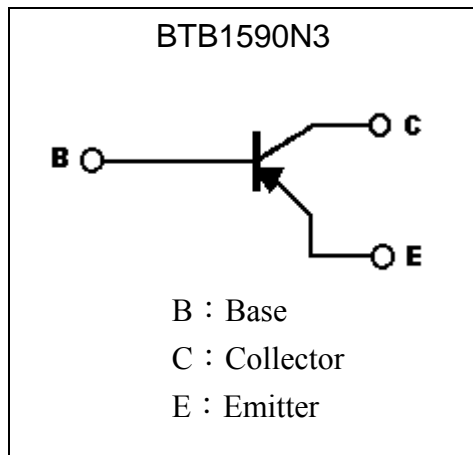
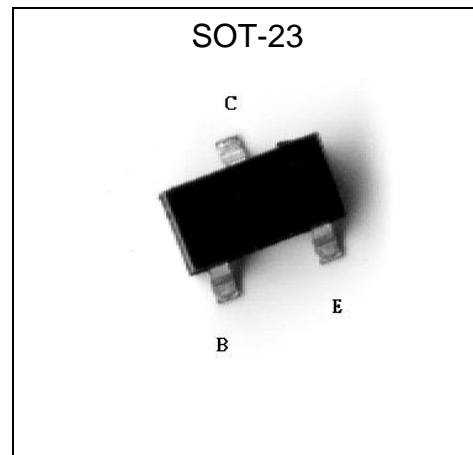


Low $V_{CE(SAT)}$ PNP Epitaxial Planar Transistor

BTB1590N3

Features

- Low $V_{CE(SAT)}$, $V_{CE(SAT)} = -0.18V$ (typically) at $I_C = -500mA / I_B = -50mA$.
- Complementary to BTB2444N3.
- Pb-free package

Symbol

Outline

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

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	-40	V
Collector-Emitter Voltage	V_{CEO}	-25	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-1	A
Power Dissipation	P_d	225	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	$^\circ C$

**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	-40	-	-	V	$I_C=-50\mu A, I_E=0$
BV_{CEO}	-25	-	-	V	$I_C=-1mA, I_B=0$
BV_{EBO}	-6	-	-	V	$I_E=-50\mu A, I_C=0$
I_{CBO}	-	-	-100	nA	$V_{CB}=-35V, I_E=0$
I_{EBO}	-	-	-100	nA	$V_{EB}=-6V, I_C=0$
* $V_{CE(sat)1}$	-	-	-0.3	V	$I_C=-400mA, I_B=-20mA$
* $V_{CE(sat)2}$	-	-0.18	-0.4	V	$I_C=-500mA, I_B=-50mA$
* $V_{CE(sat)3}$	-	-	-0.5	V	$I_C=-800mA, I_B=-80mA$
$V_{BE(ON)}$	-	-	-1	V	$V_{CE}=-1V, I_C=-10mA$
* h_{FE1}	120	-	560	-	$V_{CE}=-3V, I_C=-100mA$
* h_{FE2}	80	-	-	-	$V_{CE}=-3V, I_C=-800mA$
f_T	-	150	-	MHz	$V_{CE}=-5V, I_C=-50mA, f=100MHz$
Cob	-	15	-	pF	$V_{CB}=-10V, f=1MHz$

*Pulse Test: Pulse Width $\leq 380\mu s$, Duty Cycles $\leq 2\%$ **Classification Of h_{FE1}**

Rank	Q	R	S
Range	120~270	180~390	270~560

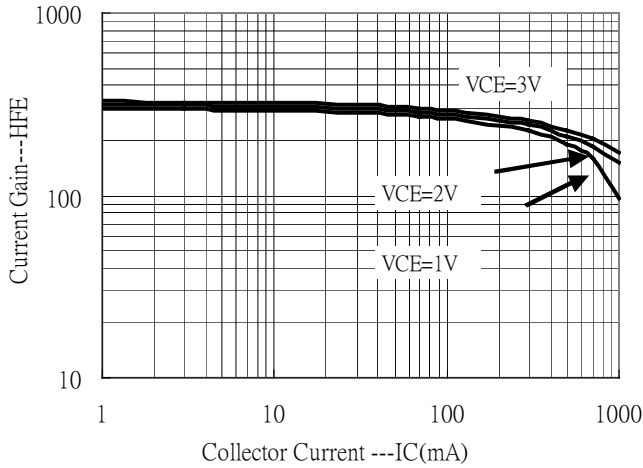
Ordering Information

Device	Package	Shipping	Marking
BTB1590N3	SOT-23 (Pb-free)	3000 pcs / Tape & Reel	BK

