

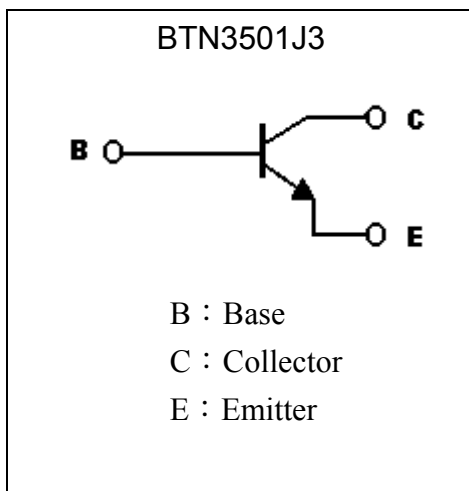
Low Vcesat NPN Epitaxial Planar Transistor

BTN3501J3

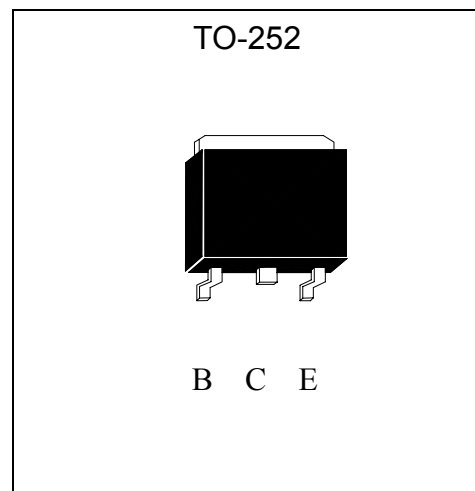
Features

- 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)	
Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	1.75 (Note 2)	W
Power Dissipation @ $T_c=25^\circ\text{C}$	P_D	20	
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	71.4 (Note 2)	$^\circ\text{C/W}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	6.25	$^\circ\text{C/W}$
Junction Temperature	T_j	150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-55~+150	$^\circ\text{C}$

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

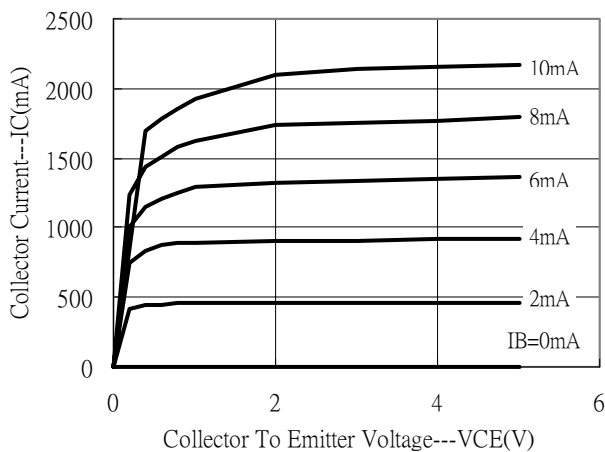
2. When mounted on a PCB with the minimum pad size.

**Characteristics (Ta=25°C)**

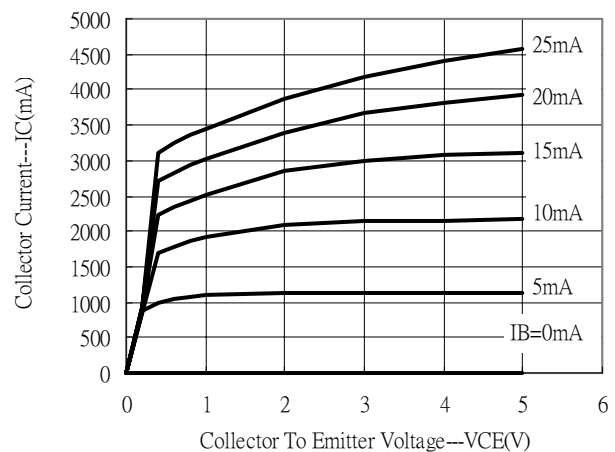
Symbol	Min.	Typ.	Max.	Unit	Test Conditions
$BV_{CEO(SUS)}$	80	-	-	V	$I_C=30mA, I_B=0$
I_{CES}	-	-	10	μA	$V_{CE}=80V, V_{BE}=0$
I_{EBO}	-	-	50	μA	$V_{EB}=5V, I_C=0$
$*V_{CE(sat)}$	-	0.3	0.6	V	$I_C=8A, I_B=0.4A$
$*V_{BE(sat)}$	-	1.0	1.5	V	$I_C=8A, I_B=0.8A$
$*h_{FE}$	60	-	-	-	$V_{CE}=1V, I_C=2A$
$*h_{FE}$	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 $\leq 380\mu s$, Duty Cycle $\leq 2\%$ **Characteristic Curves**

