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Manufacturers of World Class Discrete Semiconductors

2N3734
2N3735

NPN SILICON TRANSISTORS

JEDEC TO-39 CASE

DESCRIPTION

The CENTRAL SEMICONDUCTOR 2N3734, 2N3735 types are Silicon NPN Transistors in a hermetically sealed case designed for core driver and high speed switching applications.

MAXIMUM RATINGS ($T_A=25^\circ\text{C}$ unless otherwise noted)

	SYMBOL	2N3734	2N3735	UNIT
Collector-Base Voltage	V_{CB0}	50	75	V
Collector-Emitter Voltage	V_{CE0}	30	50	V
Emitter-Base Voltage	V_{EB0}	5.0	5.0	V
Collector Current	I_C	1.5	1.5	A
Power Dissipation	P_D	1.0	1.0	W
Power Dissipation ($T_C=25^\circ\text{C}$)	P_D	4.0	4.0	W
Operating and Storage Junction Temperature	T_J, T_{stg}	-65 TO +200		$^\circ\text{C}$
Thermal Resistance	θ_{JA}	175	175	$^\circ\text{C}/\text{W}$
Thermal Resistance	θ_{JC}	43.75	43.75	$^\circ\text{C}/\text{W}$

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

SYMBOL	TEST CONDITIONS	2N3734		2N3735		UNIT
		MIN	MAX	MIN	MAX	
I_{CEV}	$V_{CE}=25\text{V}, V_{EB}=2.0\text{V}$		200	-		nA
I_{CEV}	$V_{CE}=25\text{V}, V_{EB}=2.0\text{V}, T_A=100^\circ\text{C}$		20	-		μA
I_{CEV}	$V_{CE}=40\text{V}, V_{EB}=2.0\text{V}$		-	200		nA
I_{CEV}	$V_{CE}=40\text{V}, V_{EB}=2.0\text{V}, T_A=100^\circ\text{C}$		-	20		μA
I_{BL}	$V_{CE}=25\text{V}, V_{EB}=2.0\text{V}$		300	-		nA
I_{BL}	$V_{CE}=40\text{V}, V_{EB}=2.0\text{V}$		-	300		nA
BV_{CB0}	$I_C=10\mu\text{A}$	50		75		V
BV_{CE0}	$I_C=10\text{mA}$	30		50		V
BV_{EB0}	$I_E=10\mu\text{A}$	5.0		5.0		V
$V_{CE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.2		0.2	V
$V_{CE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$		0.3		0.3	V
$V_{CE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		0.5		0.5	V
$V_{CE}(\text{SAT})$	$I_C=1.0\text{A}, I_B=100\text{mA}$		0.9		0.9	V
$V_{BE}(\text{SAT})$	$I_C=10\text{mA}, I_B=1.0\text{mA}$		0.8		0.8	V
$V_{BE}(\text{SAT})$	$I_C=150\text{mA}, I_B=15\text{mA}$		1.0		1.0	V
$V_{BE}(\text{SAT})$	$I_C=500\text{mA}, I_B=50\text{mA}$		1.2		1.2	V
$V_{BE}(\text{SAT})$	$I_C=1.0\text{A}, I_B=100\text{mA}$	0.9	1.4	0.9	1.4	V
h_{FE}	$V_{CE}=1.0\text{V}, I_C=10\text{mA}$	35		35		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=150\text{mA}$	40		40		
h_{FE}	$V_{CE}=1.0\text{V}, I_C=500\text{mA}$	35		35		
h_{FE}	$V_{CE}=1.5\text{V}, I_C=1.0\text{A}$	30	120	20	80	
h_{FE}	$V_{CE}=5.0\text{V}, I_C=1.5\text{A}$	30		20		
f_T	$V_{CE}=10\text{V}, I_C=50\text{mA}, f=100\text{MHz}$	250		250		MHz
C_{ob}	$V_{CB}=10\text{V}, I_E=0, f=100\text{kHz}$		9.0		9.0	pF
C_{ib}	$V_{BE}=0.5\text{V}, I_C=0, f=100\text{kHz}$		80		80	pF
t_{on}	$V_{CC}=30\text{V}, V_{BE}(\text{OFF})=2.0\text{V}, I_C=1.0\text{A}, I_{B1}=100\text{mA}$		48		48	ns
t_{off}	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_{B1}=I_{B2}=100\text{mA}$		60		60	ns
Q_T	$V_{CC}=30\text{V}, I_C=1.0\text{A}, I_B=100\text{mA}$		10		10	nC

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