

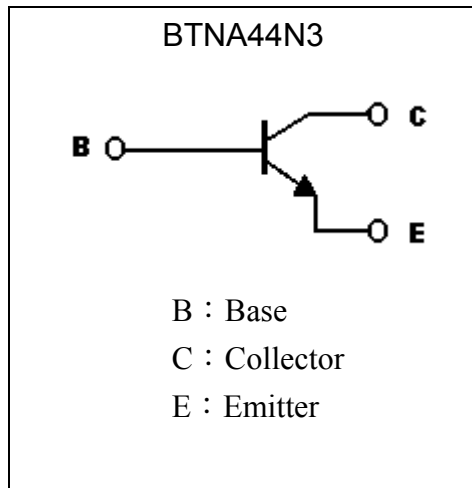
**High Voltage NPN Epitaxial Planar Transistor**

# BTNA44N3

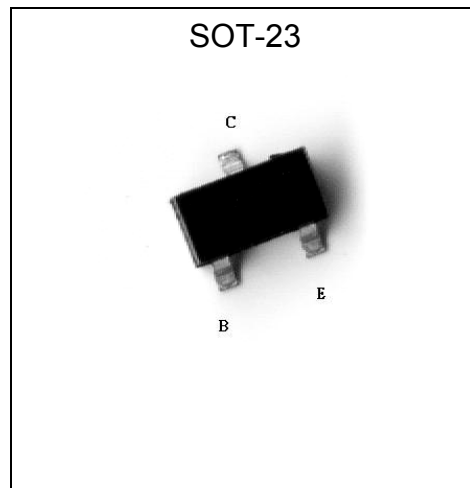
**Features**

- High breakdown voltage. ( $BV_{CEO} = 400V$ )
- Low saturation voltage, typically  $V_{CE(sat)} = 0.1V$  at  $I_C/I_B = 10mA/1mA$ .
- Complementary to BTPA94N3

**Symbol**



**Outline**



**Absolute Maximum Ratings** ( $T_a = 25^\circ C$ )

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	$V_{CB0}$	400	V
Collector-Emitter Voltage	$V_{CEO}$	400	V
Emitter-Base Voltage	$V_{EB0}$	6	V
Collector Current	$I_C$	300	mA
Power Dissipation	$P_d$	225 (Note)	mW
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	556	$^\circ C/W$
Junction Temperature	$T_j$	150	$^\circ C$
Storage Temperature	$T_{stg}$	-55~+150	$^\circ C$

Note : When mounted on a FR-5 board with area measuring 1.0×0.75×0.062 in.

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
$BV_{CBO}$	400	-	-	V	$I_C=50\mu A, I_E=0$
$BV_{CEO}$	400	-	-	V	$I_C=1mA, I_B=0$
$BV_{EBO}$	6	-	-	V	$I_E=50\mu A, I_C=0$
$I_{CBO}$	-	-	10	$\mu A$	$V_{CB}=400V, I_E=0$
$I_{EBO}$	-	-	10	$\mu A$	$V_{EB}=6V, I_C=0$
$V_{CE(sat) 1}$	-	-	0.4	V	$I_C=1mA, I_B=0.1mA$
* $V_{CE(sat) 2}$	-	0.1	0.5	V	$I_C=10mA, I_B=1mA$
* $V_{CE(sat) 3}$	-	-	0.75	V	$I_C=50mA, I_B=5mA$
* $V_{BE(sat)}$	-	-	1.5	V	$I_C=10mA, I_B=1mA$
$h_{FE 1}$	40	-	-	-	$V_{CE}=10V, I_C=1mA$
$h_{FE 2}$	52	-	270	-	$V_{CE}=10V, I_C=10mA$
* $h_{FE 3}$	45	-	-	-	$V_{CE}=10V, I_C=50mA$
* $h_{FE 4}$	40	-	-	-	$V_{CE}=10V, I_C=100mA$
$f_T$	20	-	-	MHz	$V_{CE}=10V, I_C=10mA, f=100MHz$
Cob	-	-	7	pF	$V_{CB}=20V, f=1MHz$