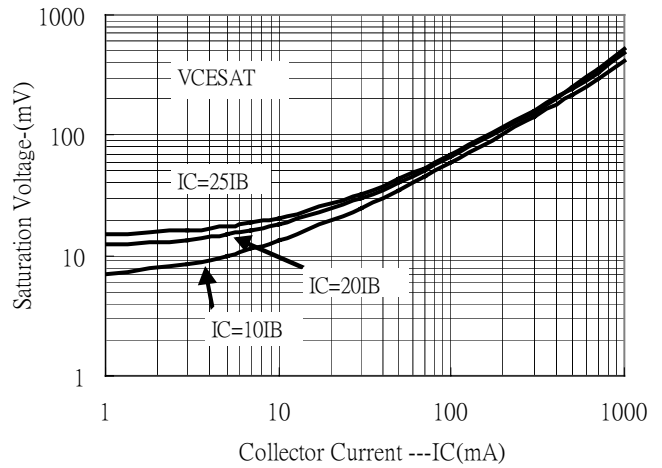


Characteristic Curves

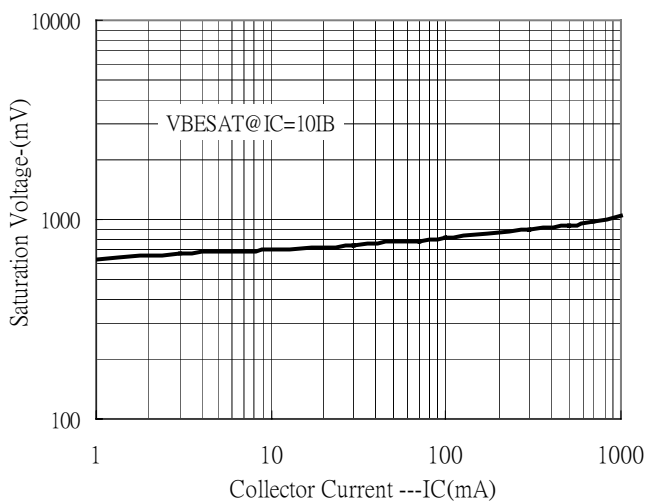
Current Gain vs Collector Current



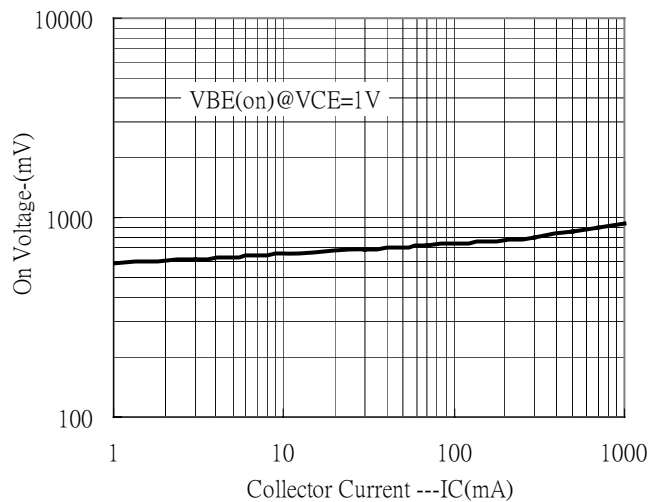
