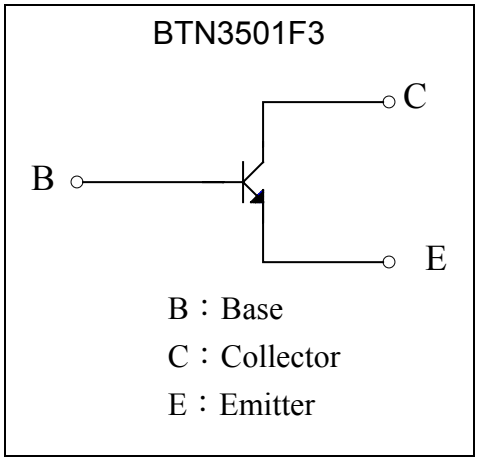
Low Vcesat NPN Epitaxial Planar Transistor

BTN3501F3

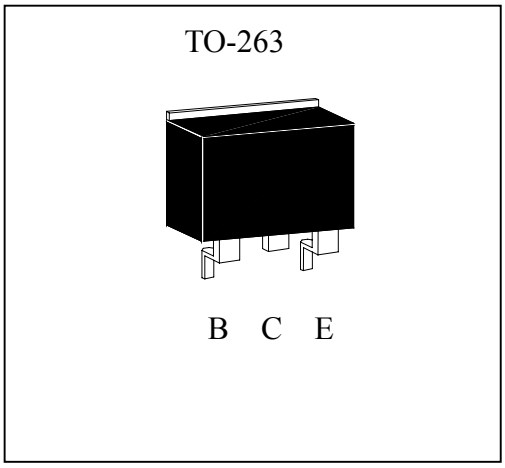
Features

- Low $V_{CE(sat)}$
- High BV_{CEO}
- Excellent current gain characteristics
- Pb-free package

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	80	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current (DC)	I_C	10	A
Collector Current (Pulse)	I_{CP}	20 (Note 1)	
Power Dissipation @ T_A=25℃	P_D	2	W
Power Dissipation @ T_C=25℃		60	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	°C/W
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.08	°C/W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : 1. Single Pulse , Pw≦380μs,Duty≦2%.

Characteristics (Ta=25°C)

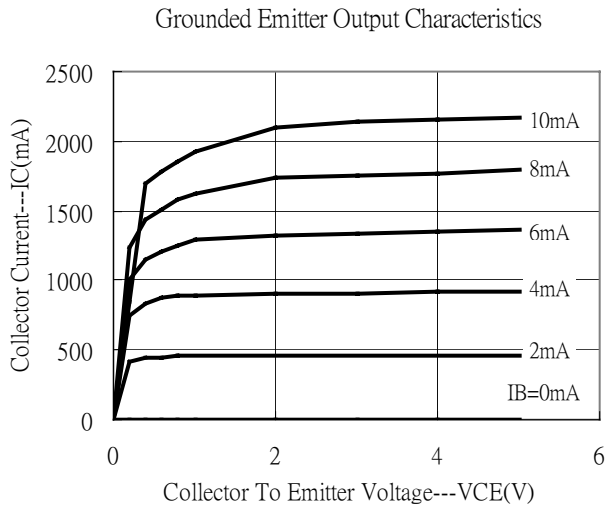
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
$BV_{CEO(SUS)}$	80	-	-	V	I_C=30mA, I_B=0
I_{CES}	-	-	10	μA	V_{CE}=80V, V_{BE}=0
I_{EBO}	-	-	50	μA	V_{EB}=5V, I_C=0
*$V_{CE(sat)}$	-	0.3	0.6	V	I_C=8A, I_B=0.4A
*$V_{BE(sat)}$	-	1.0	1.5	V	I_C=8A, I_B=0.8A
*h_{FE}	60	-	-	-	V_{CE}=1V, I_C=2A
*h_{FE}	40	-	-	-	V_{CE}=1V, I_C=4A
f_T	-	50	-	MHz	V_{CE}=6V, I_C=500mA, f=20MHz
Cob	-	130	-	pF	V_{CB}=10V, f=1MHz

