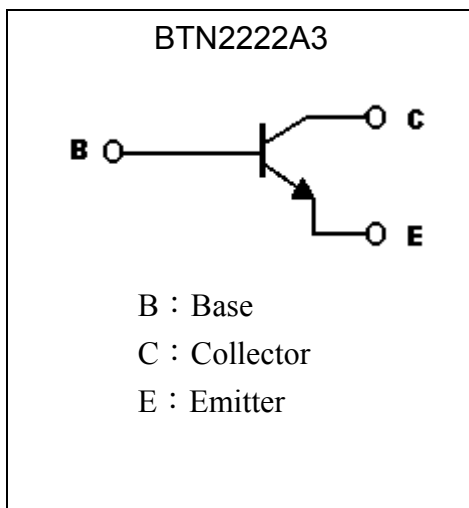
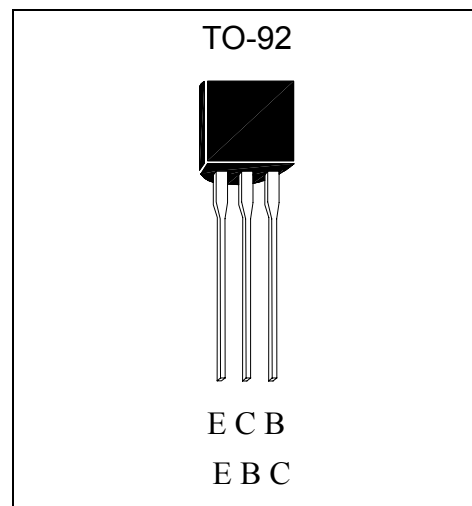


**General Purpose NPN Epitaxial Planar Transistor**

# BTN2222A3

**Description**

- Low collector output capacitance.
- High current capability
- Low leakage current
- High cutoff frequency
- Pb-free package

**Symbol**

**Outline**

**Absolute Maximum Ratings** (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V <sub>CB0</sub>	75	V
Collector-Emitter Voltage	V <sub>CEO</sub>	40	V
Emitter-Base Voltage	V <sub>EB0</sub>	6	V
Collector Current	I <sub>C</sub>	600	mA
Power Dissipation @Ta=25°C Derate above 25°C	P <sub>d</sub>	625	mW
Junction Temperature	T <sub>j</sub>	150	°C
Storage Temperature	T <sub>stg</sub>	-55~+150	°C

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CBO</sub>	75	-	-	V	I <sub>C</sub> =10 μA
BV <sub>CEO</sub>	40	-	-	V	I <sub>C</sub> =10 mA
BV <sub>EBO</sub>	6	-	-	V	I <sub>E</sub> =10 μA
I <sub>CBO</sub>	-	-	10	nA	V <sub>CB</sub> =60V
I <sub>CEX</sub>	-	-	10	nA	V <sub>CE</sub> =60V, V <sub>EB(off)</sub> =3V
I <sub>EBO</sub>	-	-	100	nA	V <sub>EB</sub> =3V
*V <sub>CE(sat)1</sub>	-	-	0.3	V	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA
*V <sub>CE(sat)2</sub>	-	-	1.0	V	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA
*V <sub>BE(sat)1</sub>	-	-	1.2	V	I <sub>C</sub> =150mA, I <sub>B</sub> =15mA
*V <sub>BE(sat)2</sub>	-	-	2.0	V	I <sub>C</sub> =500mA, I <sub>B</sub> =50mA
h <sub>FE1</sub>	35	-	-	-	V <sub>CE</sub> =10V, I <sub>C</sub> =0.1mA
h <sub>FE2</sub>	50	-	-	-	V <sub>CE</sub> =10V, I <sub>C</sub> =1mA
h <sub>FE3</sub>	75	-	-	-	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA
*h <sub>FE4</sub>	100	-	300	-	V <sub>CE</sub> =10V, I <sub>C</sub> =150mA
*h <sub>FE5</sub>	50	-	-	-	V <sub>CE</sub> =1V, I <sub>C</sub> =150mA
*h <sub>FE6</sub>	40	-	-	-	V <sub>CE</sub> =10V, I <sub>C</sub> =500mA
f <sub>T</sub>	300	-	-	MHz	V <sub>CE</sub> =20V, I <sub>C</sub> =20mA, f=100MHz
C <sub>ob</sub>	-	-	8	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz

