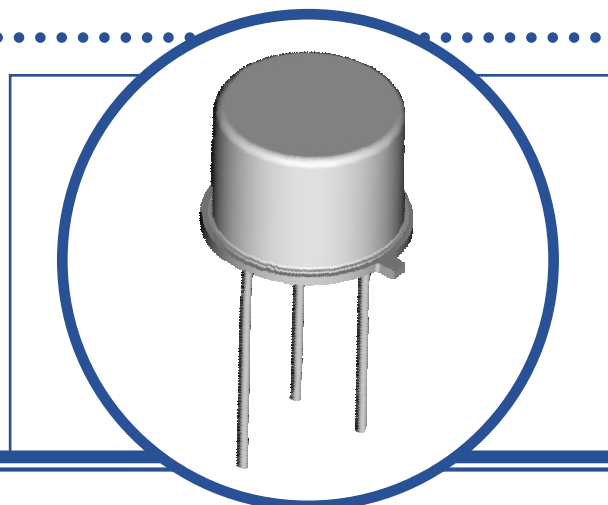


GENERAL PURPOSE SILICON NPN TRANSISTOR

2N3734 / 2N3735

- Hermetic TO-39 Metal Package
- General purpose amplifier and switching applications



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

Symbols	Parameters	2N3734	2N3735
V_{CBO}	Collector – Base Voltage	50V	75V
V_{CEO}	Collector – Emitter Voltage	30V	50V
V_{EBO}	Emitter – Base Voltage	5V	
I_C	Collector Current – Continuous ($T_C = 25^\circ\text{C}$)	1.5A	
P_D	Total Power Dissipation at $T_A = 25^\circ\text{C}$	1.0W	
	De-rate Above 25°C	5.7mW/ $^\circ\text{C}$	
P_D	Total Power Dissipation at $T_C = 25^\circ\text{C}$	2.9W	
	De-rate Above 25°C	16.6mW/ $^\circ\text{C}$	
T_J	Junction Temperature Range	-65 to $+200^\circ\text{C}$	
T_{stg}	Storage Temperature Range	-65 to $+200^\circ\text{C}$	

THERMAL PROPERTIES

Symbols	Parameters	Max.	Units
$R_{\theta JA}$	Thermal Resistance, Junction To Ambient	175	$^\circ\text{C/W}$
$R_{\theta JC}$	Thermal Resistance, Junction To Case	60	$^\circ\text{C/W}$

Semelab Limited reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by Semelab is believed to be both accurate and reliable at the time of going to press. However Semelab assumes no responsibility for any errors or omissions discovered in its use. Semelab encourages customers to verify that datasheets are current before placing orders.

GENERAL PURPOSE SILICON NPN TRANSISTOR 2N3734, 2N3735

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise stated)						
Symbols	Parameters	Test Conditions		Min.	Typ.	Max. Units
$V_{(BR)CEO}^{(1)}$	Collector-Emitter Breakdown Voltage	$I_C = 10\text{mA}$	2N3734	30		V
		$I_B = 0$	2N3735	50		
$V_{(BR)CBO}^{(1)}$	Collector-Base Breakdown Voltage	$I_C = 10\mu\text{A}$	2N3734	50		
		$I_E = 0$	2N3735	75		
$V_{(BR)EBO}^{(1)}$	Emitter-Base Breakdown Voltage	$I_E = 10\mu\text{A}$	$I_C = 0$	5.0		
I_{CEX}	Collector Cut-Off Current	$V_{CE} = 25\text{V}$	2N3734			0.2
		$V_{BE} = -2\text{V}$	$T_A = 100^\circ\text{C}$			20
		$V_{CE} = 40\text{V}$	2N3735			0.2
		$V_{BE} = -2\text{V}$	$T_A = 100^\circ\text{C}$			20
$h_{FE}^{(1)}$	Forward-current transfer ratio	$I_C = 10\text{mA}$	$V_{CE} = 1.0\text{V}$	35		
		$I_C = 150\text{mA}$	$V_{CE} = 1.0\text{V}$	40		
		$I_C = 500\text{mA}$	$V_{CE} = 1.0\text{V}$	35		
		$I_C = 1.0\text{A}$	2N3734	20		120
		$V_{CE} = 1.5\text{V}$	2N3735	20		80
		$I_C = 1.5\text{A}$	2N3734	20		
$V_{CE(sat)}^{(1)}$	Collector-Emitter Saturation Voltage	$I_C = 10\text{mA}$	$I_B = 1.0\text{mA}$			0.2
		$I_C = 150\text{mA}$	$I_B = 15\text{mA}$			0.3
		$I_C = 500\text{mA}$	$I_B = 50\text{mA}$			0.5
		$I_C = 1.0\text{A}$	$I_B = 100\text{mA}$			0.9
$V_{BE(sat)}^{(1)}$	Base-Emitter Saturation Voltage	$I_C = 10\text{mA}$	$I_B = 1.0\text{mA}$			0.8
		$I_C = 150\text{mA}$	$I_B = 15\text{mA}$			1.0
		$I_C = 500\text{mA}$	$I_B = 50\text{mA}$			1.2
		$I_C = 1.0\text{A}$	$I_B = 100\text{mA}$	0.9		1.4