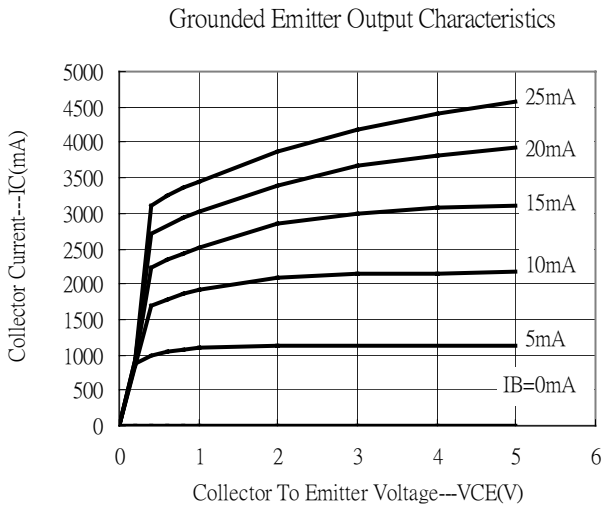
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Ordering Information

Device	Package	Shipping	Marking
BTN3501F3	TO-263 (Pb-free)	800 pcs / Tape & Reel	N3501

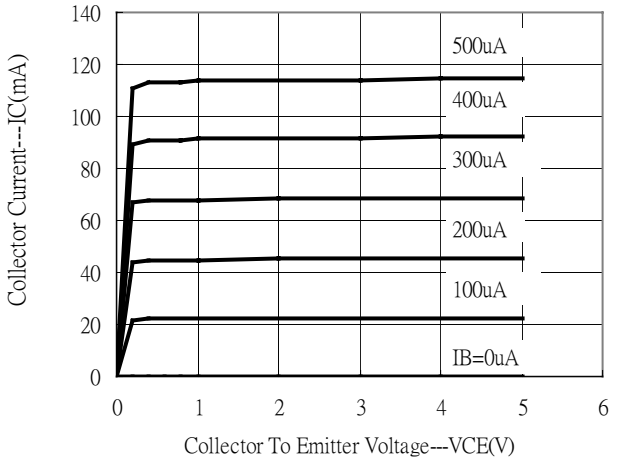
Characteristic Curves



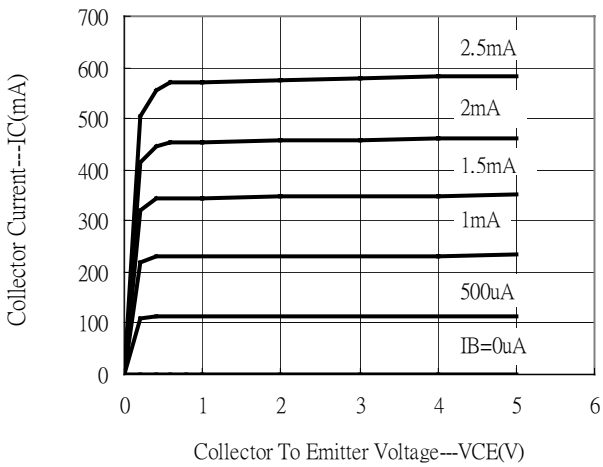


Characteristic Curves(Cont.)