\*Pulse Test: Pulse Width ≤380μs, Duty Cycle ≤2%

**Classification Of h<sub>FE4</sub>**

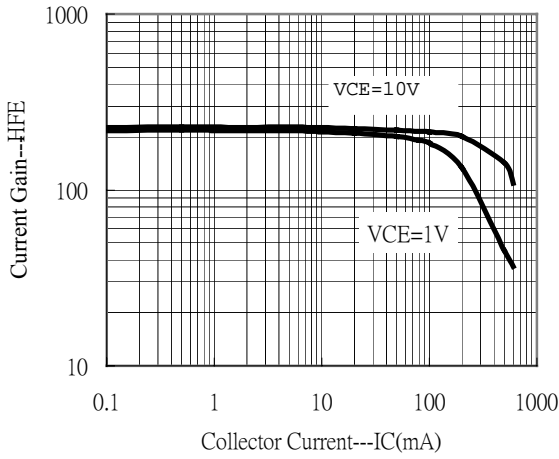
Rank	A	N	B
Range	100~180	120~270	180~300

**Ordering Information**

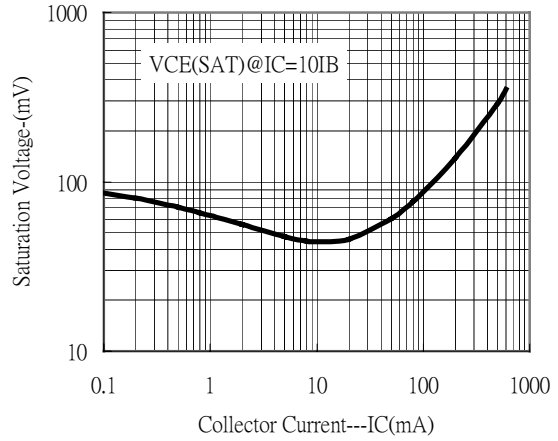
Device	Package	Shipping
BTN2222A3	TO-92 (Pb-free)	2000 pcs / Tape & Box

