V, V _{EB} =1.5V	-	-	-	10	μA
I _{CEV}	V _{CE} =75V, V _{EB} =1.5V, T _C =150°C	-	1.0	-	-	mA
I _{CEV}	V _{CE} =90V, V _{EB} =1.5V, T _C =150°C	-	-	-	1.0	mA
I _{CEO}	V _{CE} =75V	-	100	-	-	μA
I _{CEO}	V _{CE} =90V	-	-	-	100	μA
I _{EBO}	V _{EB} =6.0V	-	100	-	100	μA
BV _{CEO}	I _C =50mA	80	-	100	-	V
V _{CE} (SAT)	I _C =2.0A, I _B =200mA	-	0.7	-	0.7	V
V _{CE} (SAT)	I _C =5.0A, I _B =500mA	-	1.2	-	1.2	V
V _{BE} (SAT)	I _C =2.0A, I _B =200mA	-	1.2	-	1.2	V
V _{BE} (SAT)	I _C =5.0A, I _B =500mA	-	1.8	-	1.8	V
h _{FE}	V _{CE} =2.0V, I _C =500mA (2N5336, 2N5338)	30	-	30	-	
h _{FE}	V _{CE} =2.0V, I _C =500mA (2N5337, 2N5339)	60	-	60	-	
h _{FE}	V _{CE} =2.0V, I _C =2.0A (2N5336, 2N5338)	30	120	30	120	
h _{FE}	V _{CE} =2.0V, I _C =2.0A (2N5337, 2N5339)	60	240	60	240	
h _{FE}	V _{CE} =2.0V, I _C =5.0A (2N5336, 2N5338)	20	-	20	-	
h _{FE}	V _{CE} =2.0V, I _C =5.0A (2N5337, 2N5339)	40	-	40	-	

R1 (4-April 2014)

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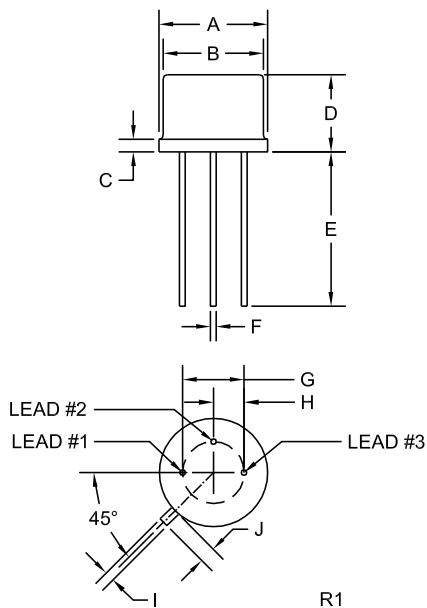
**SILICON
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ELECTRICAL CHARACTERISTICS - Continued: ($T_C=25^{\circ}\text{C}$ unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N5336		2N5338		UNITS
		2N5337		2N5339		
f_T	$V_{CE}=10\text{V}$, $I_C=500\text{mA}$, $f=10\text{MHz}$	30	-	30	-	MHz
C_{ob}	$V_{CB}=10\text{V}$, $I_E=0$, $f=100\text{kHz}$	-	250	-	250	pF
C_{ib}	$V_{BE}=2.0\text{V}$, $I_C=0$, $f=100\text{kHz}$	-	1.0	-	1.0	nF
t_{on}	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=200\text{mA}$	-	200	-	200	ns
t_s	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=I_{B2}=200\text{mA}$	-	2.0	-	2.0	μs
t_f	$V_{CC}=40\text{V}$, $I_C=2.0\text{A}$, $I_{B1}=I_{B2}=200\text{mA}$	-	200	-	200	ns

TO-39 CASE - MECHANICAL OUTLINE



SYMBOL	DIMENSIONS			
	INCHES		MILLIMETERS	
	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

MARKING: FULL PART NUMBER

R1 (4-April 2014)



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