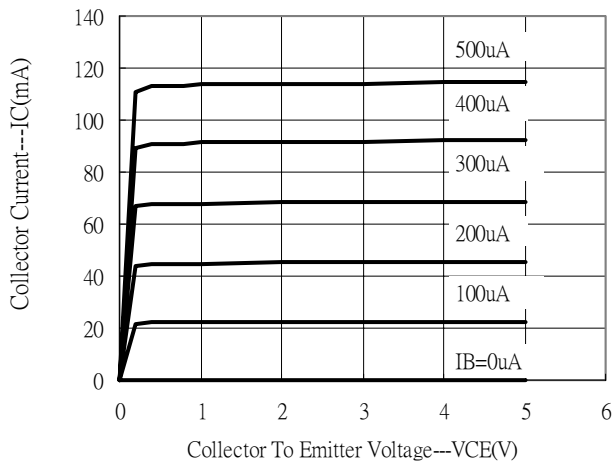
Grounded Emitter Output Characteristics



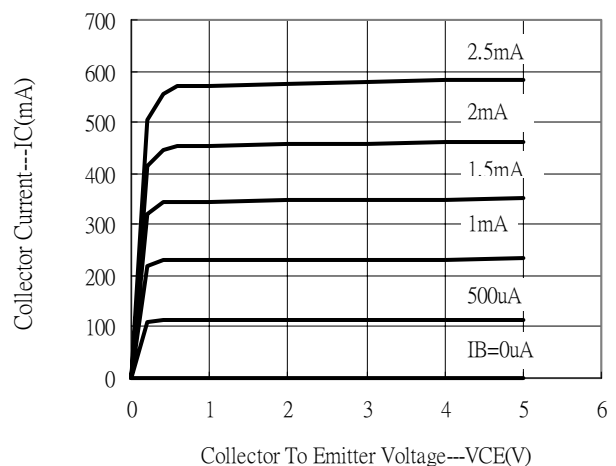
Grounded Emitter Output Characteristics



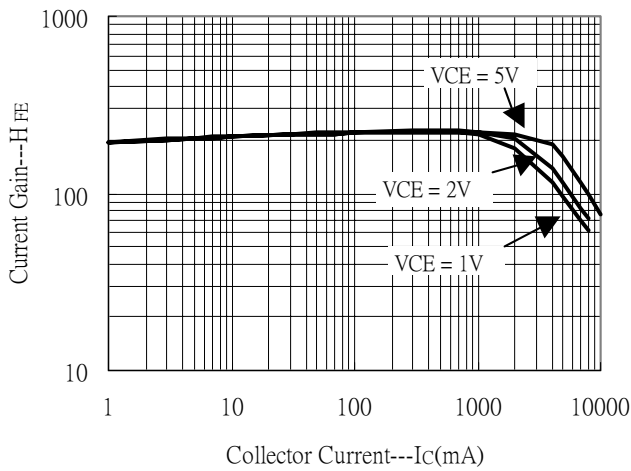
Grounded Emitter Output Characteristics



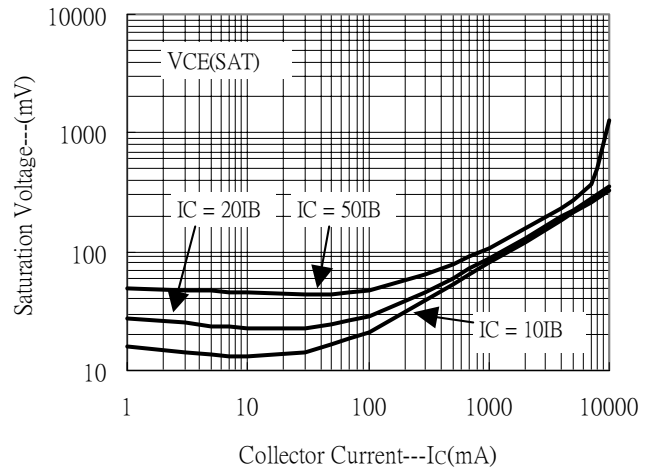
Grounded Emitter Output Characteristics



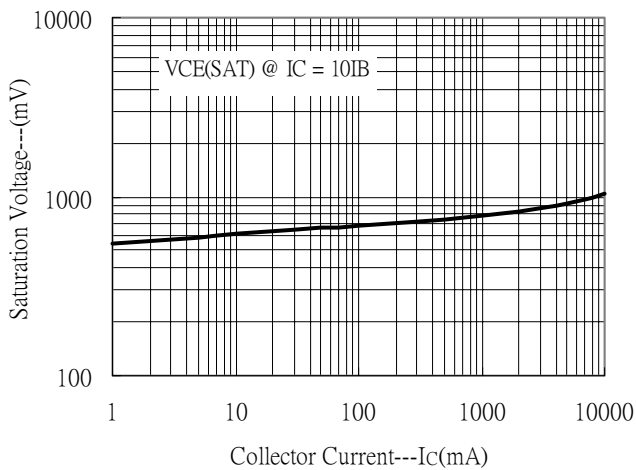