Saturation Voltage vs Collector Current



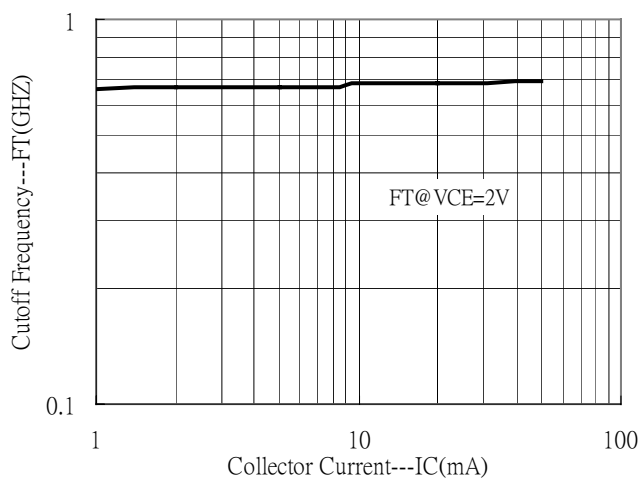
Saturation Voltage vs Collector Current



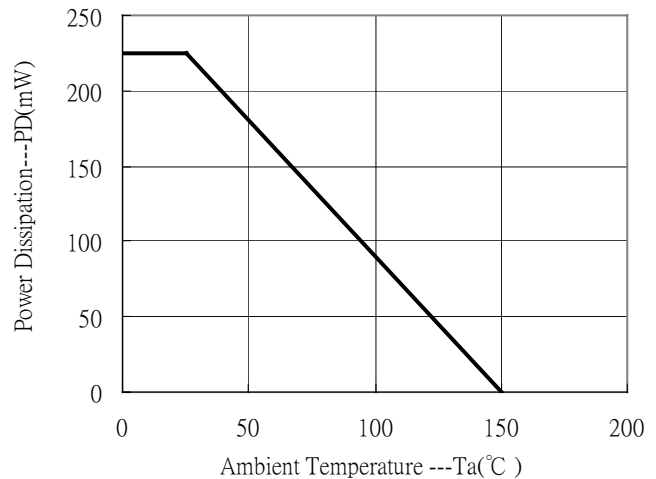
On Voltage vs Collector Current



