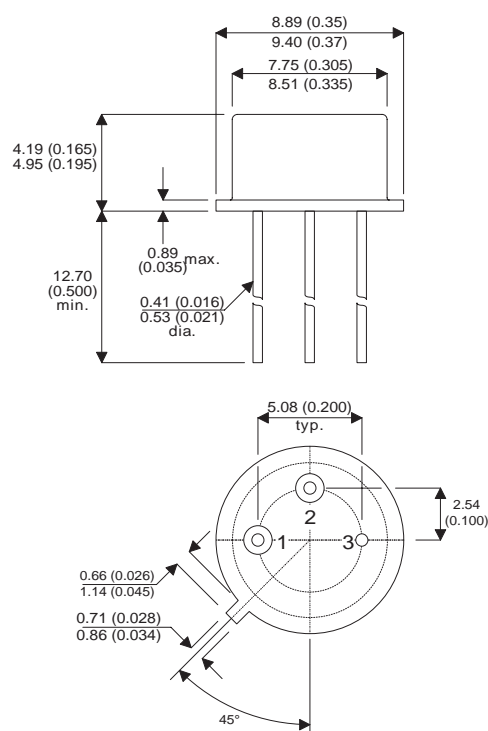


## MECHANICAL DATA

Dimensions in mm



### TO-5

Pin1 - Emitter

Pin2 - Base

Pin3 - Collector

## SMALL SIGNAL PNP TRANSISTORS IN TO-5

## APPLICATIONS

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

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

		2N5404	2N5405	2N5406	2N5407
$BV_{CBO}$	Collector – Base Breakdown Voltage	– 80V	– 100V	– 80V	– 100V
$BV_{CEO}$	Collector – Emitter Breakdown Voltage	– 80V	– 100V	– 80V	– 100V
$BV_{EBO}$	Emitter – Base Breakdown Voltage	– 6V	– 6V	– 6V	– 6V
$I_{C(Max)}$	Collector Current	– 5A	– 5A	– 5A	– 5A
$I_{B(Max)}$	Base Current	– 2A	– 2A	– 2A	– 2A
$P_{TOT}$	Total Power Dissipation (100°C Case)	5W	5W	5W	5W
$T_{STG}, T_J$	Operating and Storage Temperature Range	– 65°C to +200°C			

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.

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{\text{CEX}}$ Collector Cut-Off Current	$V_{\text{CE}} = BV_{\text{CEO}} \quad V_{\text{BE}} = 1.5\text{V}$ $V_{\text{CE}} = BV_{\text{CEO}} \quad V_{\text{BE}} = 1.5\text{V}$ $T_{\text{C}} = 150^{\circ}\text{C}$			- 10 - 500	$\mu\text{A}$
$V_{\text{CEO}}^{(\text{SUS})}$ Collector-Emitter Sustaining Voltage With Base Open	$I_{\text{C}} = -100\text{mA} \quad I_{\text{B}} = 0$ 2N5404 2N5406	-80			V
	$I_{\text{C}} = -100\text{mA} \quad I_{\text{B}} = 0$ 2N5405 2N5407	-100			
$I_{\text{CEO}}$ Collector Cut-Off Current	$V_{\text{CE}} = -50\text{V} \quad I_{\text{C}} = 0$	-100			$\mu\text{A}$
$I_{\text{EBO}}$	$V_{\text{EB}} = -4\text{V} \quad I_{\text{C}} = 0$			-1	$\mu\text{A}$
$h_{\text{FE}}$ Common Emitter, Small-Signal Value of the Short-Circuit Forward Current Transfer Ratio ( $f = 1\text{KHz}$ )	$I_{\text{C}} = -2\text{A} \quad V_{\text{CE}} = -5\text{V}$ 2N5404 2N5405	20		60	-
	$I_{\text{C}} = -2\text{A} \quad V_{\text{CE}} = -5\text{V}$ 2N5406 2N5407	40		120	
$V_{\text{CE}}^{(\text{SAT})}$ Collector-Emitter Saturation Voltage	$I_{\text{C}} = -2\text{A} \quad I_{\text{B}} = -0.2\text{A}$			-0.6	V
$V_{\text{BE}}^{(\text{SAT})}$ Base-Emitter Saturation Voltage	$I_{\text{C}} = -2\text{A} \quad I_{\text{B}} = -0.2\text{A}$			-1.2	V
<b>DYNAMIC CHARACTERISTICS</b>					
$C_{\text{OBO}}$ Collector Base Capacitance	$V_{\text{CB}} = -10\text{V} \quad f = 1\text{MHz}$			150	pf
$f_{\text{t}}$ Transistion Frequency	$V_{\text{CE}} = -5\text{V} \quad I_{\text{C}} = -0.2\text{A}$	40			MHz
$t_{\text{r}}$ Rise Time	$I_{\text{C}} = -2\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 0.2\text{A}$			0.5	$\mu$
$t_{\text{s}}$ Storage time	$I_{\text{C}} = -2\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 0.2\text{A}$ 2N5404 2N5405			0.75	$\mu$
	$I_{\text{C}} = -2\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 2\text{A}$ 2N5406 2N5407			1	
$t_{\text{f}}$ Fall Time	$I_{\text{C}} = -2\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 2\text{A}$ 2N5404 2N5405			0.2	$\mu$
	$I_{\text{C}} = -2\text{A}$ $I_{\text{B1}} = -I_{\text{B2}} = 2\text{A}$ 2N5406 2N5407			0.3	

\* Pulse test : Pulse Width < 300 $\mu\text{s}$  ,Duty Cycle < 2%