

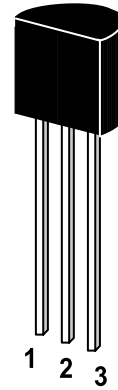
ST 2N2222 / 2N2222A

NPN Silicon Epitaxial Planar Transistor

for switching and AF amplifier applications.

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

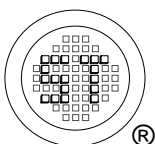


1. Emitter 2. Base 3. Collector

TO-92 Plastic Package
Weight approx. 0.19g

Absolute Maximum Ratings ($T_a = 25\text{ }^\circ\text{C}$)

	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	I_C	600		mA
Power Dissipation	P_{tot}	625		mW
Junction Temperature	T_j	150		$^\circ\text{C}$
Storage Temperature Range	T_s	-55 to +150		$^\circ\text{C}$



SEMTECH ELECTRONICS LTD.

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



ISO/TS 16949 : 2002
Certificate No. 05103



ISO 14001:2004
Certificate No. 7116



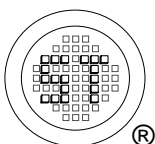
ISO 9001:2000
Certificate No. 0506098

Dated : 05/10/2005

ST 2N2222 / 2N2222A

Characteristics at $T_{amb}=25\text{ }^{\circ}\text{C}$

		Symbol	Min.	Typ.	Max.	Unit
DC Current Gain at $I_C=0.1\text{mA}$, $V_{CE}=10\text{V}$ at $I_C=1\text{mA}$, $V_{CE}=10\text{V}$ at $I_C=10\text{mA}$, $V_{CE}=10\text{V}$ at $I_C=150\text{mA}$, $V_{CE}=10\text{V}$ at $I_C=500\text{mA}$, $V_{CE}=10\text{V}$	ST 2N2222	h_{FE}	35	-	-	-
	ST 2N2222A	h_{FE}	50	-	-	-
	ST 2N2222	h_{FE}	75	-	-	-
	ST 2N2222A	h_{FE}	100	-	300	-
	ST 2N2222	h_{FE}	30	-	-	-
	ST 2N2222A	h_{FE}	40	-	-	-
Collector Cutoff Current at $V_{CB}=50\text{V}$ $V_{CB}=60\text{V}$	ST 2N2222	I_{CBO}	-	-	0.01	μA
	ST 2N2222A	I_{CBO}	-	-	0.01	μA
Collector Base Breakdown Voltage at $I_C=10\mu\text{A}$	ST 2N2222	$V_{(BR)CBO}$	60	-	-	V
	ST 2N2222A	$V_{(BR)CBO}$	75	-	-	V
Collector Emitter Breakdown Voltage at $I_C=10\text{mA}$	ST 2N2222	$V_{(BR)CEO}$	30	-	-	V
	ST 2N2222A	$V_{(BR)CEO}$	40	-	-	V
Emitter Base Breakdown Voltage at $I_E=10\mu\text{A}$	ST 2N2222	$V_{(BR)EBO}$	5	-	-	V
	ST 2N2222A	$V_{(BR)EBO}$	6	-	-	V
Collector Saturation Voltage at $I_C=150\text{mA}$, $I_B=15\text{mA}$ at $I_C=500\text{mA}$, $I_B=50\text{mA}$	ST 2N2222	$V_{CE(sat)}$	-	-	0.4	V
	ST 2N2222A	$V_{CE(sat)}$	-	-	0.3	V
	ST 2N2222	$V_{CE(sat)}$	-	-	1.6	V
	ST 2N2222A	$V_{CE(sat)}$	-	-	1	V
Base Saturation Voltage at $I_C=150\text{mA}$, $I_B=15\text{mA}$ at $I_C=500\text{mA}$, $I_B=50\text{mA}$	ST 2N2222	$V_{BE(sat)}$	-	-	1.3	V
	ST 2N2222A	$V_{BE(sat)}$	0.6	-	1.2	V
	ST 2N2222	$V_{BE(sat)}$	-	-	2.6	V
	ST 2N2222A	$V_{BE(sat)}$	-	-	2.0	V
Gain Bandwidth Product at $I_C=20\text{mA}$, $V_{CE}=20\text{V}$, $f=100\text{MHz}$		f_T	250	-	-	MHz
Collector Output Capacitance at $V_{CB}=10\text{V}$, $f=1\text{MHz}$		C_{ob}	-	-	8	pF
Input Capacitance at $V_{CB}=0.5\text{V}$, $f=1\text{MHz}$		C_{ib}	-	-	30	pF



