Elektronische Bauelemente

2N3904

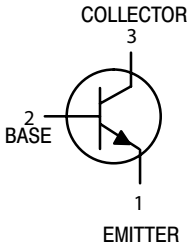
NPN Silicon

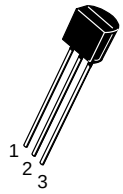
General Purpose Transistor

RoHS Compliant Product

A suffix of "-C" specifies halogen & lead-free

TO-92





●FEATURES

- Power Dissipation
  P_{CM}: 625 mW (Ta=25℃)
- Collector Current
  I_{CM}: 200 mA
- Collector - Base Voltage
  $V_{(BR)CBO}$: 60 V

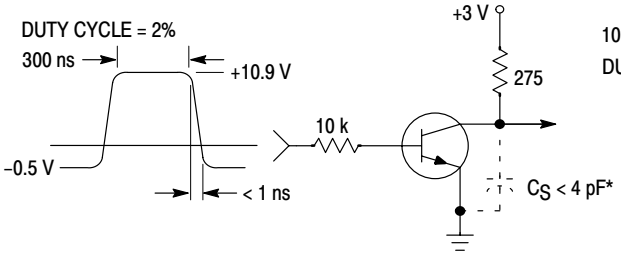
●ELECTRICAL CHARACTERISTICS (T_A = 25 ℃ unless otherwise specified)

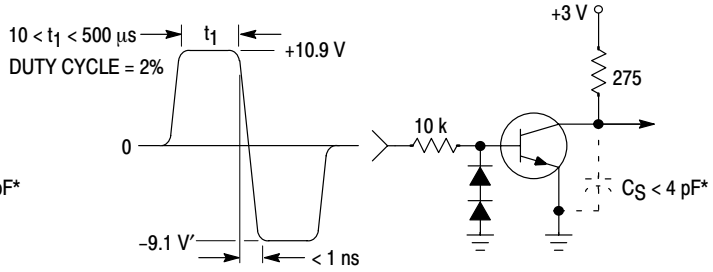
Parameter	SYMBOL	TEST CONDITIONS	Min.	Typ.	Max.	UNIT
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C = 1 mA, I_B = 0 A	40	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	I_C = 100 µA, I_E = 0 A	60	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	I_E = 100 µA, I_C = 0 A	6	-	-	V
Collector Cut-Off Current	I_{CBO}	V_{CB} = 60 V, I_E = 0 A	-	-	0.1	µA
Collector Cut-Off Current	I_{CEO}	V_{CE} = 40 V, I_B = 0 A	-	-	0.1	
Emitter Cut-Off Current	I_{EBO}	V_{EB} = 5 V, I_C = 0 A	-	-	0.1	
DC Current Gain	$h_{FE(1)}$	V_{CE} = 1 V, I_C = 10 mA	100	-	400	-
	$h_{FE(2)}$	V_{CE} = 1 V, I_C = 50 mA	60	-	-	
Collector - Emitter Saturation Voltage	$V_{CE(sat)}$	I_C = 50 mA, I_B = 5 mA	-	-	0.3	V
Base - Emitter Saturation Voltage	$V_{BE(sat)}$	I_C = 50 mA, I_B = 5 mA	-	-	0.95	V
Transition Frequency	f_T	V_{CE} = 20 V, I_C = 10 mA f = 100 MHz	300	-	-	MHz
Operating and Storage Junction Temperature Range	T_J, T_{STG}	-	-55 ~ +150			℃