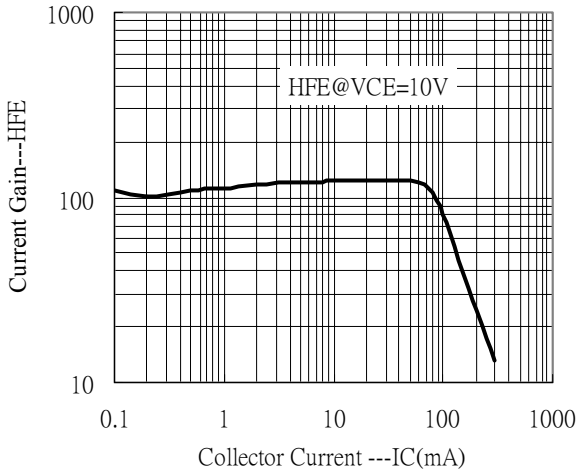
\*Pulse Test : Pulse Width  $\leq 380\mu s$ , Duty Cycle  $\leq 2\%$ **Classification Of  $h_{FE2}$** 

Rank	K	P	Q
Range	52~120	82~180	120~270

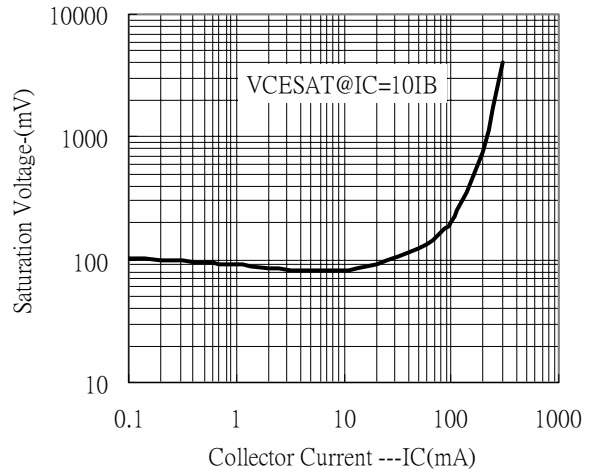


### Characteristic Curves

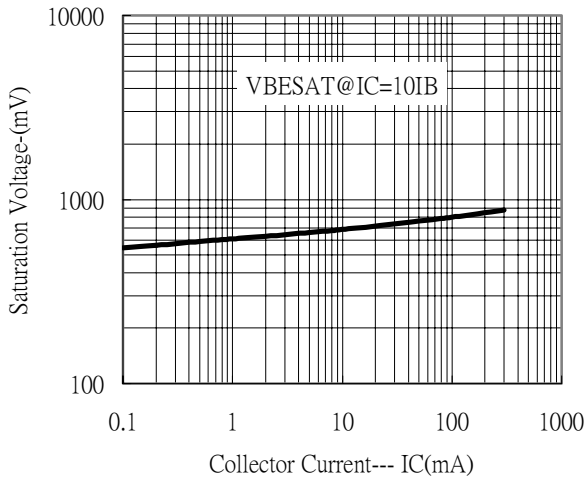
Current Gain vs Collector Current



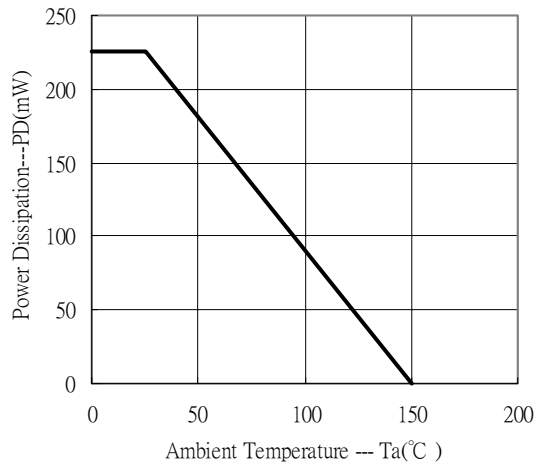
Saturation Voltage vs Collector Current



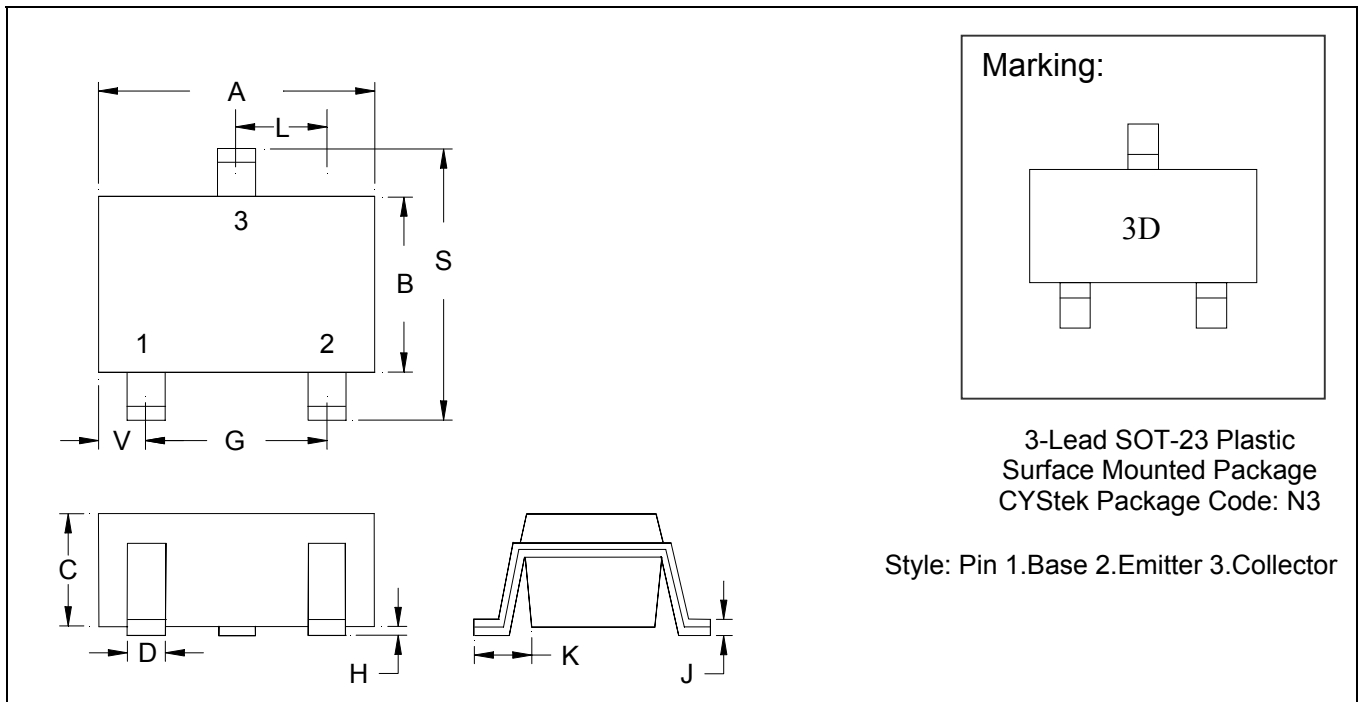
Saturation Voltage vs Collector Current



Power Derating Curve



**SOT-23 Dimension**



\*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1102	0.1204	2.80	3.04	J	0.0034	0.0070	0.085	0.177
B	0.0472	0.0630	1.20	1.60	K	0.0128	0.0266	0.32	0.67
C	0.0335	0.0512	0.89	1.30	L	0.0335	0.0453	0.85	1.15
D	0.0118	0.0197	0.30	0.50	S	0.0830	0.1083	2.10	2.75
G	0.0669	0.0910	1.70	2.30	V	0.0098	0.0256	0.25	0.65
H	0.0005	0.0040	0.013	0.10					

- Notes:**
- Controlling dimension: millimeters.
  - Maximum lead thickness includes lead finish thickness, and minimum lead thickness is the minimum thickness of base material.
  - 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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