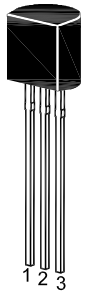
2N2222 / 2N2222A

NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

The transistor is subdivided into one group according to its DC current gain.

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



1. Emitter 2. Base 3. Collector
TO-92 Plastic Package

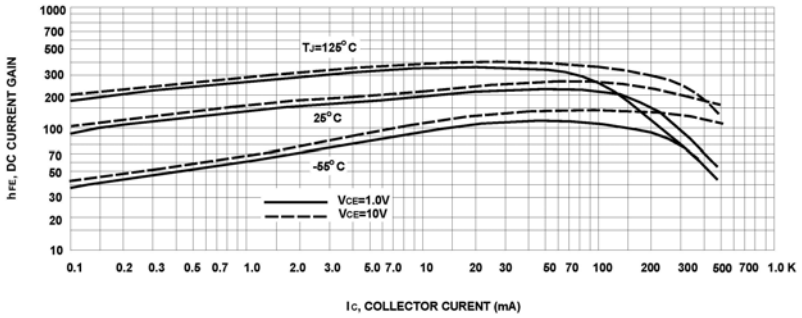
Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Collector Base Voltage	2N2222 2N2222A	V_{CBO}	60 75	V
Collector Emitter Voltage	2N2222 2N2222A	V_{CEO}	30 40	V
Emitter Base Voltage	2N2222 2N2222A	V_{EBO}	5 6	V
Collector Current		I_C	600	mA
Power Dissipation		P_{tot}	625	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 55 to + 150	°C

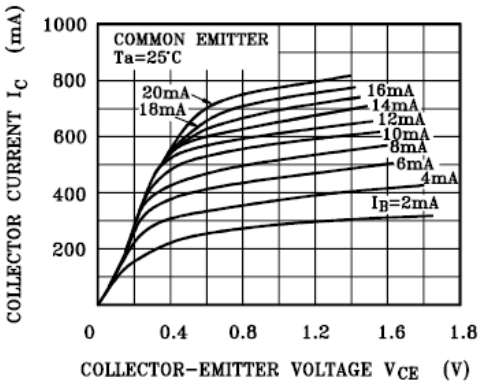
Characteristics at T_a = 25 °C

Parameter		Symbol	Min.	Max.	Unit
DC Current Gain					
at V_{CE} = 10 V, I_C = 0.1 mA		h_{FE}	35	-	-
at V_{CE} = 10 V, I_C = 1 mA		h_{FE}	50	-	-
at V_{CE} = 10 V, I_C = 10 mA		h_{FE}	75	-	-
at V_{CE} = 10 V, I_C = 150 mA		h_{FE}	100	300	-
at V_{CE} = 10 V, I_C = 500 mA	2N2222	h_{FE}	30	-	-
	2N2222A	h_{FE}	40	-	-
Collector Base Cutoff Current					
at V_{CB} = 50 V	2N2222	I_{CBO}	-	10	nA
at V_{CB} = 60 V	2N2222A		-	10	
Collector Base Breakdown Voltage					
at I_C = 10 µA	2N2222	$V_{(BR)CBO}$	60	-	V
	2N2222A		75	-	
Collector Emitter Breakdown Voltage					
at I_C = 10 mA	2N2222	$V_{(BR)CEO}$	30	-	V
	2N2222A		40	-	
Emitter Base Breakdown Voltage					
at I_E = 10 µA	2N2222	$V_{(BR)EBO}$	5	-	V
	2N2222A		6	-	
Collector Emitter Saturation Voltage					
at I_C = 150 mA, I_B = 15 mA	2N2222	$V_{CE(sat)}$	-	0.4	V
	2N2222A		-	0.3	
at I_C = 500 mA, I_B = 50 mA	2N2222		-	1.6	
	2N2222A		-	1	
Base Emitter Saturation Voltage					
at I_C = 150 mA, I_B = 15 mA	2N2222	$V_{BE(sat)}$	-	1.3	V
	2N2222A		0.6	1.2	
at I_C = 500 mA, I_B = 50 mA	2N2222		-	2.6	
	2N2222A		-	2	
Gain Bandwidth Product					
at I_C = 20 mA, V_{CE} = 20 V, f = 100 MHz		f_T	250	-	MHz
Collector Output Capacitance					
at V_{CB} = 10 V, f = 1 MHz		C_{ob}	-	8	pF

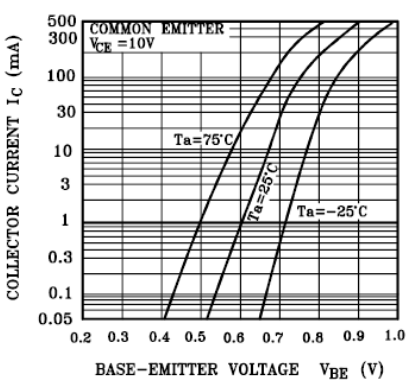
Figure 1. DC Current Gain



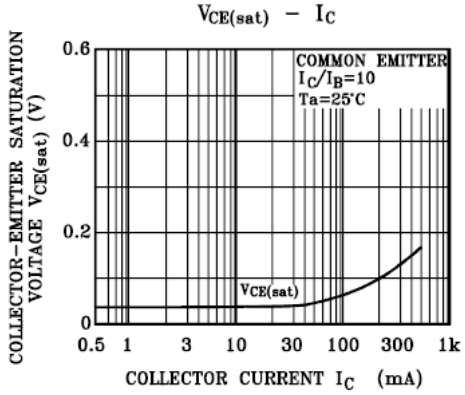
$I_C - V_{CE}$



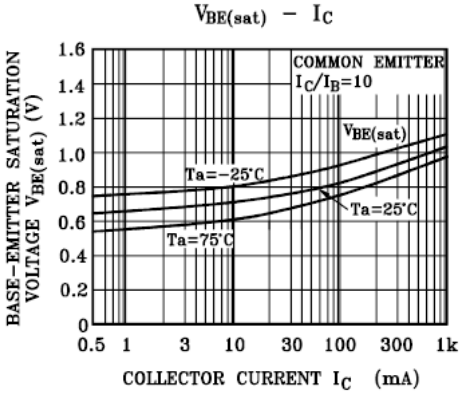
$I_C - V_{BE}$



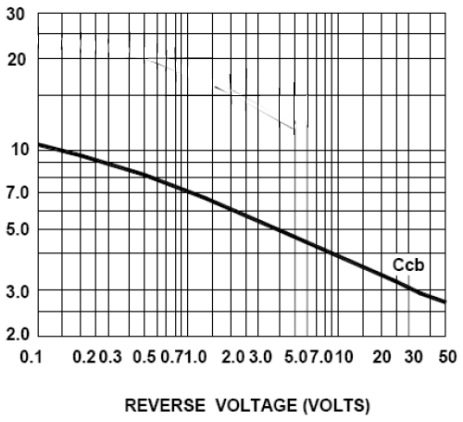
$V_{CE(sat)} - I_C$



$V_{BE(sat)} - I_C$



Capacitances



Pc - Ta