

Descriptions

This is Silicon NPN transistor in a TO-92 Plastic Package

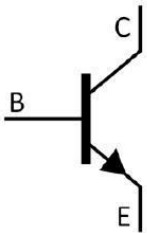
Features

- Low current
- Low voltage

Applications

General purpose amplifier

Equivalent Circuit



Pinning



PIN1: Collector PIN 2: Base PIN 3: Emitter

hFE Classifications & Marking

See Marking Instructions.

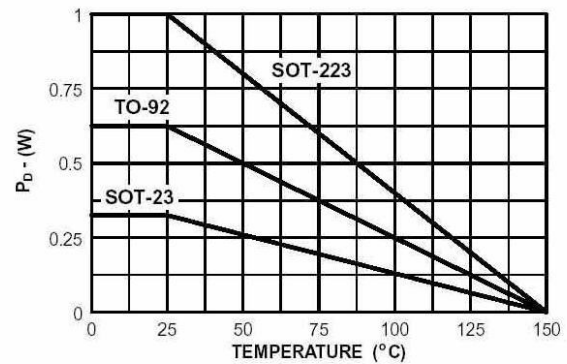
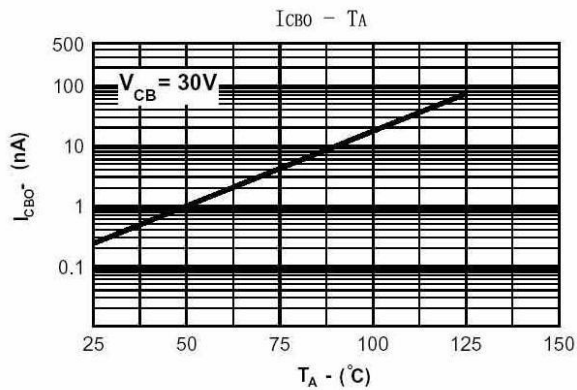
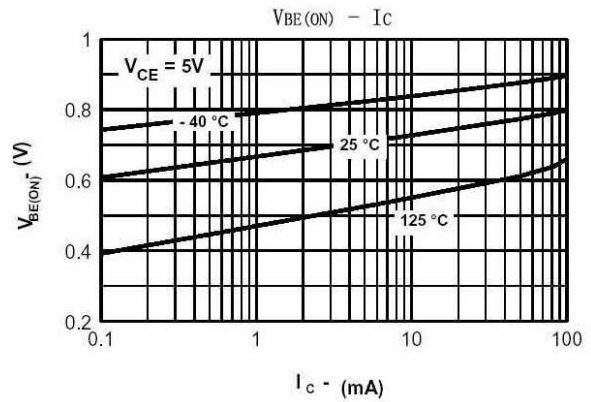
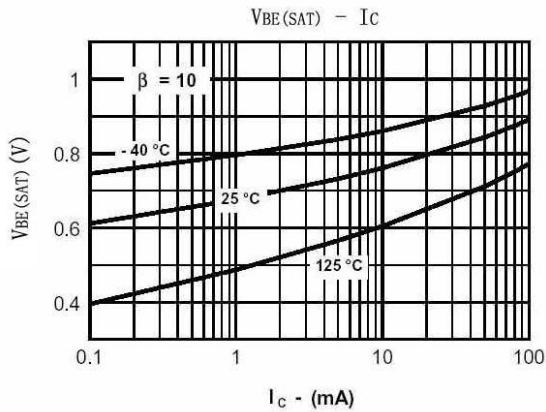
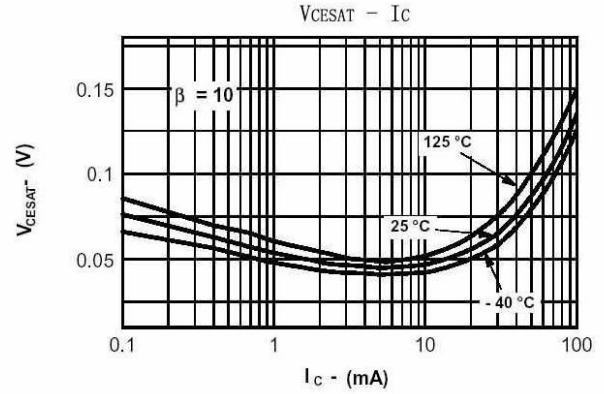
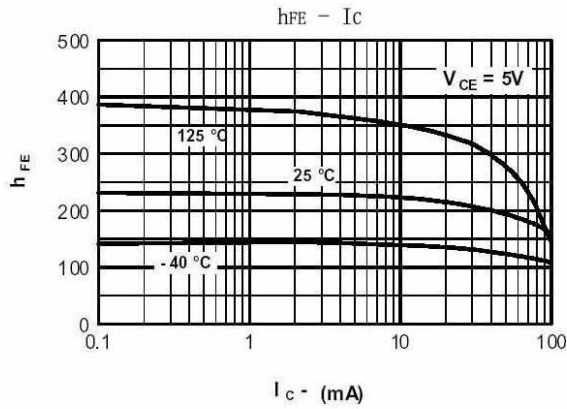
Absolute Maximum Ratings(Ta=25°C)

Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CB0}	60	V
Collector to Emitter Voltage	V_{CE0}	40	V
Emitter to Base Voltage	V_{EB0}	6.0	V
Collector Current - Continuous	I_C	200	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

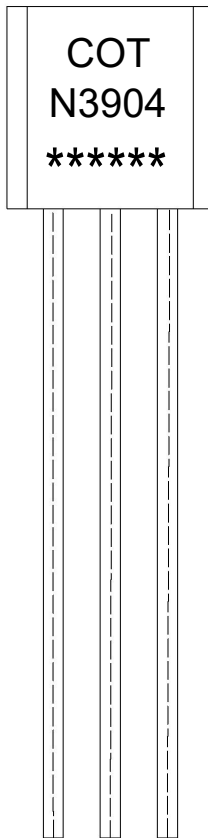
Electrical Characteristics(Ta=25°C)

Parameter	Symbol	Test Conditions		Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CB0}	$I_C=10\mu A$	$I_E=0$	60			V
Collector to Emitter Breakdown Voltage	V_{CE0}	$I_C=1.0mA$	$I_B=0$	40			V
Emitter to Base Breakdown Voltage	V_{EB0}	$I_E=10\mu A$	$I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=50V$	$I_E=0$			0.05	μA
Emitter Cut-Off Current	I_{EBO}	$V_{EB}=5.0V$	$I_C=0$			0.05	μA
DC Current Gain	$h_{FE(1)}$	$V_{CE}=1.0V$	$I_C=10mA$	100		300	
	$h_{FE(2)}$	$V_{CE}=1.0V$	$I_C=100mA$	30			
Collector to Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=50mA$	$I_B=5.0mA$			0.3	V
Base to Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=50mA$	$I_B=5.0mA$			0.95	V
Current Gain Bandwidth Product	f_T	$I_C=10mA$ $f=100MHz$	$V_{CE}=20V$	300			MHz
Output Capacitance	C_{ob}	$V_{CB}=5.0V$ $f=1.0MHz$	$I_E=0$			4.0	pF
Turn On Time	T_{on}	$V_{CC}=3.0V$ $I_C=10mA$	$V_{BE}=0.5V$ $I_{B1}=1.0mA$			0.07	μs
Turn Off Time	T_{off}	$V_{CC}=3.0V$ $I_{B1}=-I_{B2}=1.0mA$	$I_C=10mA$			0.25	μs

Electrical Characteristic Curve



Marking Instructions



Note:

COT: Company Code.

N3904: Product Type Code.

*****: *: Inner Code * : Year Code **: Week Code **: Lot Code

Packaging SPEC

BULK

Package Type	Units					Dimension (unit: mm3)		
	Units/Bag	Bags/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Bag	Inner Box	Outer Box
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

AMMO

Package Type	Units					Dimension (unit: mm3)	
	Units/tape	Tape/Inner Box	Rows/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Inner Box	Outer Box
TO-92	3,000	1	120	10	30,000	328×230×42	480×346×235, 547×407×268

Package Dimensions

TO-92

Unit: mm