**Characteristic Curves**

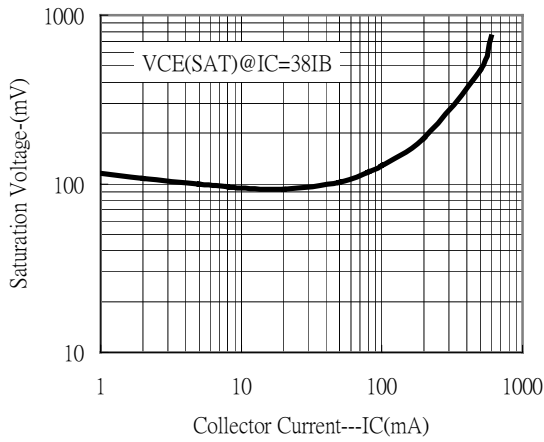
Current Gain vs Collector Current



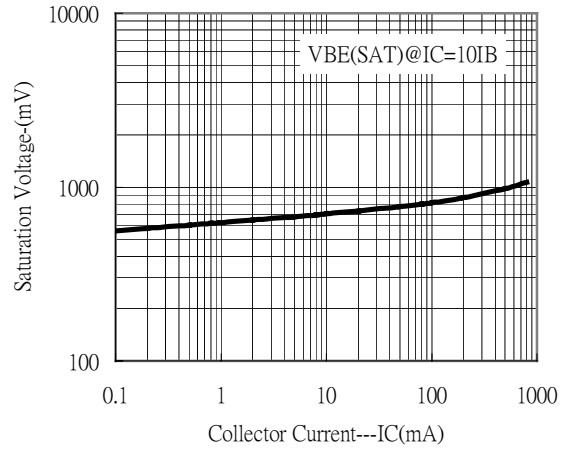
Saturation Voltage vs Collector Current



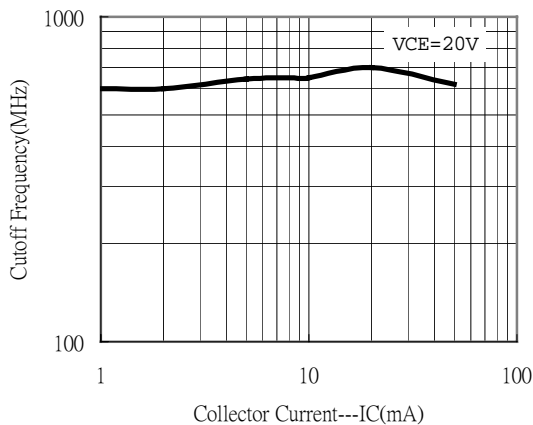
Saturation Voltage vs Collector Current



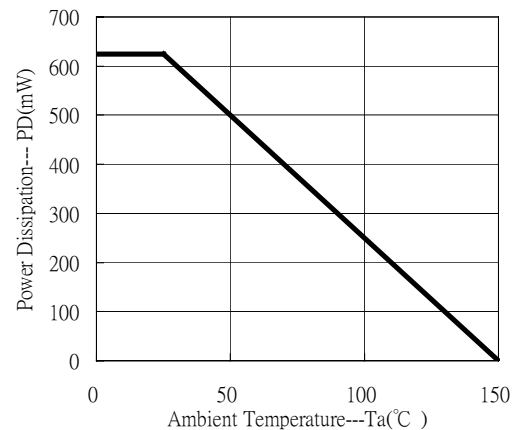
Saturation Voltage vs Collector Current



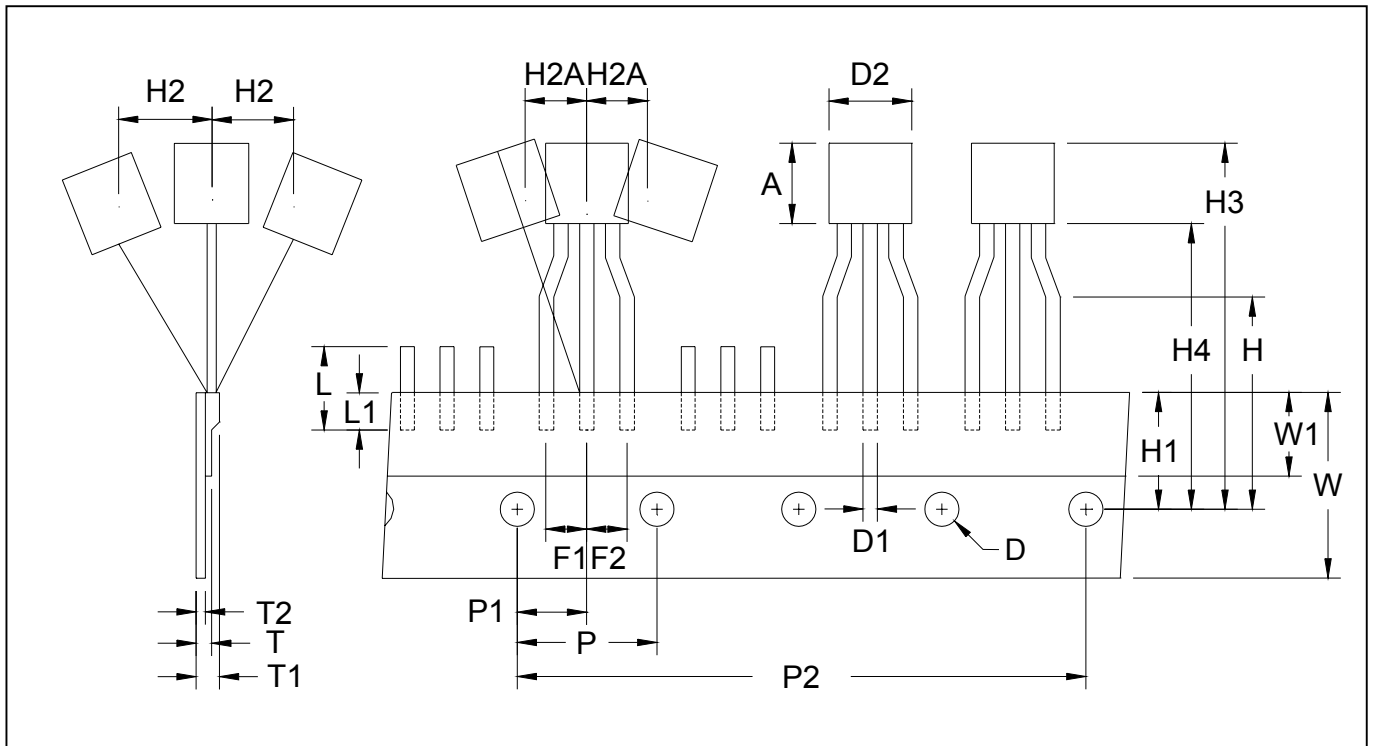
Cutoff Frequency vs Collector Current



Power Derating Curve

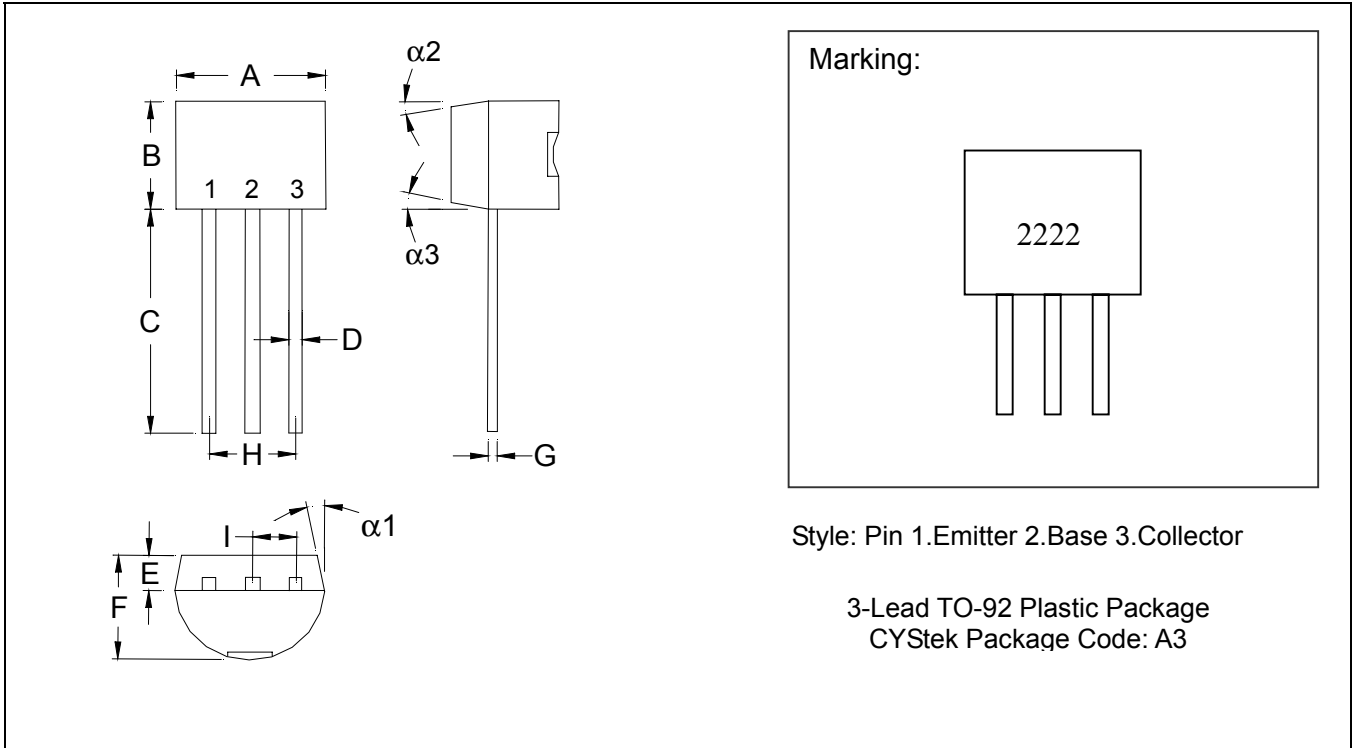


**TO-92 Taping Outline**



DIM	Item	Millimeters	
		Min.	Max.
A	Component body height	4.33	4.83
D	Tape Feed Diameter	3.80	4.20
D1	Lead Diameter	0.36	0.53
D2	Component Body Diameter	4.33	4.83
F1,F2	Component Lead Pitch	2.40	2.90
F1,F2	F1-F2	-	±0.3
H	Height Of Seating Plane	15.50	16.50
H1	Feed Hole Location	8.50	9.50
H2	Front To Rear Deflection	-	1
H2A	Deflection Left Or Right	-	1
H3	Component Height	-	27
H4	Feed Hole To Bottom Of Component	-	21
L	Lead Length After Component Removal	-	11
L1	Lead Wire Enclosure	2.50	-