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Figure 1. DC Current Gain

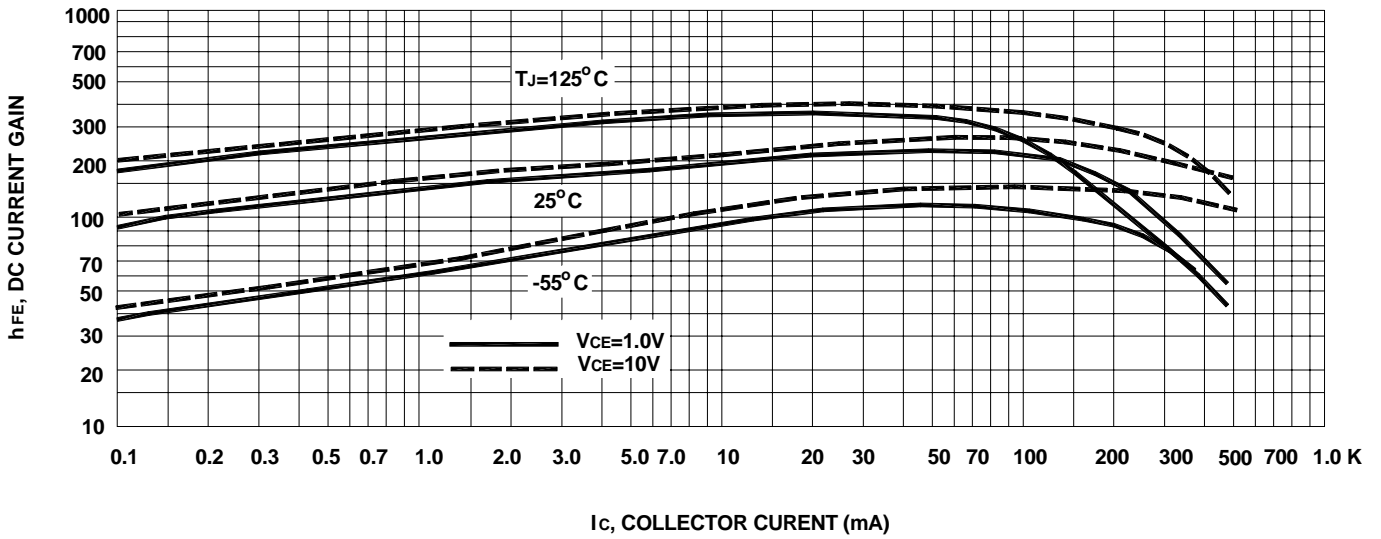
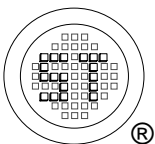
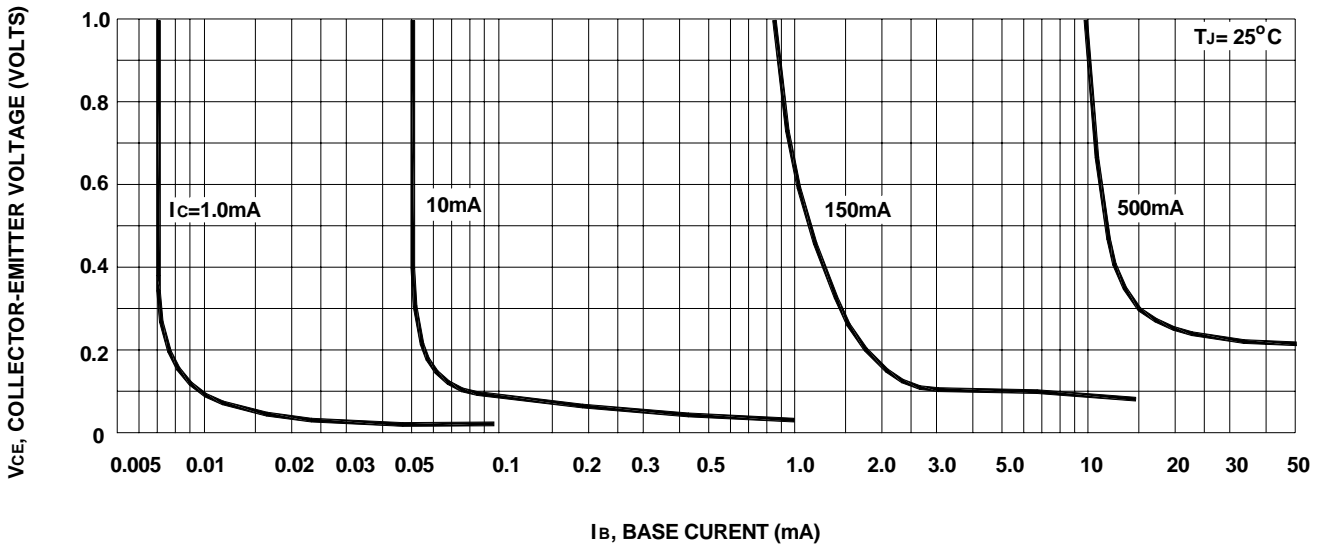
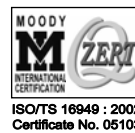


