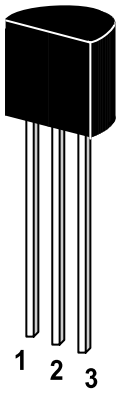
ST 2N5550 / 2N5551

NPN Silicon Epitaxial Planar Transistors

for general purpose, high voltage amplifier applications.

As complementary types the PNP transistors ST 2N5400 and ST 2N5401 are recommended.

On special request, these transistors can be manufactured in different pin configurations.



1. Emitter 2. Base 3. Collector

TO-92 Plastic Package
Weight approx. 0.19g

Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Emitter Voltage	ST 2N5550 ST 2N5551	V_{CEO} V_{CEO}	140 160	V V
Collector Base Voltage	ST 2N5550 ST 2N5551	V_{CBO} V_{CBO}	160 180	V V
Emitter Base Voltage		V_{EBO}	6	V
Collector Current		I_C	600	mA
Power Dissipation		P_{tot}	625 [1)]	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_S	- 55 to + 150	°C

[1)] Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case.

Characteristics at T_{amb} = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at V_{CE} = 5 V, I_C = 1 mA	ST 2N5550	h_{FE}	60	-	-
	ST 2N5551	h_{FE}	80	-	-
at V_{CE} = 5 V, I_C = 10 mA	ST 2N5550	h_{FE}	60	250	-
	ST 2N5551	h_{FE}	80	250	-
at V_{CE} = 5 V, I_C = 50 mA	ST 2N5550	h_{FE}	20	-	-
	ST 2N5551	h_{FE}	30	-	-
Collector Emitter Breakdown Voltage					
at I_C = 1 mA	ST 2N5550	$V_{(BR)CEO}$	140	-	V
	ST 2N5551	$V_{(BR)CEO}$	160	-	V
Collector Base Breakdown Voltage					
at I_C = 100 µA	ST 2N5550	$V_{(BR)CBO}$	160	-	V
	ST 2N5551	$V_{(BR)CBO}$	180	-	V
Emitter Base Breakdown Voltage at I_E = 10 µA		$V_{(BR)EBO}$	6	-	V
Collector Cutoff Current					
at V_{CB} = 100 V	ST 2N5550	I_{CBO}	-	100	nA
at V_{CB} = 120 V	ST 2N5551	I_{CBO}	-	50	nA
Emitter Cutoff Current at V_{EB} = 4 V		I_{EBO}	-	50	nA
Collector Saturation Voltage					
at I_C = 10 mA, I_B = 1 mA		$V_{CE\ sat}$	-	0.15	V
at I_C = 50 mA, I_B = 5 mA	ST 2N5550	$V_{CE\ sat}$	-	0.25	V
	ST 2N5551	$V_{CE\ sat}$	-	0.2	V
Base Saturation Voltage					
at I_C = 10 mA, I_B = 1 mA		$V_{BE\ sat}$	-	1	V
at I_C = 50 mA, I_B = 5 mA	ST 2N5550	$V_{BE\ sat}$	-	1.2	V
	ST 2N5551	$V_{BE\ sat}$	-	1	V
Gain Bandwidth Product at V_{CE} = 10 V, I_C = 10 mA, f = 100 MHz		f_T	100	300	MHz
Collector Base Capacitance at V_{CB} = 10 V, f = 1 MHz		C_{CBO}	-	6	pF
Noise Figure					
at V_{CE} = 5 V, I_C = 200 µA, R_G = 2 KΩ, f = 30 Hz…15 KHz	ST 2N5550	NF	-	10	dB
	ST 2N5551	NF	-	8	dB
Thermal Resistance Junction to Ambient		R_{thA}	-	200 [1)]	K/W

[1)] Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case.

Fig. 1 P_C-T_a

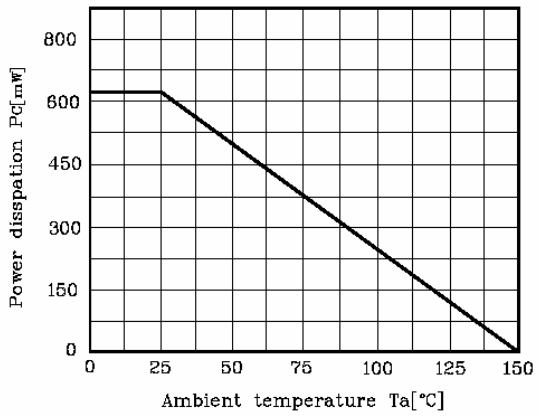


Fig. 2 I_C - V_{BE}

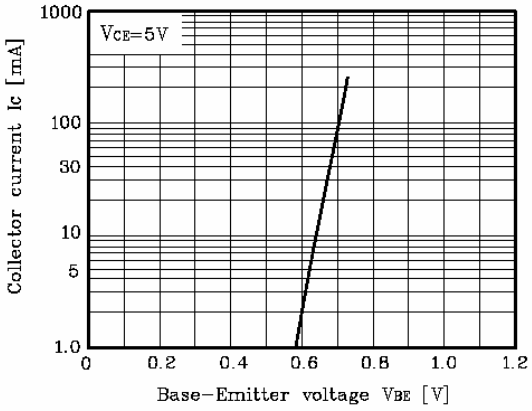


Fig. 3 f_T - I_C

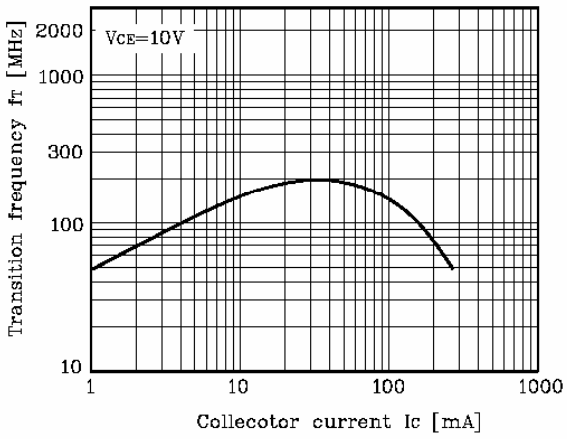


Fig. 4 $V_{CE(sat)}$, $V_{BE(sat)}$ - I_C

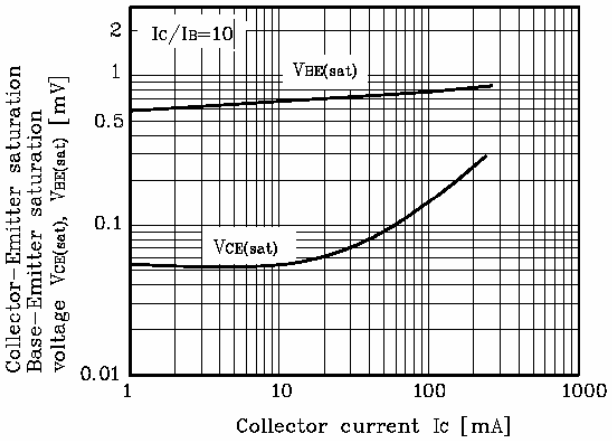


Fig. 5 C_{ob} - V_{CB}