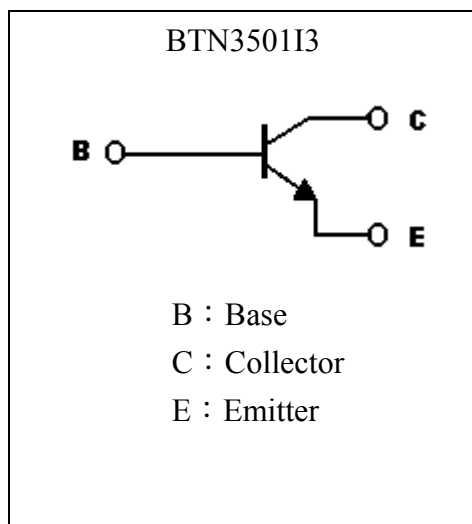
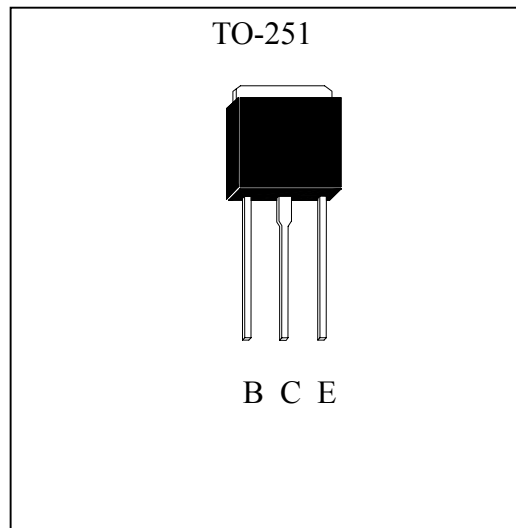


Low Vcesat NPN Epitaxial Planar Transistor

BTN3501I3

Features

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

Symbol

Outline

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

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	8	A
Collector Current (Pulse)	I_{CP}	16 (Note 1)	
Base Current	I_B	1	A
Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	1.5	W
Power Dissipation @ $T_C=25^\circ\text{C}$	P_D	20	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	83.3	$^\circ\text{C}/\text{W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6.25	$^\circ\text{C}/\text{W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^\circ\text{C}$

 Note : 1. Single Pulse , $P_w \leq 380\mu\text{s}$, $Duty \leq 2\%$.

**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)} 1	-	0.1	0.3	V	I _C =2A, I _B =200mA
*V _{CE(sat)} 2	-	-	0.6	V	I _C =8A, I _B =400mA
*V _{CE(sat)} 3	-	-	1.5	V	I _C =5A, I _B =50mA
*V _{BE(sat)} 1	-	-	1.2	V	I _C =2A, I _B =200mA
*V _{BE(sat)} 2	-	-	1.5	V	I _C =8A, I _B =800mA
*h _{FE} 1	200	-	-	-	V _{CE} =1V, I _C =100mA
*h _{FE} 2	200	-	400	-	V _{CE} =1V, I _C =2A
*h _{FE} 3	100	-	-	-	V _{CE} =1V, I _C =4A
f _T	-	50	-	MHz	V _{CE} =6V, I _C =500mA, f=20MHz
C _{ob}	-	130	-	pF	V _{CB} =10V, f=1MHz

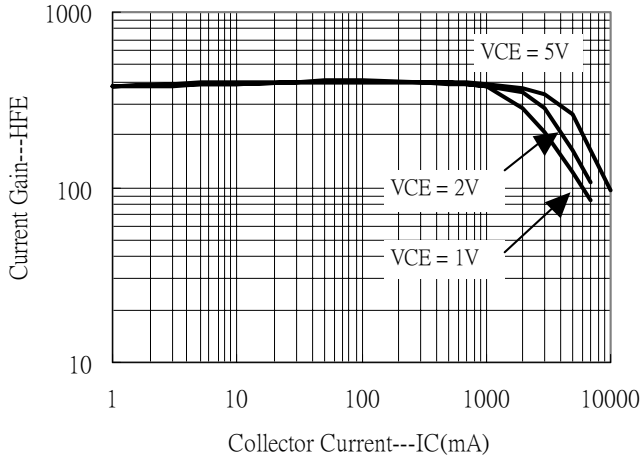
*Pulse Test : Pulse Width ≤380μs, Duty Cycle ≤2%

