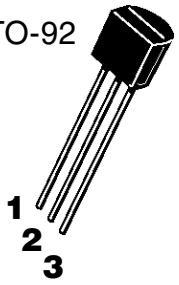
Semiconductor *Data Sheet*

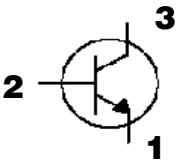
NPN General Purpose Transistor

2N2222A

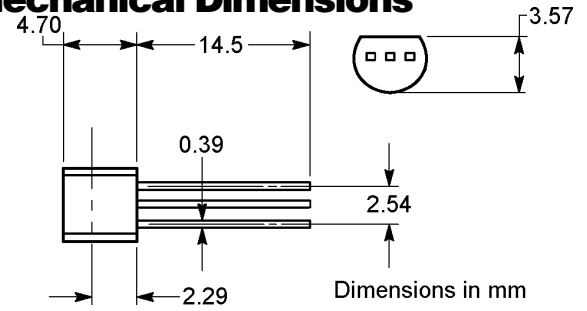
Description

TO-92





Mechanical Dimensions



Maximum Ratings

Ratings	Symbol	Value	Units
Collector - Emitter Voltage	V_{CEO}	40	V
Collector - Base Voltage	V_{CBO}	75	V
Emitter - Base Voltage	V_{EBO}	6.0	V
Collector Current (Continuous)	I_C	600	mA
Total Device Dissipation $T_A = 25^oC$	P_D	625	mW
Junction and Storage Temperature	T_J, T_{STG}	-55 to 150	^oC

Electrical Characteristics

Characteristic	Symbol	Min	Max	Unit
Collector - Emitter Breakdown Voltage (Note 3) (I_C = 10mA)	$V_{BR(CEO)}$	40	---	V
Collector - Base Breakdown Voltage (I_C = 10μA)	$V_{BR(CBO)}$	75	---	V
Emitter - Base Breakdown Voltage (I_E = 10μA)	$V_{BR(EBO)}$	6.0	---	V
Base Cutoff Current (V_{CB} = 60V)	I_{CBO}	---	10	nA
Collector Cutoff Current (V_{CE} = 60V, $V_{EB(OFF)}$ = 3.0V)	I_{CEX}	---	10	nA
Emitter Cutoff Current (V_{EB} = 3.0V)	I_{EBO}	---	10	nA
DC Current Gain	H_{FE}			---
(I_C = 0.1 mA, V_{CE} = 10 V)		35	---	
(I_C = 1.0 mA, V_{CE} = 10 V)		50	---	
(I_C = 10 mA, V_{CE} = 10 V)		75	---	
(I_C = 150 mA, V_{CE} = 10 V)		100	300	
(I_C = 500 mA, V_{CE} = 10 V)		40	---	
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$			V
(I_C = 150 mA, I_B = 15 mA)		---	0.3	
(I_C = 500 mA, I_B = 50 mA)		---	1.0	
Base - Emitter Saturation Voltage	$V_{BE(sat)}$			V
(I_C = 150 mA, I_B = 15 mA)		---	1.2	
(I_C = 500 mA, I_B = 50 mA)		---	2.0	
Current - Gain - Bandwidth Product (Note 4) (I_C = 20 mA, V_{CB} = 20 V, f = 100 MHz)	f_T	300	---	MHz

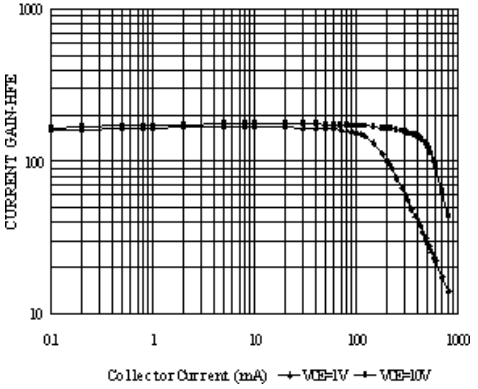
Classification of h_{FE4}

Rank	A	B
Range	100-210	190-300

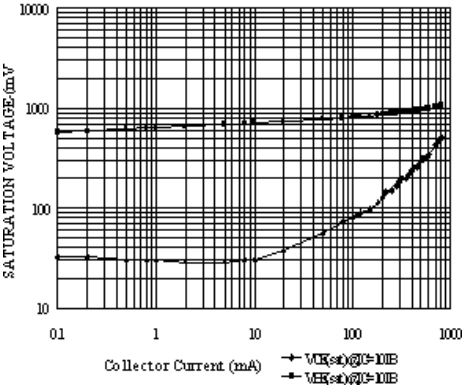
Semiconductor *Data Sheet*

2N2222A NPN General Purpose Transistor

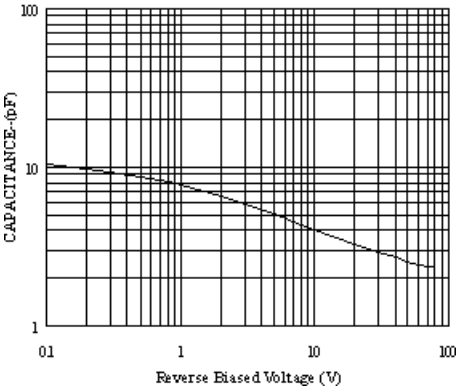
CURRENT GAINVS. COLLECTOR CURRENT



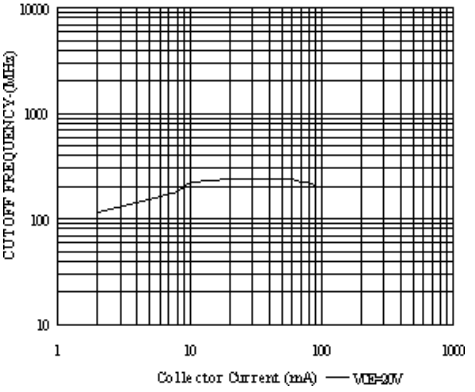
SATURATION VOLTAGE VS. COLLECTOR CURRENT



CAPACITANCE VS. REVERSE-BIASED VOLTAGE



CUTOFF FREQUENCYVS.COLLECTOR CURRENT



SAFE OPERATING AREA