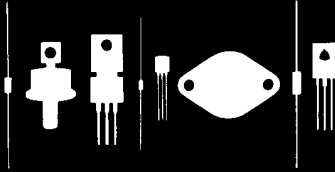


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145 Adams Avenue  
Hauppauge, New York 11788



2N5336  
2N5337  
2N5338  
2N5339

NPN SILICON TRANSISTOR

JEDEC TO-39 CASE

145 Adams Avenue, Hauppauge, NY 11788 USA  
Tel: (631) 435-1110 • Fax: (631) 435-1824

DESCRIPTION

The CENTRAL SEMICONDUCTOR 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 ( $T_C=25^\circ\text{C}$ )

	SYMBOL	2N5336 2N5337	2N5338 2N5339	UNIT
Collector-Base Voltage	$V_{CB0}$	80	100	V
Collector-Emitter Voltage	$V_{CE0}$	80	100	V
Emitter-Base Voltage	$V_{EB0}$	6.0	6.0	V
Collector Current (Continuous)	$I_C$	5.0	5.0	A
Base Current	$I_B$	1.0	1.0	A
Power Dissipation	$P_D$	6.0	6.0	W
Operating and Storage Junction Temperature	$T_J, T_{STG}$	-65 TO +200		$^\circ\text{C}$
Thermal Resistance	$\theta_{JC}$	29		$^\circ\text{C/W}$

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

SYMBOL	TEST CONDITIONS	2N5336 2N5337		2N5338 2N5339		UNIT
		MIN	MAX	MIN	MAX	
$I_{CB0}$	$V_{CB}=\text{Rated } V_{CB0}$		10		10	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=75\text{V}, V_{EB}(\text{OFF})=1.5\text{V}$		10		-	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=90\text{V}, V_{EB}(\text{OFF})=1.5\text{V}$		-		10	$\mu\text{A}$
$I_{CEV}$	$V_{CE}=75\text{V}, V_{EB}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		1.0		-	mA
$I_{CEV}$	$V_{CE}=90\text{V}, V_{EB}(\text{OFF})=1.5\text{V}, T_C=150^\circ\text{C}$		-		1.0	mA
$I_{CE0}$	$V_{CE}=75\text{V}$		100		-	$\mu\text{A}$
$I_{CE0}$	$V_{CE}=90\text{V}$		-		100	$\mu\text{A}$
$I_{EB0}$	$V_{BE}=6.0\text{V}$		100		100	$\mu\text{A}$
$BV_{CE0}$	$I_C=50\text{mA}$	80		100		V
$V_{CE}(\text{SAT})$	$I_C=2.0\text{A}, I_B=0.2\text{A}$		0.7		0.7	V
$V_{CE}(\text{SAT})$	$I_C=5.0\text{A}, I_B=0.5\text{A}$		1.2		1.2	V
$V_{BE}(\text{SAT})$	$I_C=2.0\text{A}, I_B=0.2\text{A}$		1.2		1.2	V
$V_{BE}(\text{SAT})$	$I_C=5.0\text{A}, I_B=0.5\text{A}$		1.8		1.8	V
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$ (2N5336, 2N5338)	30		30		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=500\text{mA}$ (2N5337, 2N5339)	60		60		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=2.0\text{A}$ (2N5336, 2N5338)	30	120	30	120	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=2.0\text{A}$ (2N5337, 2N5339)	60	240	60	240	
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=5.0\text{A}$ (2N5336, 2N5338)	20		20		
$h_{FE}$	$V_{CE}=2.0\text{V}, I_C=5.0\text{A}$ (2N5337, 2N5339)	40		40		
$f_T$	$V_{CE}=10\text{V}, I_C=0.5\text{A}, f=10\text{MHz}$	30		30		MHz
$C_{ob}$	$V_{CB}=10\text{V}, I_E=0, f=0.1\text{MHz}$		250		250	pF
$C_{ib}$	$V_{BE}=2.0\text{V}, I_C=0, f=0.1\text{MHz}$		1000		1000	pF
$t_{on}$	$V_{CC}=40\text{V}, I_C=2.0\text{A}, I_{B1}=0.2\text{A}$		200		200	ns
$t_s$	$V_{CC}=40\text{V}, I_C=2.0\text{A}, I_{B1}=I_{B2}=0.2\text{A}$		2.0		2.0	$\mu\text{s}$
$t_f$	$V_{CC}=40\text{V}, I_C=2.0\text{A}, I_{B1}=I_{B2}=0.2\text{A}$		200		200	ns