Classification of V_{CE(sat)} 3

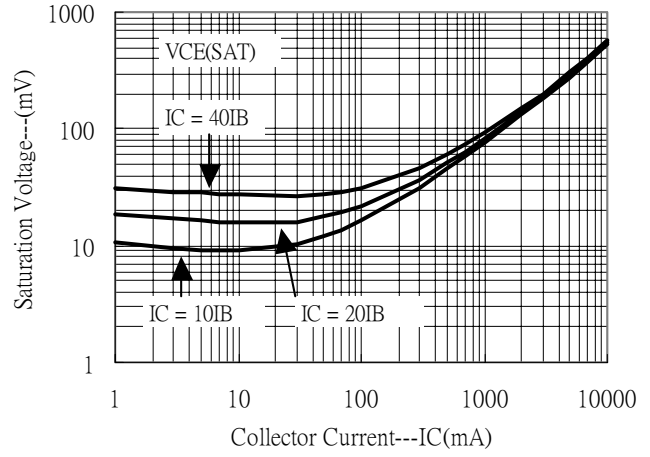
Rank	KA	KB	N
Range	< 360mV	350mV~900mV	800mV~1500mV

Characteristic Curves

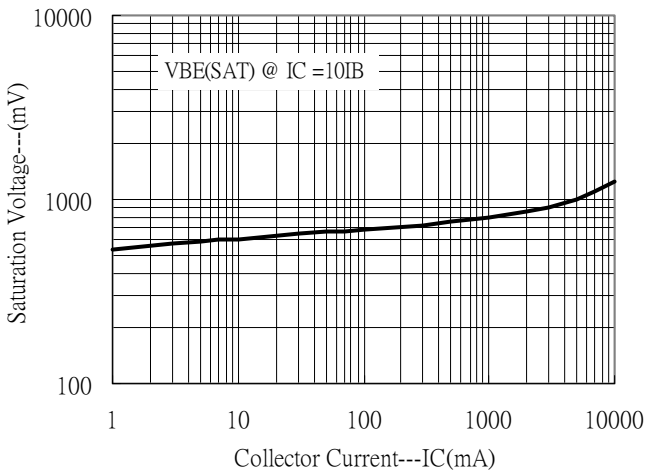
Current Gain vs Collector Current



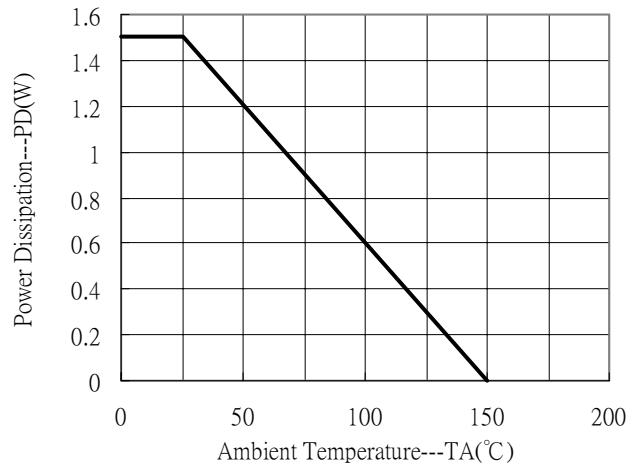
Saturation Voltage vs Collector Current



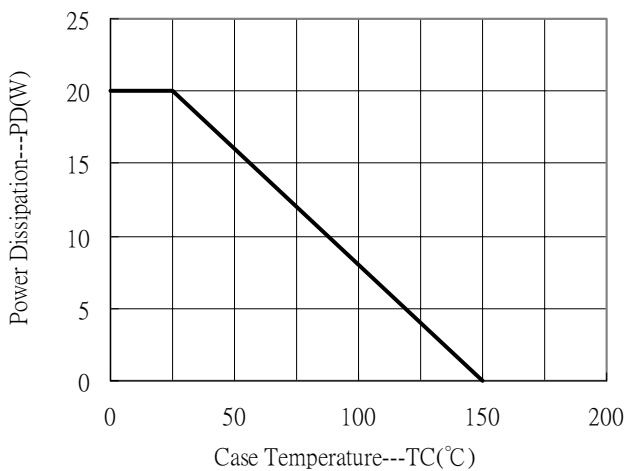
Saturation Voltage vs Collector Current



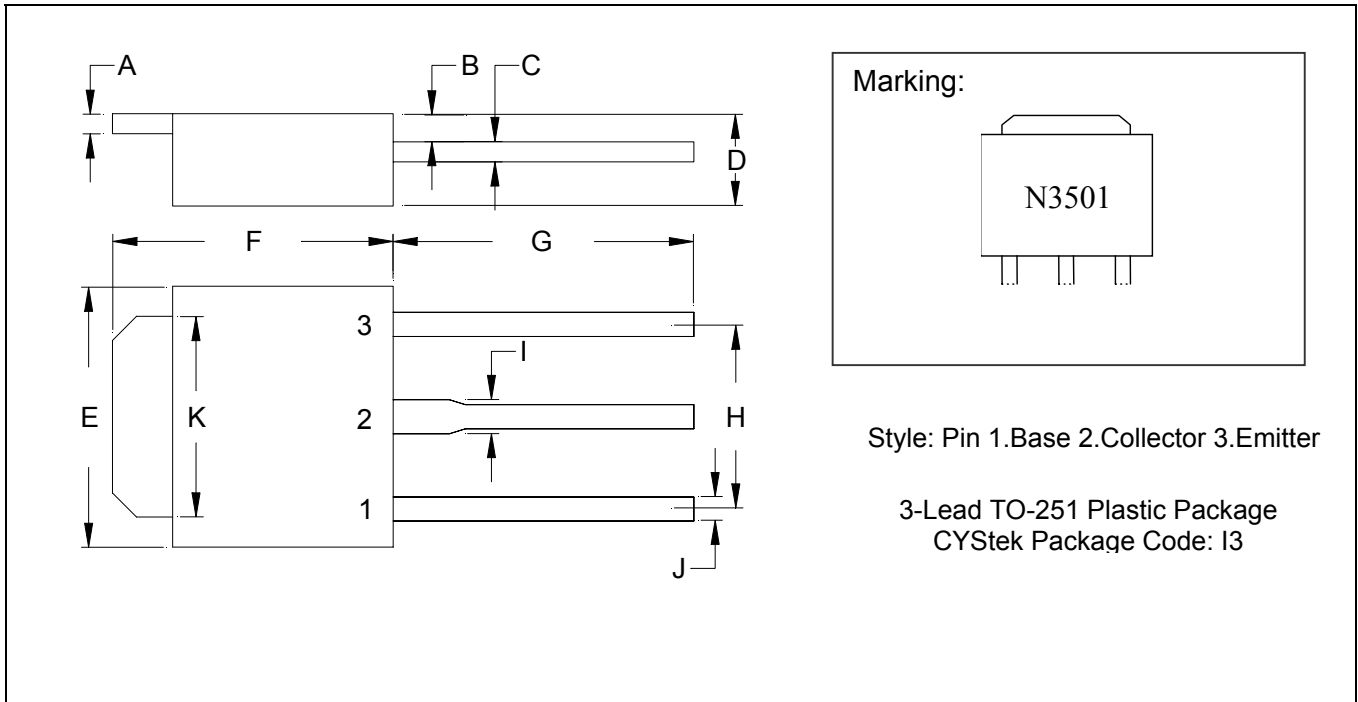
Power Derating Curve



Power Derating Curve



TO-251 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0177	0.0217	0.45	0.55	G	0.2559	-	6.50	-
B	0.0354	0.0591	0.90	1.50	H	-	*0.1811	-	*4.60
C	0.0177	0.0236	0.45	0.60	I	-	0.0354	-	0.90
D	0.0866	0.0945	2.20	2.40	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2677	0.2835	6.80	7.20					

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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