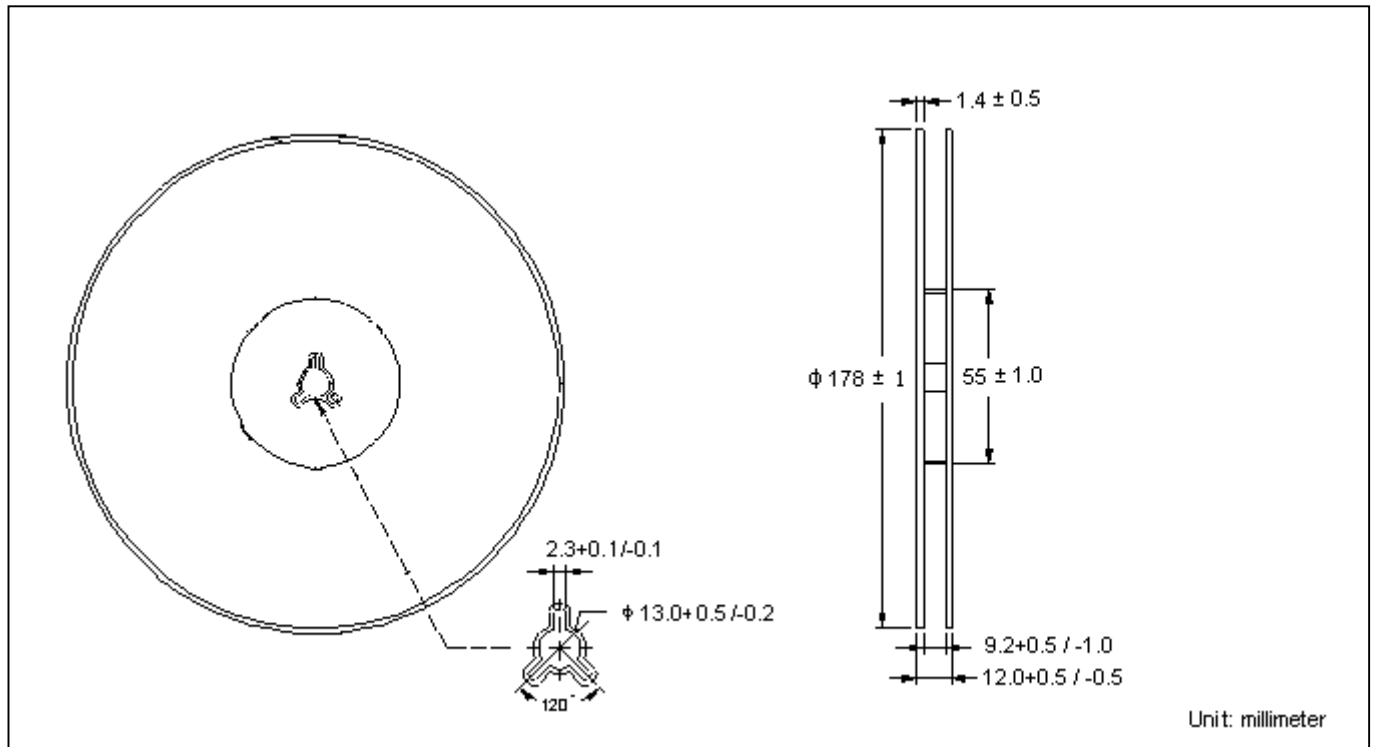
Cutoff Frequency vs Collector Current



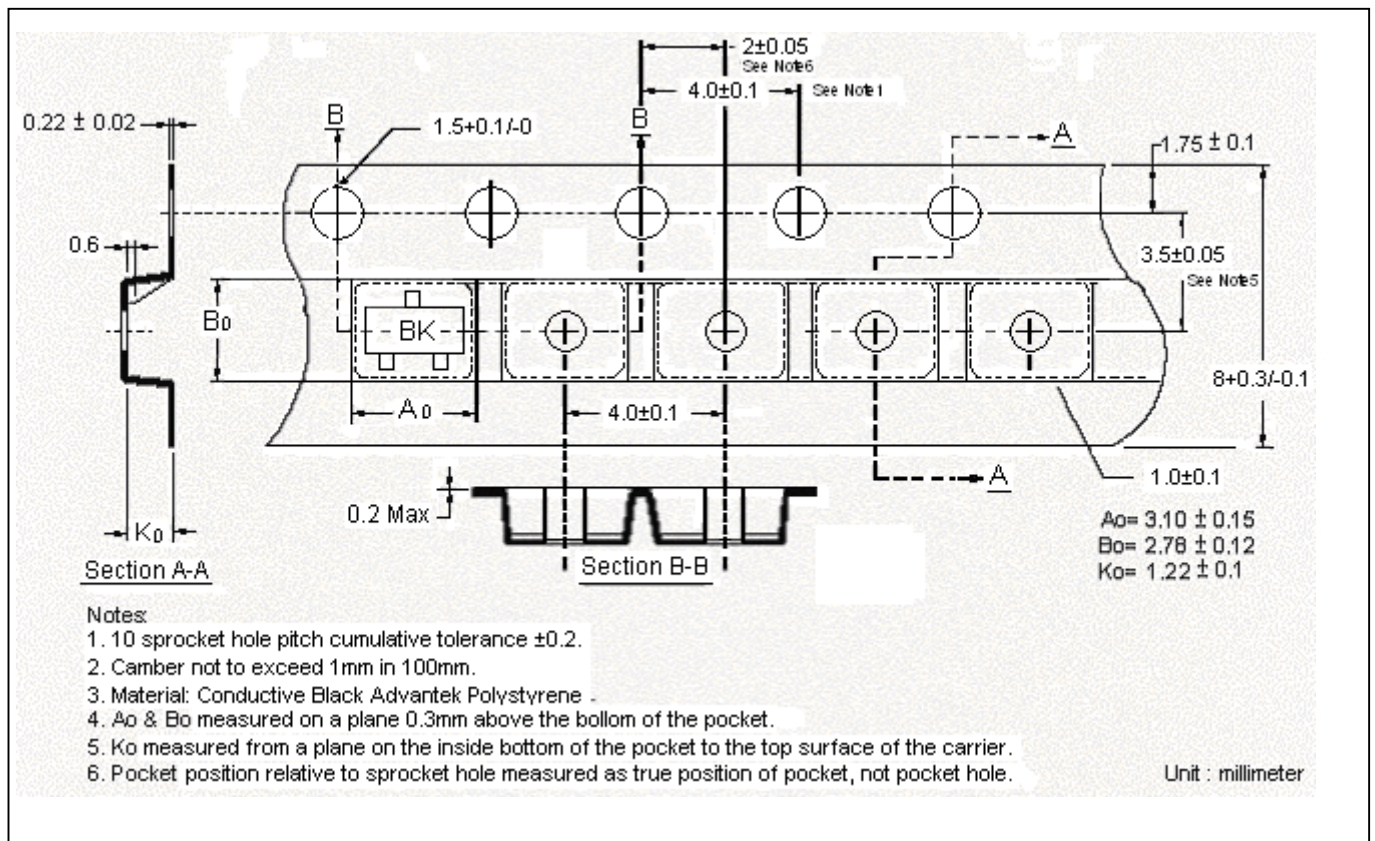
Power Derating Curve



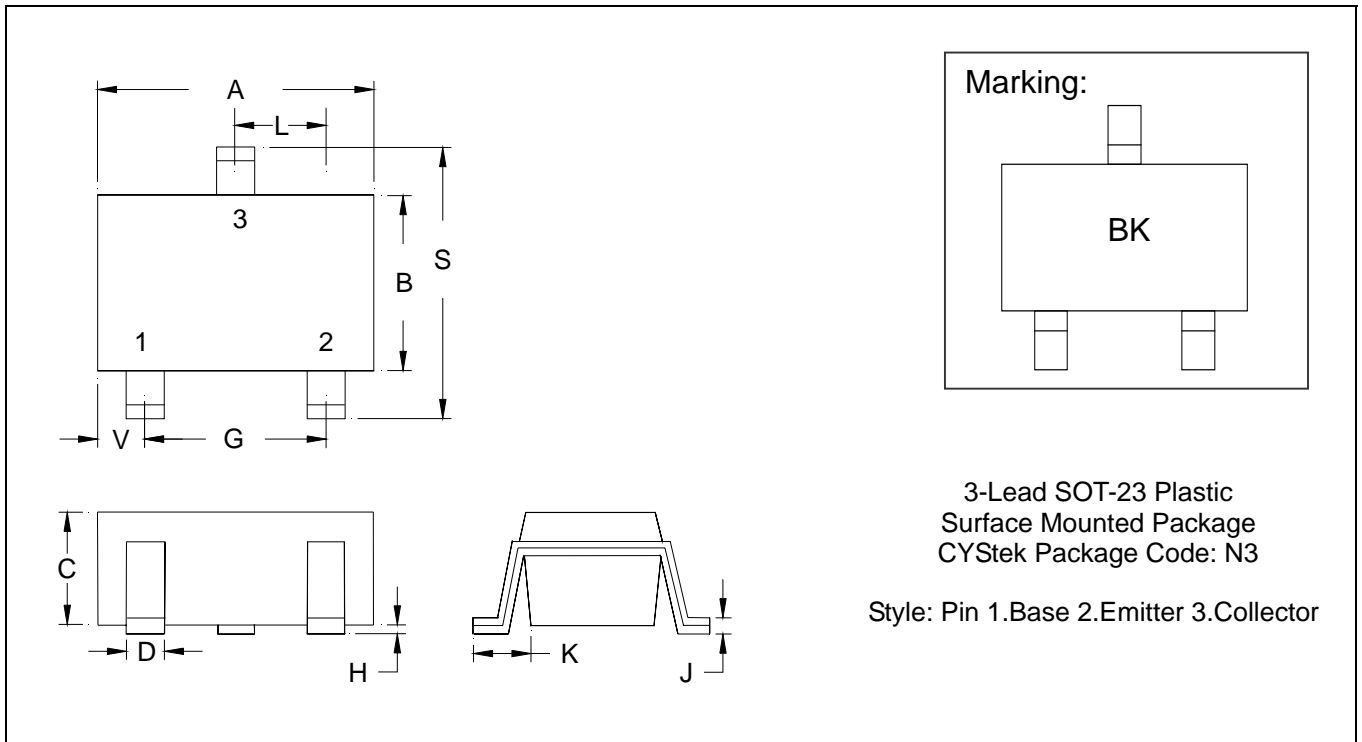
Reel Dimension



Carrier Tape Dimension



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: 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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