Current Gain vs Collector Current



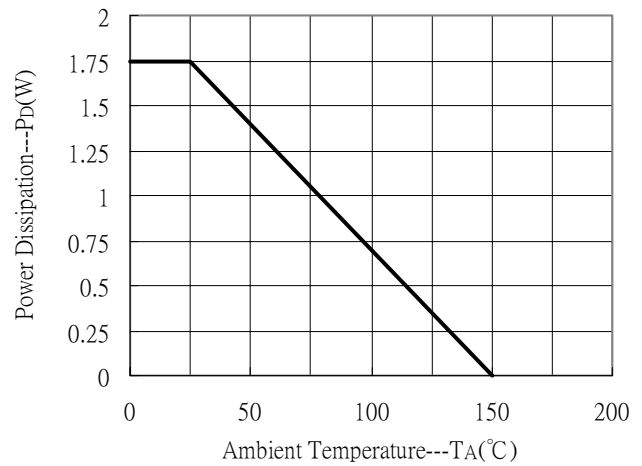
Saturation Voltage vs Collector Current



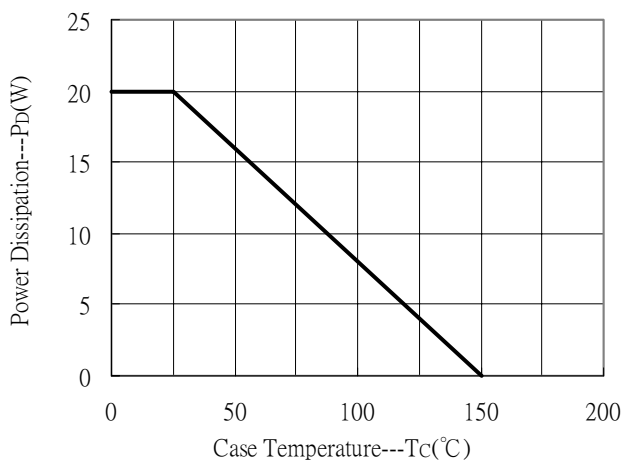
Saturation Voltage vs Collector Current



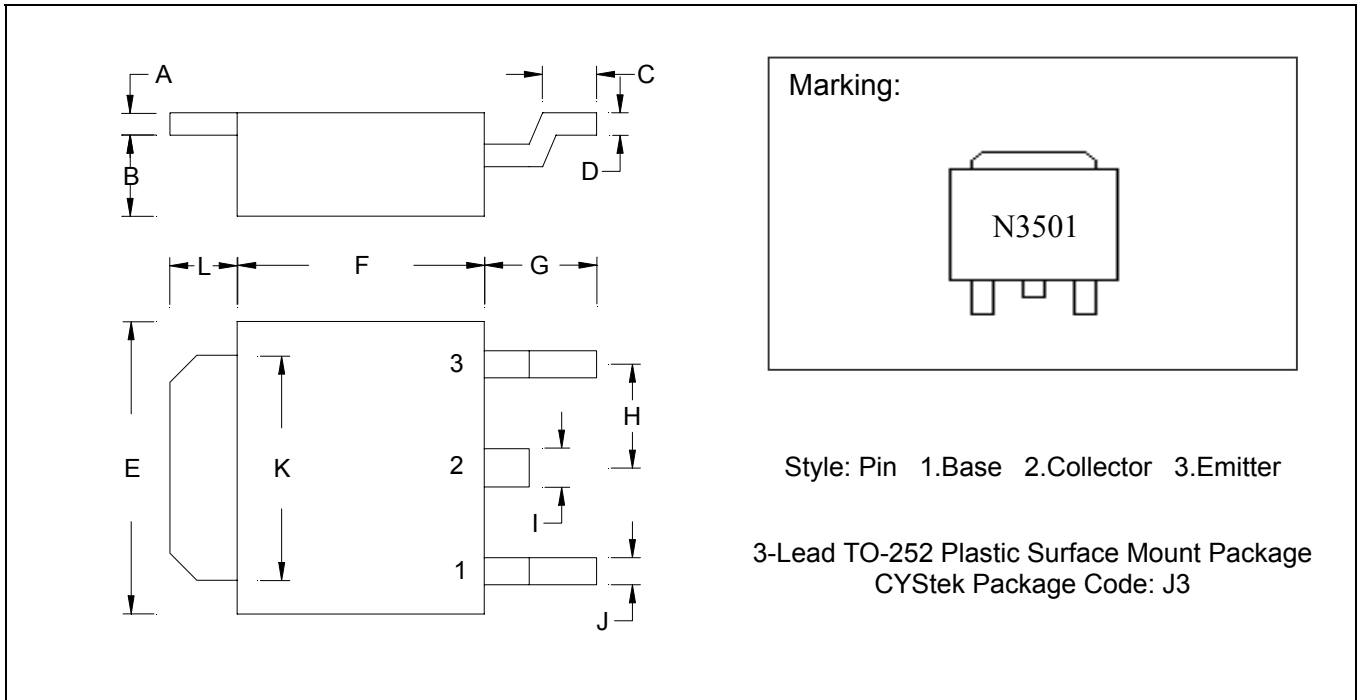
Power Derating Curve



Power Derating Curve



TO-252 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	0.0866	0.1102	2.20	2.80
B	0.0650	0.0768	1.65	1.95	H	-	*0.0906	-	*2.30
C	0.0354	0.0591	0.90	1.50	I	-	0.0354	-	0.90
D	0.0177	0.0236	0.45	0.60	J	-	0.0315	-	0.80
E	0.2520	0.2677	6.40	6.80	K	0.2047	0.2165	5.20	5.50
F	0.2125	0.2283	5.40	5.80	L	0.0551	0.0630	1.40	1.60

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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