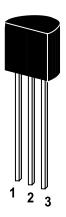
#### **NPN Silicon Epitaxial Planar Transistor**

for switching and AF amplifier applications.

The transistor is subdivided into one group according to its DC current gain. As complementary type the PNP transistor ST 2N2907 and ST 2N2907A 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)

	Symbol	Value		Unit
		ST 2N2222	ST 2N2222A	
Collector Base Voltage	$V_{CBO}$	60	75	V
Collector Emitter Voltage	$V_{CEO}$	30	40	V
Emitter Base Voltage	$V_{EBO}$	5	6	V
Collector Current	Ic	600		mA
Power Dissipation	P <sub>tot</sub>	625		mW
Junction Temperature	Tj	150		°C
Storage Temperature Range	Ts	-55 to +150		°C







### ST 2N2222 / 2N2222A

#### Characteristics at T<sub>amb</sub>=25 °C

		Symbol	Min.	Тур.	Max.	Unit
DC Current Gain						
at I <sub>C</sub> =0.1mA, V <sub>CE</sub> =10V		h <sub>FE</sub>	35	-	-	-
at I <sub>C</sub> =1mA, V <sub>CE</sub> =10V		h <sub>FE</sub>	50	-	-	-
at I <sub>C</sub> =10mA, V <sub>CE</sub> =10V		h <sub>FE</sub>	75	-	-	-
at I <sub>C</sub> =150mA, V <sub>CE</sub> =10V		h <sub>FE</sub>	100	-	300	-
at I <sub>C</sub> =500mA, V <sub>CE</sub> =10V	ST 2N2222	h <sub>FE</sub>	30	-	-	-
	ST 2N2222A	h <sub>FE</sub>	40	-	-	-
Collector Cutoff Current						
at V <sub>CB</sub> =50V	ST 2N2222	I <sub>CBO</sub>	-	-	0.01	μΑ
V <sub>CB</sub> =60V	ST 2N2222A	I <sub>CBO</sub>	-	-	0.01	μΑ
Collector Base Breakdown Vol	tage					
at I <sub>C</sub> =10µA	ST 2N2222	$V_{(BR)CBO}$	60	-	-	V
	ST 2N2222A	$V_{(BR)CBO}$	75	-	-	V
Collector Emitter Breakdown V	oltage					
at I <sub>C</sub> =10mA	ST 2N2222	$V_{(BR)CEO}$	30	-	-	V
	ST 2N2222A	$V_{(BR)CEO}$	40	-	-	V
Emitter Base Breakdown Volta	ige					
at I <sub>E</sub> =10µA	ST 2N2222	$V_{(BR)EBO}$	5	-	-	V
	ST 2N2222A	$V_{(BR)EBO}$	6	-	-	V
Collector Saturation Voltage						
at $I_C=150$ mA, $I_B=15$ mA	ST 2N2222	$V_{CE(sat)}$	-	-	0.4	V
	ST 2N2222A	$V_{CE(sat)}$	-	-	0.3	V
at $I_C$ =500mA, $I_B$ =50mA	ST 2N2222	$V_{CE(sat)}$	-	-	1.6	V
	ST 2N2222A	$V_{CE(sat)}$	-	-	1	V
Base Saturation Voltage						
at $I_C=150$ mA, $I_B=15$ mA	ST 2N2222	$V_{BE(sat)}$	-	-	1.3	V
	ST 2N2222A	$V_{BE(sat)}$	0.6	-	1.2	V
at $I_C$ =500mA, $I_B$ =50mA	ST 2N2222	$V_{BE(sat)}$	-	-	2.6	V
	ST 2N2222A	$V_{BE(sat)}$	-	-	2.0	V
Gain Bandwidth Product		f	250			MHz
at I <sub>C</sub> =20mA, V <sub>CE</sub> =20V, f=100	)MHz	f <sub>T</sub>	200	-	-	IVI□∠
Collector Output Capacitance		C			8	p.E
at V <sub>CB</sub> =10V, f=1MHz		$C_ob$			0	pF
Input Capacitance		C <sub>ib</sub>	_	_	30	pF
at V <sub>CB</sub> =0.5V, f=1MHz		Oib			30	μΓ



## SEMTECH ELECTRONICS LTD.

(Subsidiary of Sino-Tech International Holdings Limited, a company listed on the Hong Kong Stock Exchange, Stock Code: 724)







Dated: 05/10/2005

1000 700 TJ=125° C 500 hFE, DC CURRENT GAIN 300 200 25°C 100 70 -55° C 50 30 VCE=1.0V VCE=10V 20 10 30 200 300 0.1 0.2 0.3 0.5 0.7 1.0 2.0 3.0 5.0 7.0 20 50 70 100 500 700 1.0 K

Figure 1. DC Current Gain



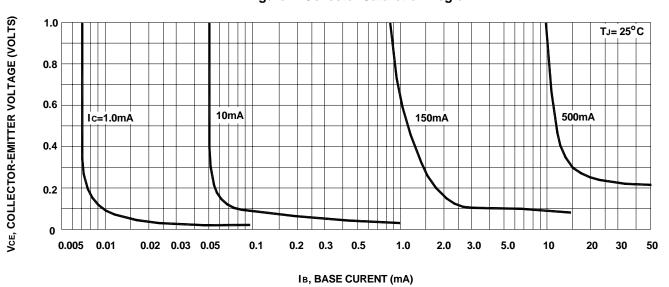


Figure 2. Collector Saturetion Region

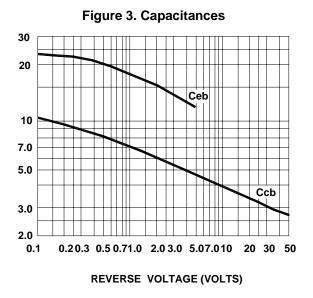


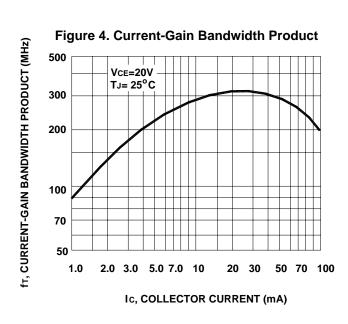
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