P	Feed Hole Pitch	12.50	12.90
P1	Center Of Seating Plane Location	5.95	6.75
P2	4 Feed Hole Pitch	50.30	51.30
T	Over All Tape Thickness	-	0.55
T1	Total Taped Package Thickness	-	1.42
T2	Carrier Tape Thickness	0.36	0.68
W	Tape Width	17.50	19.00
W1	Adhesive Tape Width	5.00	7.00
-	20 pcs Pitch	253	255

**TO-92 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1704	0.1902	4.33	4.83	G	0.0142	0.0220	0.36	0.56
B	0.1704	0.1902	4.33	4.83	H	-	*0.1000	-	*2.54
C	0.5000	-	12.70	-	I	-	*0.0500	-	*1.27
D	0.0142	0.0220	0.36	0.56	$\alpha 1$	-	*5°	-	*5°
E	-	*0.0500	-	*1.27	$\alpha 2$	-	*2°	-	*2°
F	0.1323	0.1480	3.36	3.76	$\alpha 3$	-	*2°	-	*2°

**Notes:** 1. Controlling dimension: millimeters.  
 2. Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.  
 3. If there is any question with packing specification or packing method, please contact your local CYStek sales office.

**Material:**

- Lead: 42 Alloy ; solder plating
- Mold Compound: Epoxy resin family, flammability solid burning class: UL94V-0

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