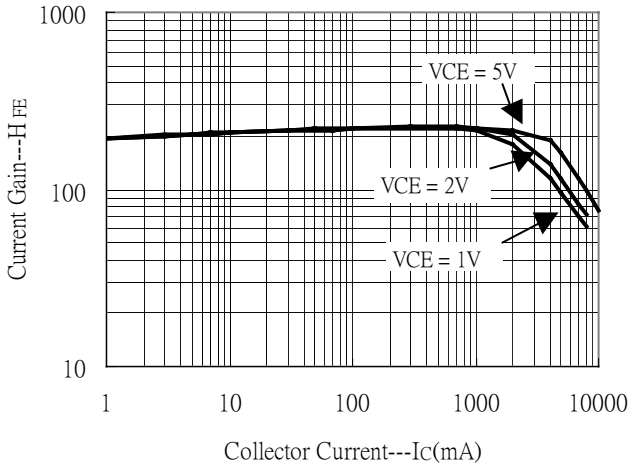
Grounded Emitter Output Characteristics



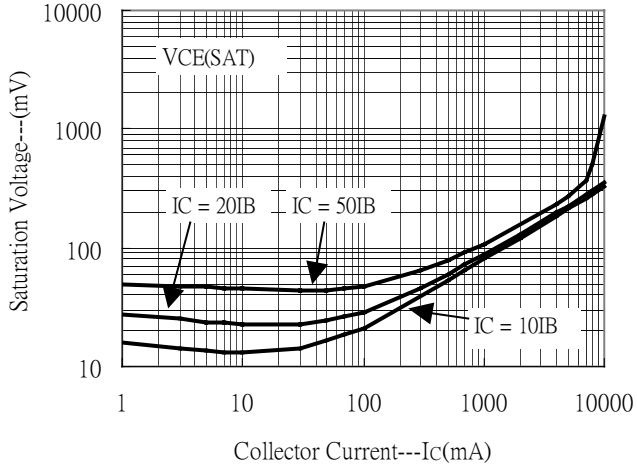
Grounded Emitter Output Characteristics



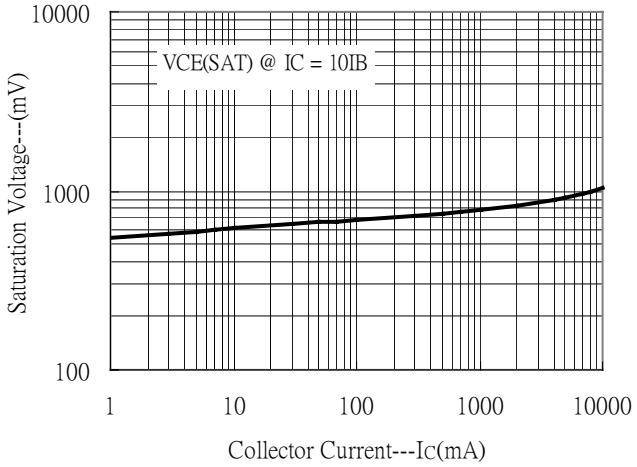
Current Gain vs Collector Current



