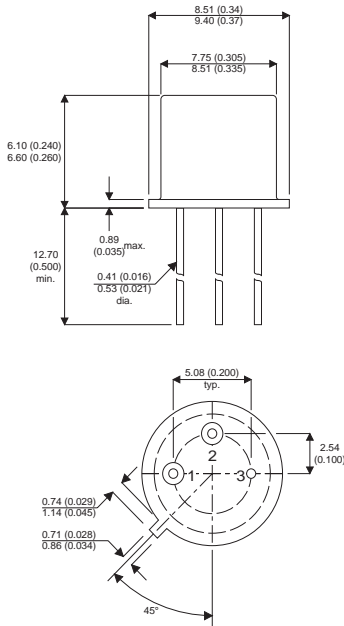


**MECHANICAL DATA**

Dimensions in mm (inches)



**TO-39 (TO - 205AD)**

Pin 1 – Emitter      Pin 2 – Base      Pin 3 – Collector

**NPN SILICON HIGH FREQUENCY TRANSISTOR**

**APPLICATIONS**

The 2N3553 is designed for amplifier and oscillator applications in military and industrial equipment. Suitable for use as output, driver or pre-driver stages in VHF equipment.

**FEATURES**

- Fast Switching
- Low Leakage Current

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

$V_{CEO}$	Collector – Emitter Voltage	40V
$V_{CBO}$	Collector – Base Voltage	65V
$V_{EBO}$	Emitter – Base Voltage	4.0V
$I_C$	Continuous Collector Current	1A
$P_D$	Total Device Disipation @ $T_{Case} = 25^\circ\text{C}$	7W
	Derate above $25^\circ\text{C}$	40mW/ $^\circ\text{C}$
$T_j, T_{stg}$	Operating and Storage Junction Temperature Range	-65 to +200 $^\circ\text{C}$

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

Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$V_{\text{CEO(sus)}}$ Collector Emitter Sustaining Voltage	$I_C = 200\text{mA}$ $I_B = 0$	40			V
$V_{\text{(BR)EBO}}$ Emitter Base Breakdown Voltage	$I_E = 0.1\text{mA}$ $I_C = 0$	4.0			V
$I_{\text{CEO}}$ Collector Cut Off Current	$V_{\text{CE}} = 30\text{V}$ $I_B = 0$			0.1	mA
$I_{\text{CEX}}$ Collector Cut Off Current $V_{\text{BE(off)}} = 1.5\text{V}$	$V_{\text{CE}} = 30\text{V}$ $T_C = 200^\circ\text{C}$			5.0	
	$V_{\text{CE}} = 65\text{V}$			1.0	
$I_{\text{EBO}}$ Emitter Cut Off Current	$V_{\text{BE}} = 4\text{V}$ $I_C = 0$			0.1	
$h_{\text{FE}}$ DC Current Gain	$I_C = 250\text{mA}$ $V_{\text{CE}} = 1.0\text{V}$	10			—
$V_{\text{CE(sat)}}$ Collector Emitter Saturation Voltage	$I_C = 250\text{mA}$ $I_B = 50\text{mA}$			1.0	V
$f_T$ Current Gain - Bandwidth Product	$I_C = 100\text{mA}$ $V_{\text{CE}} = 28\text{V}$ $f = 100\text{MHz}$		500		MHz
$C_{\text{obo}}$ Output Capacitance	$I_E = 0$ $V_{\text{CB}} = 30\text{V}$ $f = 100\text{kHz}$		8.0	10	pF
$P_{\text{in}}$ Power Input	$P_{\text{out}} = 2.5\text{W}$ $V_{\text{CE}} = 28\text{V}$ $f = 175\text{MHz}$			0.25	W
$G_{\text{pe}}$ Common Emitter Amplifier Power Gain	$P_{\text{out}} = 2.5\text{W}$ $V_{\text{CE}} = 28\text{V}$ $f = 175\text{MHz}$	10			dB
$\eta$ Collector Efficiency	$P_{\text{out}} = 2.5\text{W}$ $V_{\text{CE}} = 28\text{V}$ $f = 175\text{MHz}$	50			%

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