●CLASSIFICATION OF $h_{FE(1)}$

Rank	O	Y	G
Rang	100 ~ 200	200 ~ 300	300 ~ 400

● TYPICAL CHARACTERISTICS

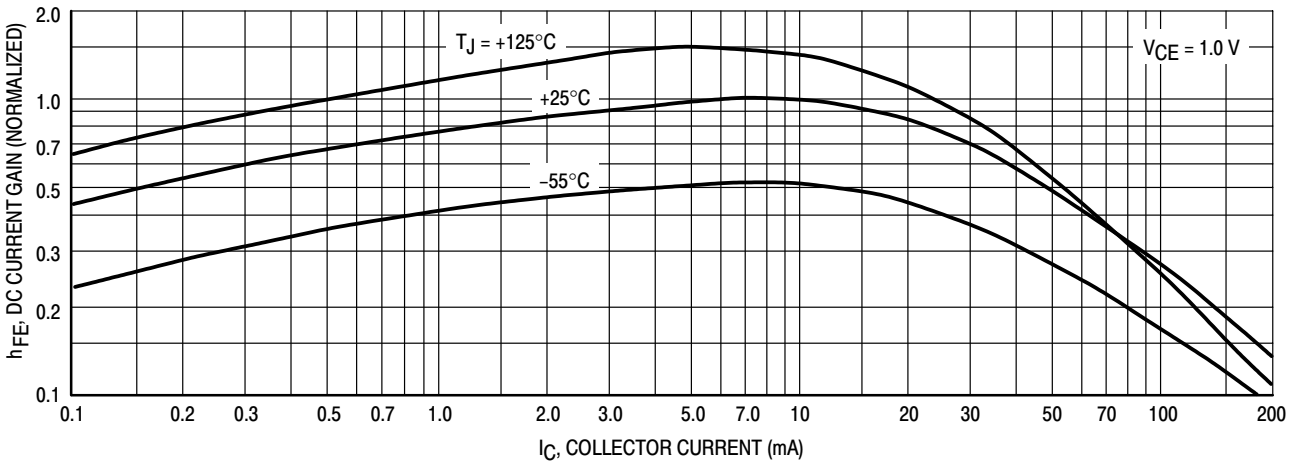




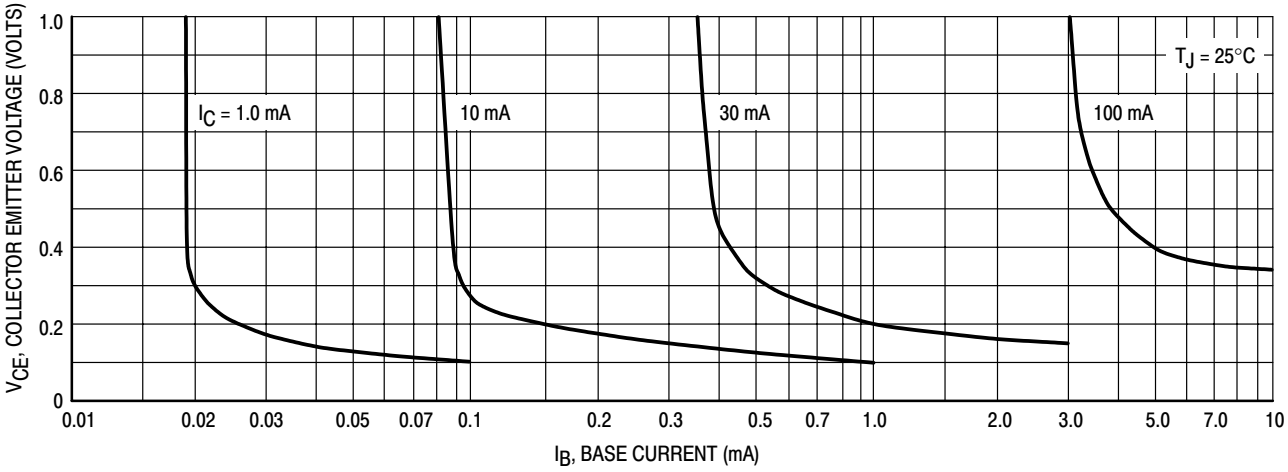
* Total shunt capacitance of test jig and connectors

Delay and Rise Time Equivalent Test Circuit

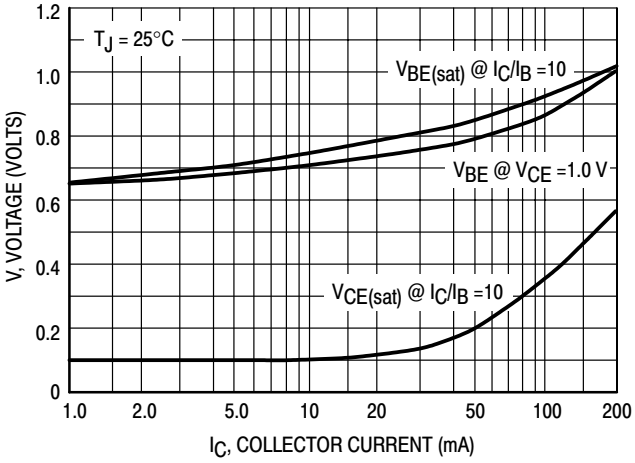
Storage and Fall Time Equivalent Test Circuit



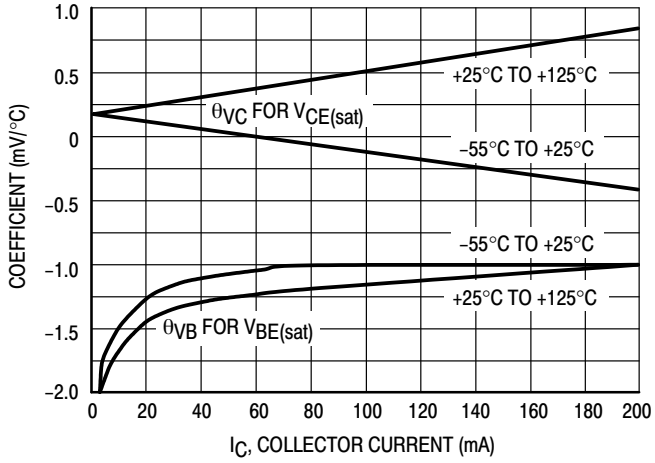
DC Current Gain



Collector Saturation Region



"ON" Voltages



Temperature Coefficients