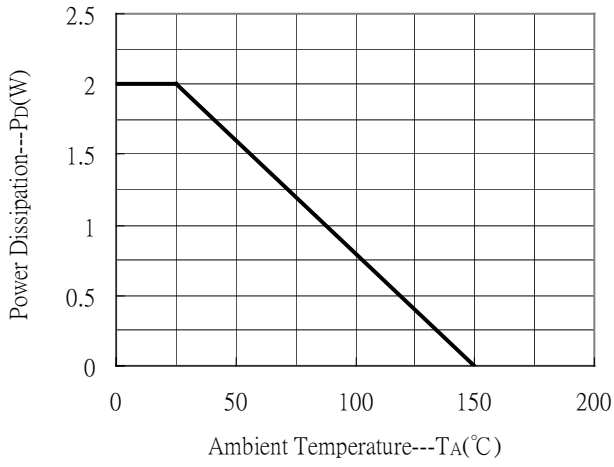
Saturation Voltage vs Collector Current



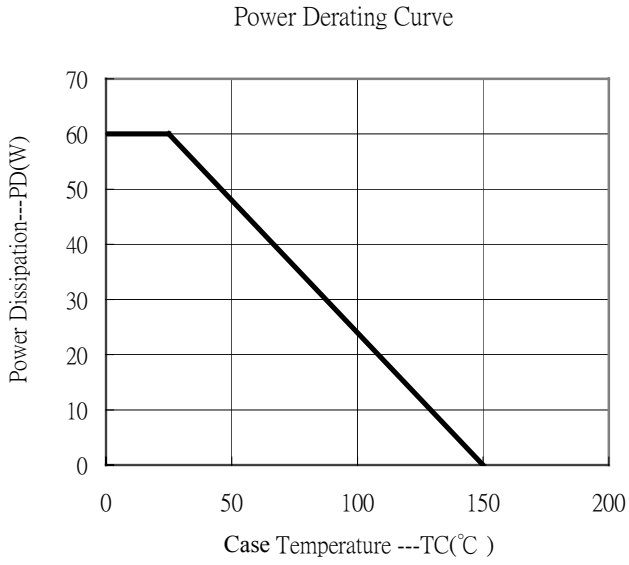
Saturation Voltage vs Collector Current



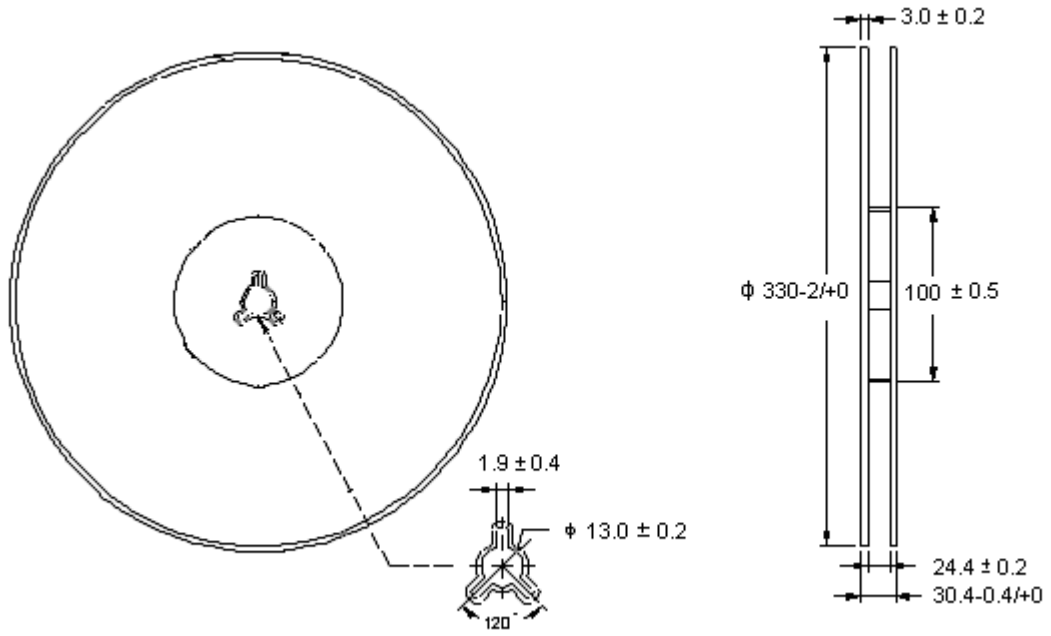
Power Derating Curve



Characteristic Curves(Cont.)

