

# New Jersey Semi-Conductor Products, Inc.

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2N5336  
2N5337  
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2N5339

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## NPN SILICON TRANSISTOR

### DESCRIPTION

### JEDEC TO-39 CASE

2N5336 series types are silicon NPN epitaxial planar transistors in a hermetically sealed metal package designed for power amplifier and switching power supplies where very low saturation voltage and high speed switching at high current levels are needed.

### MAXIMUM RATINGS (T<sub>C</sub>=25°C)

	SYMBOL	2N5336 2N5337	2N5338 2N5339	UNIT
Collector-Base Voltage	V <sub>CB0</sub>	80	100	V
Collector-Emitter Voltage	V <sub>CE0</sub>	80	100	V
Emitter-Base Voltage	V <sub>EB0</sub>	6.0	6.0	V
Collector Current (Continuous)	I <sub>C</sub>	5.0	5.0	A
Base Current	I <sub>B</sub>	1.0	1.0	A
Power Dissipation	P <sub>D</sub>	6.0	6.0	W
Operating and Storage Junction Temperature	T <sub>J</sub> , T <sub>STG</sub>	-65 TO +200		°C
Thermal Resistance	θ <sub>JC</sub>	29		°C/W

### ELECTRICAL CHARACTERISTICS (T<sub>C</sub>=25°C unless otherwise noted)

SYMBOL	TEST CONDITIONS	2N5336 2N5337		2N5338 2N5339		UNIT
		MIN	MAX	MIN	MAX	
I <sub>CB0</sub>	V <sub>CB</sub> =Rated V <sub>CB0</sub>		10		10	μA
I <sub>CEV</sub>	V <sub>CE</sub> =75V, V <sub>EB</sub> (OFF)=1.5V		10		-	μA
I <sub>CEV</sub>	V <sub>CE</sub> =90V, V <sub>EB</sub> (OFF)=1.5V		-		10	μA
I <sub>CEV</sub>	V <sub>CE</sub> =75V, V <sub>EB</sub> (OFF)=1.5V, T <sub>C</sub> =150°C		1.0		-	mA
I <sub>CEV</sub>	V <sub>CE</sub> =90V, V <sub>EB</sub> (OFF)=1.5V, T <sub>C</sub> =150°C		-		1.0	mA
I <sub>CE0</sub>	V <sub>CE</sub> =75V		100		-	μA
I <sub>CE0</sub>	V <sub>CE</sub> =90V		-		100	μA
I <sub>EB0</sub>	V <sub>BE</sub> =6.0V		100		100	μA
BV <sub>CE0</sub>	I <sub>C</sub> =50mA	80		100		V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =2.0A, I <sub>B</sub> =0.2A		0.7		0.7	V
V <sub>CE</sub> (SAT)	I <sub>C</sub> =5.0A, I <sub>B</sub> =0.5A		1.2		1.2	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =2.0A, I <sub>B</sub> =0.2A		1.2		1.2	V
V <sub>BE</sub> (SAT)	I <sub>C</sub> =5.0A, I <sub>B</sub> =0.5A		1.8		1.8	V
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =500mA (2N5336, 2N5338)	30		30		
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =500mA (2N5337, 2N5339)	60		60		
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =2.0A (2N5336, 2N5338)	30	120	30	120	
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =2.0A (2N5337, 2N5339)	60	240	60	240	
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =5.0A (2N5336, 2N5338)	20		20		
h <sub>FE</sub>	V <sub>CE</sub> =2.0V, I <sub>C</sub> =5.0A (2N5337, 2N5339)	40		40		
f <sub>T</sub>	V <sub>CE</sub> =10V, I <sub>C</sub> =0.5A, f=10MHz	30		30		MHz
C <sub>ob</sub>	V <sub>CB</sub> =10V, I <sub>E</sub> =0, f=0.1MHz		250		250	pF
C <sub>ib</sub>	V <sub>BE</sub> =2.0V, I <sub>C</sub> =0, f=0.1MHz		1000		1000	pF
t <sub>on</sub>	V <sub>CC</sub> =40V, I <sub>C</sub> =2.0A, I <sub>B1</sub> =0.2A		200		200	ns
t <sub>s</sub>	V <sub>CC</sub> =40V, I <sub>C</sub> =2.0A, I <sub>B1</sub> =I <sub>B2</sub> =0.2A		2.0		2.0	μs
t <sub>f</sub>	V <sub>CC</sub> =40V, I <sub>C</sub> =2.0A, I <sub>B1</sub> =I <sub>B2</sub> =0.2A		200		200	ns

