

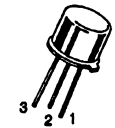
MAXIMUM RATINGS

Rating	Symbol	2N3734	2N3735	2N3737	Unit
Collector-Emitter Voltage	V <sub>CE0</sub>	30	50		Vdc
Collector-Base Voltage	V <sub>CB0</sub>	50	75		Vdc
Emitter-Base Voltage	V <sub>EB0</sub>	5.0			Vdc
Collector Current — Continuous	I <sub>C</sub>	1.5			Adc
		TO-39 2N3734 2N3735	TO-46 2N3737		
Total Device Dissipation @ T <sub>A</sub> = 25°C Derate above 25°C	P <sub>D</sub>	1.0 5.71	0.5 2.86		Watt mW/°C
Total Device Dissipation @ T <sub>C</sub> = 25°C Derate above 25°C	P <sub>D</sub>	4.0 22.8	2.0 11.4		Watts mW/°C
Operating and Storage Junction Temperature Range	T <sub>J</sub> , T <sub>stg</sub>	-65 to +200			°C

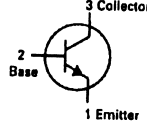
THERMAL CHARACTERISTICS

Characteristic	Symbol	2N3734	2N3735	2N3737	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.044	0.088		°C/mW
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	0.175	0.35		°C/mW

**2N3734**  
**2N3735**  
CASE 79-02, STYLE 1  
TO-39 (TO-205AD)

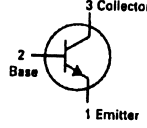


**2N3737**  
CASE 26-03, STYLE 1  
TO-46 (TO-206AD)



**GENERAL PURPOSE  
TRANSISTOR**

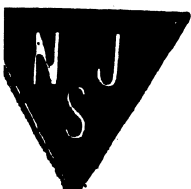
NPN SILICON



Refer to 2N3725 for graphs.

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

Characteristic	Symbol	Min	Max	Unit
<b>OFF CHARACTERISTICS</b>				
Collector-Emitter Breakdown Voltage(1) (I <sub>C</sub> = 10 mAdc, I <sub>B</sub> = 0)	2N3734 2N3735, 2N3737	V <sub>(BR)CEO</sub>	30 50	— — Vdc
Collector-Base Breakdown Voltage (I <sub>C</sub> = 10 μAdc, I <sub>E</sub> = 0)	2N3734 2N3735, 2N3737	V <sub>(BR)CBO</sub>	50 75	— — Vdc
Emitter-Base Breakdown Voltage (I <sub>E</sub> = 10 μAdc, I <sub>C</sub> = 0)		V <sub>(BR)EBO</sub>	5.0	— Vdc
Collector Cutoff Current (V <sub>CE</sub> = 25 Vdc, V <sub>EB</sub> = 2 Vdc) (V <sub>CE</sub> = 25 Vdc, V <sub>EB</sub> = 2 Vdc, T <sub>A</sub> = 100°C) (V <sub>CE</sub> = 40 Vdc, V <sub>EB</sub> = 2 Vdc) (V <sub>CE</sub> = 40 Vdc, V <sub>EB</sub> = 2 Vdc, T <sub>A</sub> = 100°C)	2N3734 2N3735, 2N3737	I <sub>CEX</sub>	— — — —	0.20 20 0.20 20 μAdc
Base Cutoff Current (V <sub>CE</sub> = 25 Vdc, V <sub>EB</sub> = 2 Vdc) (V <sub>CE</sub> = 40 Vdc, V <sub>EB</sub> = 2 Vdc)	2N3734 2N3735, 2N3737	I <sub>BL</sub>	— —	0.3 0.3 μAdc
<b>ON CHARACTERISTICS</b>				
DC Current Gain(1) (I <sub>C</sub> = 10 mAdc, V <sub>CE</sub> = 1 Vdc) (I <sub>C</sub> = 150 mAdc, V <sub>CE</sub> = 1 Vdc) (I <sub>C</sub> = 500 mAdc, V <sub>CE</sub> = 1 Vdc) (I <sub>C</sub> = 1 Adc, V <sub>CE</sub> = 1.5 Vdc)	2N3734 2N3735, 2N3737	h <sub>FE</sub>	35 40 35 30 20	— — — 120 80
(I <sub>C</sub> = 1.5 Adc, V <sub>CE</sub> = 5 Vdc)	2N3734 2N3735, 2N3737		30 20	— —
Collector-Emitter Saturation Voltage(1) (I <sub>C</sub> = 10 mAdc, I <sub>B</sub> = 1 mAdc) (I <sub>C</sub> = 150 mAdc, I <sub>B</sub> = 15 mAdc) (I <sub>C</sub> = 500 mAdc, I <sub>B</sub> = 50 mAdc) (I <sub>C</sub> = 1 Adc, I <sub>B</sub> = 100 mAdc)		V <sub>CE(sat)</sub>	— — — —	0.2 0.3 0.5 0.8 Vdc
Base-Emitter Saturation Voltage(1) (I <sub>C</sub> = 10 mAdc, I <sub>B</sub> = 1 mAdc) (I <sub>C</sub> = 150 mAdc, I <sub>B</sub> = 15 mAdc) (I <sub>C</sub> = 500 mAdc, I <sub>B</sub> = 50 mAdc) (I <sub>C</sub> = 1 Adc, I <sub>B</sub> = 100 mAdc)		V <sub>BE(sat)</sub>	— — — 0.9	0.8 1.0 1.2 1.4 Vdc



**2N3737**

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

Characteristic	Symbol	Min	Max	Unit
<b>SMALL-SIGNAL CHARACTERISTICS</b>				
Output Capacitance ( $V_{CB} = 10\text{ Vdc}$ , $I_E = 0$ , $f = 100\text{ kHz}$ )	$C_{obo}$	—	9.0	pF
Input Capacitance ( $V_{BE} = 0.5\text{ Vdc}$ , $I_C = 0$ , $f = 100\text{ kHz}$ )	$C_{ibo}$	—	80	pF
Small-Signal Current Gain ( $I_C = 50\text{ mAdc}$ , $V_{CE} = 10\text{ Vdc}$ , $f = 100\text{ MHz}$ )	$h_{fe}$	2.5	—	—
<b>SWITCHING CHARACTERISTICS</b>				
Turn-On Time ( $V_{CC} = 30\text{ V}$ , $V_{BE(off)} = 2.0\text{ V}$ , $I_C = 1.0\text{ Amp}$ , $I_{B1} = 100\text{ mA}$ )	$t_{on}$	—	40	ns
Turn-Off Time ( $V_{CC} = 30\text{ V}$ , $V_{BE(off)} = 2.0\text{ V}$ , $I_C = 1.0\text{ Amp}$ , $I_{B1} = 100\text{ mA}$ )	$t_{off}$	—	60	ns
Total Control Charge ( $I_C = 1\text{ Amp}$ , $I_B = 100\text{ mA}$ , $V_{CC} = 30\text{ V}$ )	$Q_r$	—	10	NC

(1) Pulse Test: Pulse Width  $\leq 300\ \mu\text{s}$ , Duty Cycle  $\leq 2.0\%$ .