Descriptions

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

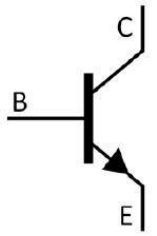
Features

- High current
- Low voltage

Applications

Medium power amplifier and switch requiring collector currents up to 500 mA.

Equivalent Circuit



Pinning

PIN1：Collector PIN 2：Base PIN 3：Emitter

hFE Classifications & Marking

See Marking Instructions.

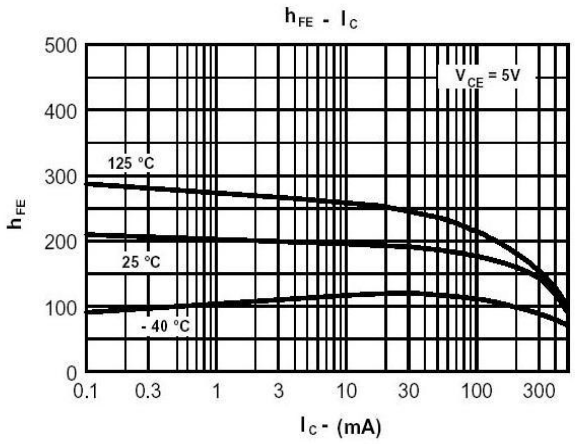
Absolute Maximum Ratings(Ta=25℃)

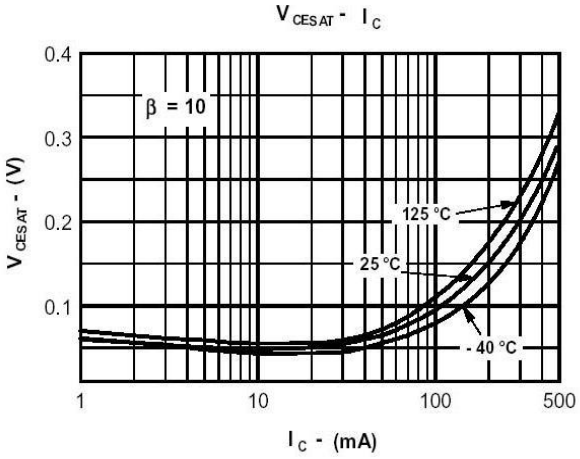
Parameter	Symbol	Rating	Unit
Collector to Base Voltage	V_{CBO}	60	V
Collector to Emitter Voltage	V_{CEO}	40	V
Emitter to Base Voltage	V_{EBO}	6.0	V
Collector Current - Continuous	I_C	600	mA
Collector Power Dissipation	P_C	625	mW
Junction Temperature	T_j	150	℃
Storage Temperature Range	T_{stg}	-55～150	℃

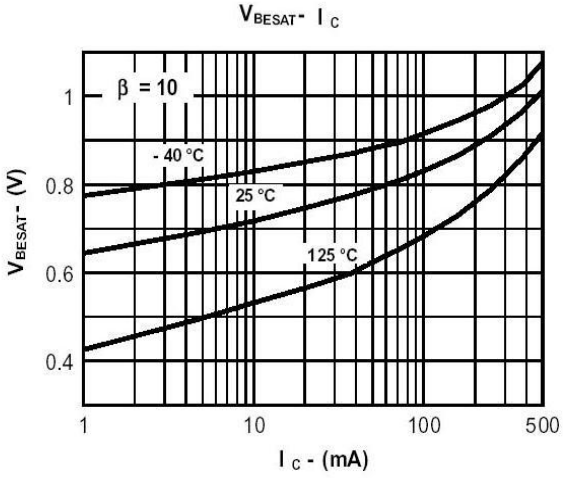
Electrical Characteristics(Ta=25℃)

