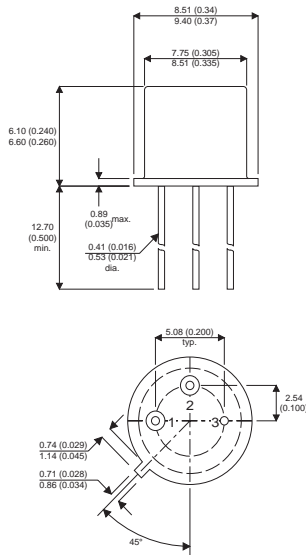


**MECHANICAL DATA**

Dimensions in mm (inches)



**SMALL SIGNAL  
PNP TRANSISTORS**

**APPLICATIONS**

Small signal PNP transistors for relay switching resistor logic circuits and general purpose applications.

**TO39 PACKAGE (TO-205AD)**

**Underside View**

Pin 1 = Emitter    Pin 2 = Base    Pin 3 = Collector

**ABSOLUTE MAXIMUM RATINGS** ( $T_{case} = 25^{\circ}C$  unless otherwise stated)

$V_{CB}$	Collector – Base Voltage	25V
$V_{CE}$	Collector – Emitter Voltage	25V
$V_{EB}$	Emitter – Base Voltage	16V
$I_{CM}$	Collector Current	100mA
$I_{C(AV)}$	Collector Current ave Over any 20ms	30mA
$I_{BM}$	Base Current	30mA
$I_{B(AV)}$	Base Current ave Over any 20ms	15mW
$I_{EM}$	Emitter Current	100mA
$I_{E(AV)}$	Emitter Current ave Over any 20ms	65mA
$P_{TOT}$	Total Power Dissipation	230mW

Semelab Plc 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.

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Issue 1

## THERMAL CHARACTERISTICS

CHARACTERISTICS		
$\theta_{j-amb}$	Junction to Ambient	0.3°C/mW
$\theta_{j-case}$	Junction to Case	0.12°C/mW

## ELECTRICAL CHARACTERISTICS ( $T_{case} = 25^{\circ}C$ unless otherwise stated)

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CBO}$	$V_{CB} = -6V$ $I_E = 0$		1	100	nA
	$V_{CB} = -6V$ $I_E = 0$ $T_{amb} = 100^{\circ}C$		0.1	2.5	$\mu A$
$I_{EBO}$	$V_{EB} = -6V$ $I_C = 0$		1	100	nA
	$V_{EB} = -6V$ $I_C = 0$ $T_{amb} = 100^{\circ}C$		0.1	2.5	$\mu A$
$h_{FE}$	$I_C = 30mA$ $V_{CE} = -1V$	12	30		—
	$I_C = 150mA$ $V_{CE} = -1V$	10		50	
	$I_{CM} = 300mA$ $V_{CE} = -6V$		15		
$V_{CE(sat)}$	Collector – Emitter Saturation Voltage $I_C = 150mA$ $I_B = 15mA$		-0.46	-1.1	V
$V_{BE}$	Base – Emitter Voltage $I_C = 150mA$ $I_B = -1V$		-1.5	-1.9	
$I_B$	Base – Current $I_E = 150mA$ $V_{CB} = 0$	3		14	mA
NF	Noise Figure $I_C = 500\mu A$ $V_{CE} = -2V$ $f = 1kc/s$ $R_s = 500\Omega$		8		dB
$h_{fe}$	Small Signal Current Gain $I_C = 10mA$ $V_{CE} = -6V$ $f = 1kc/s$	15	35	100	—
$f_T$	Transistion Frequency $I_C = 1mA$ $V_{CE} = -6V$	0.45	1.5		MHz

\*Pulse Test : Pulse Width < 300 $\mu s$ , Duty Cycle < 2%