Figure 2. Collector Saturation Region



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Figure 3. Capacitances

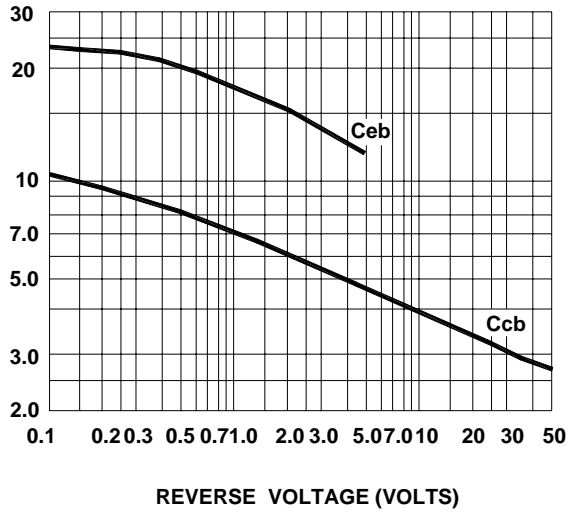
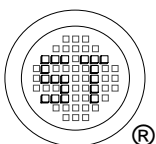
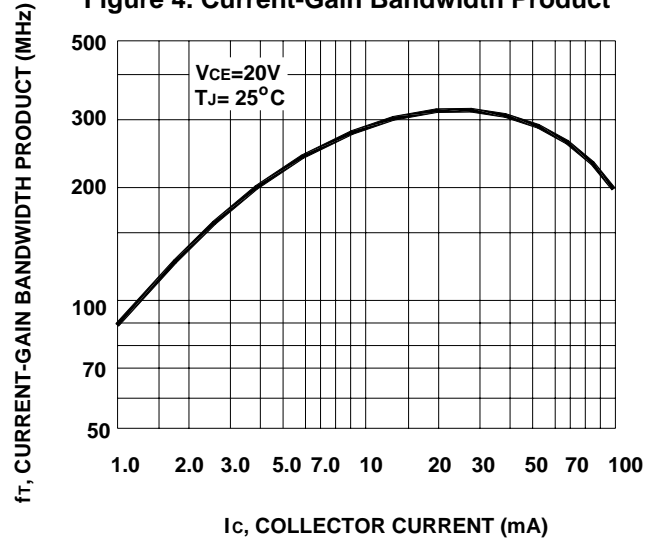


Figure 4. Current-Gain Bandwidth Product



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