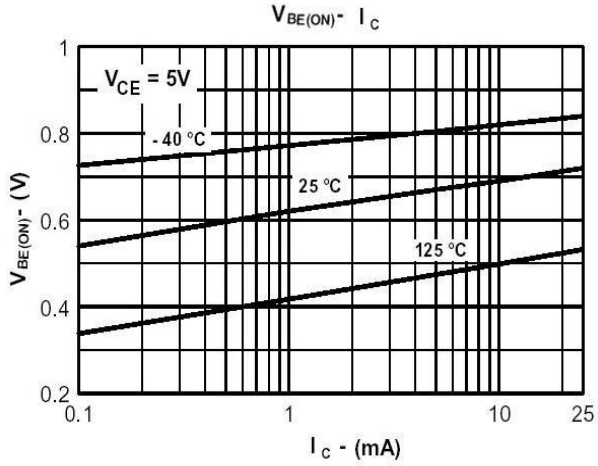
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Collector to Base Breakdown Voltage	V_{CBO}	I_C=0.1mA I_E=0	60			V
Collector to Emitter Breakdown Voltage	V_{CEO}	I_C=1.0mA I_B=0	40			V
Emitter to Base Breakdown Voltage	V_{EBO}	I_E=0.1mA I_C=0	6.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=60V I_E=0			50	nA
Emitter Cut-Off Current	I_{EBO}	V_{EB}=6.0V I_C=0			50	nA
DC Current Gain	$h_{FE(1)}$	V_{CE}=1.0V I_C=150mA	100		300	
	$h_{FE(2)}$	V_{CE}=2.0V I_C=500mA	40			
	$h_{FE(3)}$	V_{CE}=1.0V I_C=10mA	80			
	$h_{FE(4)}$	V_{CE}=1.0V I_C=1.0mA	40			
	$h_{FE(5)}$	V_{CE}=1.0V I_C=0.1mA	20			
Collector to Emitter Saturation Voltage	$V_{CE(sat)\ (1)}$	I_C=150mA I_B=15mA			0.4	V
	$V_{CE(sat)\ (2)}$	I_C=500mA I_B=50mA			0.75	V
Base to Emitter Saturation Voltage	$V_{BE(sat)\ (1)}$	I_C=150mA I_B=15mA	0.75		0.95	V
	$V_{BE(sat)\ (2)}$	I_C=500mA I_B=50mA			1.2	V
Current Gain Bandwidth Product	f_T	V_{CE}=10V I_C=20mA f=100MHz	250			MHz
Delay Time	t_d	V_{CC}=30V I_C=150mA I_{B1}=15mA			15	ns
Rise Time	t_r				20	ns
Storage Time	t_s	V_{CC}=30V I_C=150mA I_{B1}=-I_{B2}=15mA			225	ns
Fall Time	t_f				30	ns