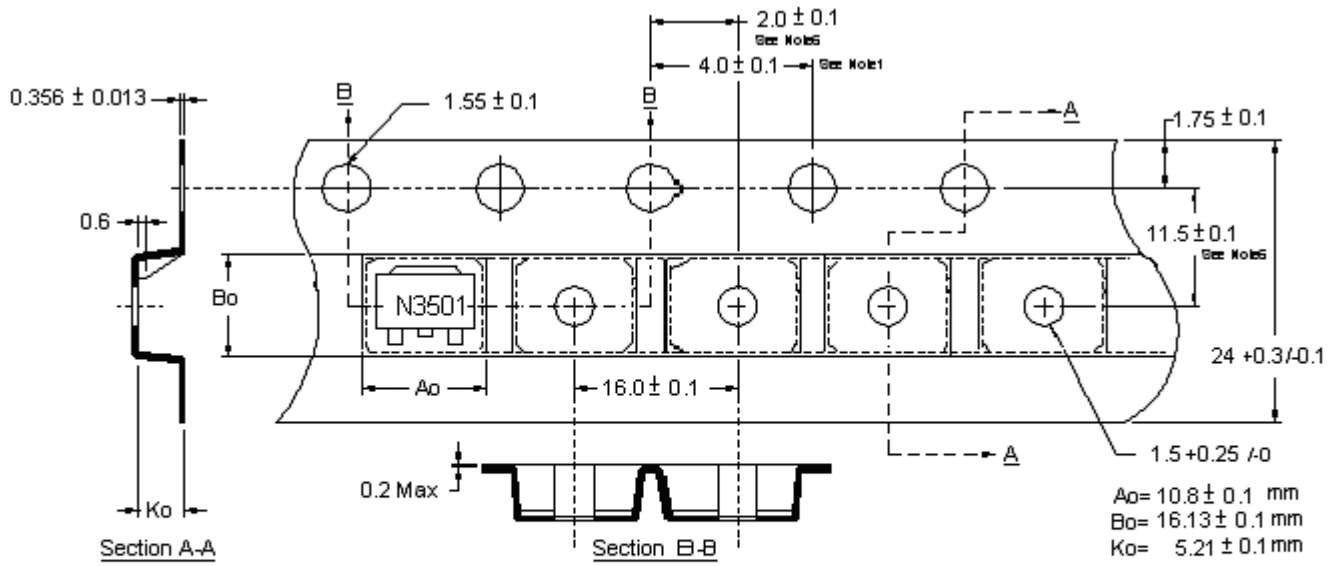


Reel Dimension



Unit: millimeter

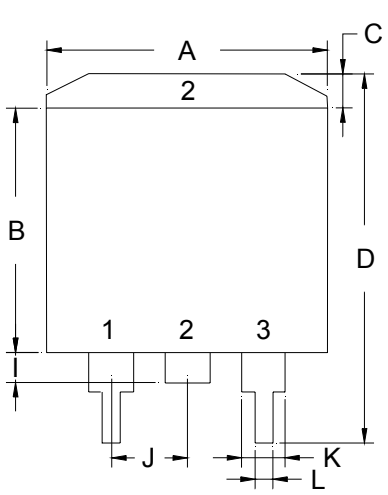
Carrier Tape Dimension

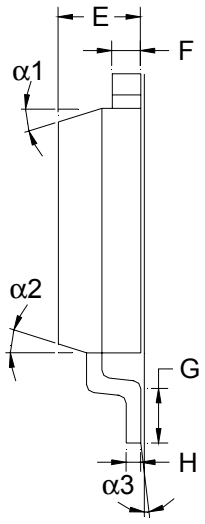


Notes:
1. 10 sprocket hole pitch cumulative tolerace ±0.2.
2. Camber not to exceed 1mm in 100mm.
3. Material: Conductive Black Advantek Polystyrene.
4. Ao & Bo measured on a plane 0.3mm above the bottom of the pocket.
5. Ko measured from a plane on the inside bottom of the pocket to the top surface of the carrier.
6. Pocket position relative to sprocket hole measured as true position of pocket, not pocket hole.

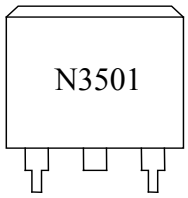
Unit : millimeter

TO-263 Dimension





Marking :



Style : Pin 1.Base 2.Collector 3.Emitter

3-Lead Plastic Surface Mounted Package
CYStek Package Code : F3

*:Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.3800	0.4050	9.65	10.29	I	0.0500	0.0700	1.27	1.78
B	0.3300	0.3700	8.38	9.40	J	-	*0.1000	-	*2.54
C	-	0.0550	-	1.40	K	0.0450	0.0550	1.14	1.40
D	0.5750	0.6250	14.61	15.88	L	0.0200	0.0390	0.51	0.99
E	0.1600	0.1900	4.06	4.83	α1	-	-	6°	8°
F	0.0450	0.0550	1.14	1.40	α2	-	-	6°	8°
G	0.0900	0.1100	2.29	2.79	α3	-	-	0°	5°
H	0.0180	0.0290	0.46	0.74					

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