Notes

- (1) Pulse Width $\leq 380\mu\text{s}$, $\delta \leq 2\%$
(2) By design only, not a production test.

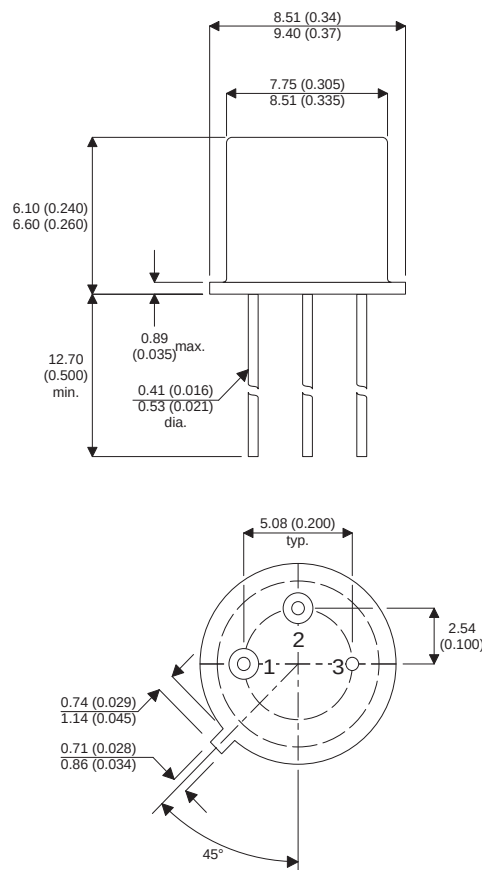
GENERAL PURPOSE SILICON NPN TRANSISTOR 2N3734, 2N3735

DYNAMIC CHARACTERISTICS

$ h_{fe} $	Magnitude of Common-Emitter Small-Signal Short-Circuit forward Current, Transfer Ratio	$I_C = 50\text{mA}$ $V_{CE} = 10\text{V}$ $f = 100\text{MHz}$	2.5			
C_{obo}	Output Capacitance	$V_{CB} = 10\text{V}$ $I_E = 0$ $f = 1.0\text{MHz}$			9	pF
C_{ibo}	Input Capacitance	$V_{EB} = 0.5\text{V}$ $I_C = 0$ $f = 1.0\text{MHz}$			80	pF
t_{on}	Turn-On Time	$I_C = 1.0\text{A}$ $V_{CC} = 30\text{V}$ $I_{B1} = 100\text{mA}$			40	ns
t_{off}	Turn-Off Time	$I_C = 1.0\text{A}$ $V_{CC} = 30\text{V}$ $I_{B1} = -I_{B2} = 100\text{mA}$			60	

MECHANICAL DATA

Dimensions in mm (inches)



TO-39 (TO-205AD) METAL PACKAGE Underside View

Pin 1 - Emitter

Pin 2 - Base

Pin 3 - Collector