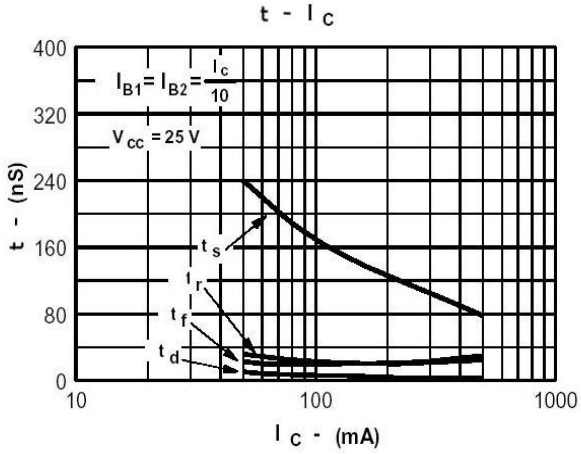
Electrical Characteristic Curve

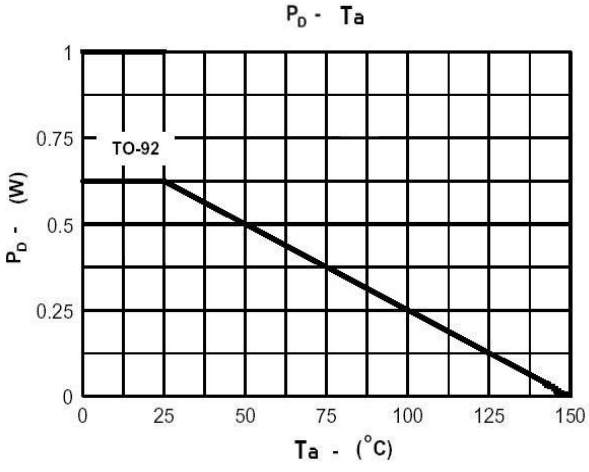




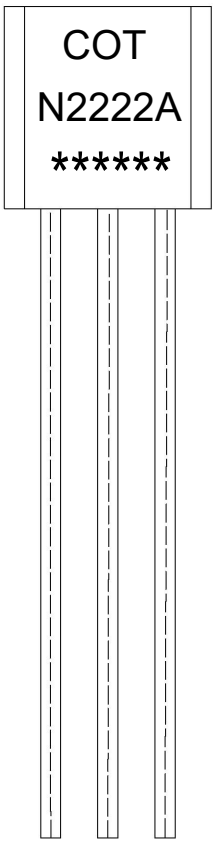








Marking Instructions



Note:

COT: Company Code.

N4401: Product Type Code.

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

Packaging SPEC

BULK

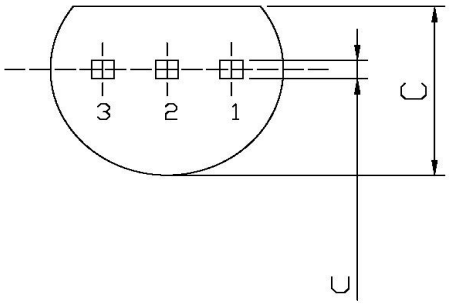
Package Type	Units					Dimension (unit：mm3)		
	Units/Bag	Bags/Inner Box	Units/Inner Box	Inner Boxes/Outer Box	Units/Outer Box	Bag	Inner Box	Outer Box
TO-92	1,000	10	10,000	5	50,000	135×190	237×172×102	560×245×195
	1,000	10	10,000	10	100,000	135×190	237×172×102	560×245×375

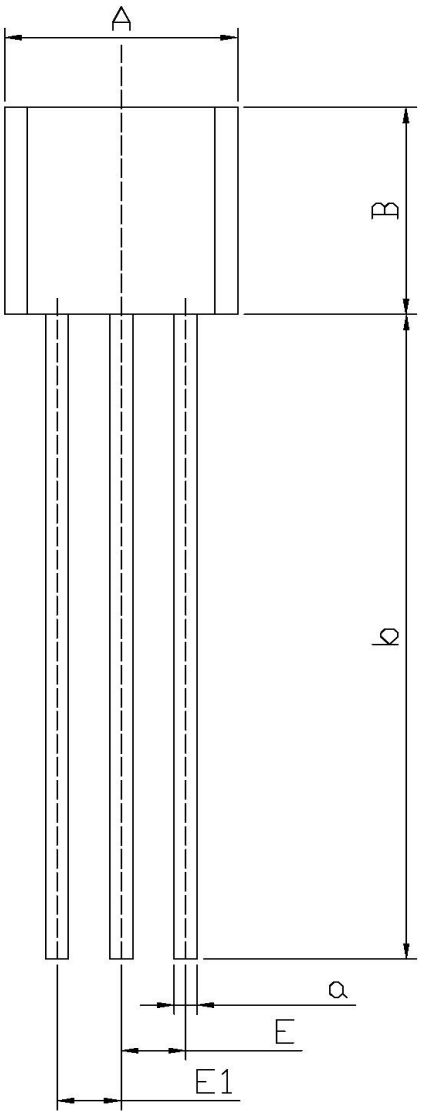
AMMO

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





Symbol	Dimensions In Millmeters	
	Min	Max
A	4.4	4.8
B	4.3	4.7
b	13	15
a	0.40	0.60
E	1.22	1.32
E1	1.22	1.32
C	3.4	3.8
c	0.30	0.50