

Low Vcesat NPN Epitaxial Planar Transistor

Features:

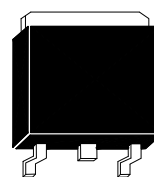
- Low collector-to-emitter saturation voltage
- High-speed switching
- High allowable power dissipation
- Large current capability

Applications:

- DC-DC converter, relay drivers, lamp drivers, motor drivers, strobos.

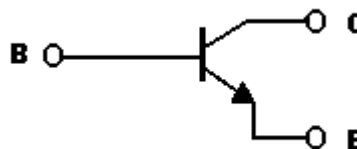
Outline

TO-252



B C E

Symbol



B : Base

C : Collector

E : Emitter

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V _{CBO}	80	V
Collector-Emitter Voltage	V _{CES}	80	V
Collector-Emitter Voltage	V _{CEO}	60	V
Emitter-Base Voltage	V _{EBO}	6	V
Collector Current (DC)	I _C	5	A
Collector Current (Pulse)	I _{CP}	7.5 (Note 1)	
Base Current	I _B	1.2	A
Power Dissipation @ T _A =25°C	P _D	0.8	W
Power Dissipation @ T _C =25°C	P _D	15	
Thermal Resistance, Junction to Ambient	R _{θJA}	156	°C/W
Thermal Resistance, Junction to Case	R _{θJC}	8.33	°C/W
Junction Temperature	T _j	150	°C
Storage Temperature	T _{stg}	-55~+150	°C

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

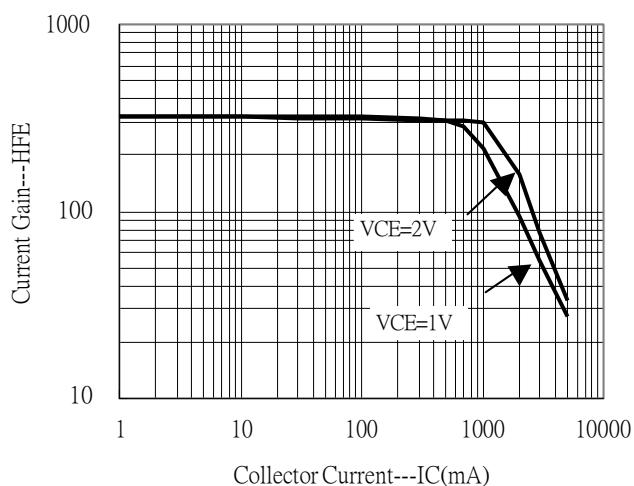
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CBO}	80	-	-	V	I _C =10μA, I _E =0
BV _{CES}	80	-	-	V	I _C =100μA, R _{BE} =0
*BV _{CEO}	60	-	-	V	I _C =1mA, I _B =0
BV _{EBO}	6	-	-	V	I _C =10μA, I _C =0
I _{CBO}	-	-	1	μA	V _{CB} =80V, I _E =0
I _{EBO}	-	-	1	μA	V _{EB} =4V, I _C =0
*V _{CE(sat)} 1	-	110	135	mV	I _C =1A, I _B =50mA
*V _{CE(sat)} 2	-	200	240	mV	I _C =2A, I _B =100mA
*V _{BE(sat)}	-	0.89	1.2	V	I _C =2A, I _B =100mA
*h _{FE}	200	-	560	-	V _{CE} =2V, I _C =500mA
f _T	-	400	-	MHz	V _{CE} =10V, I _C =500mA
C _{ob}	-	15	-	pF	V _{CB} =10V, f=1MHz
t _{on}	-	35	-	ns	V _{CC} =25V, I _C =10I _{B1} =-10I _{B2} =1A, R _L =25Ω
t _{stg}	-	300	-	ns	
t _f	-	20	-	ns	

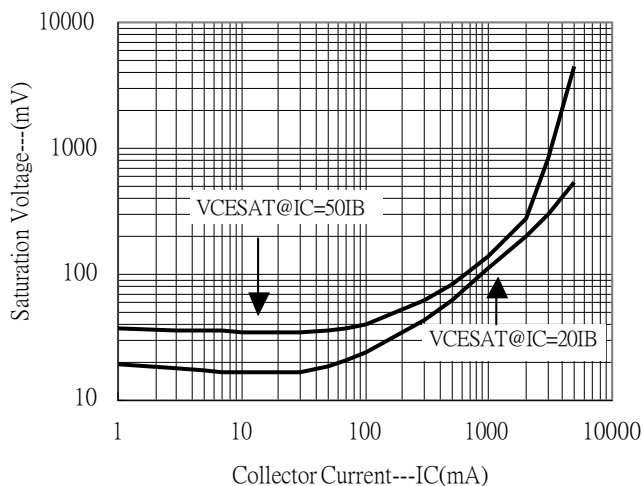
*Pulse Test : Pulse Width ≤ 380μs, Duty Cycle ≤ 2%

Characteristic Curves

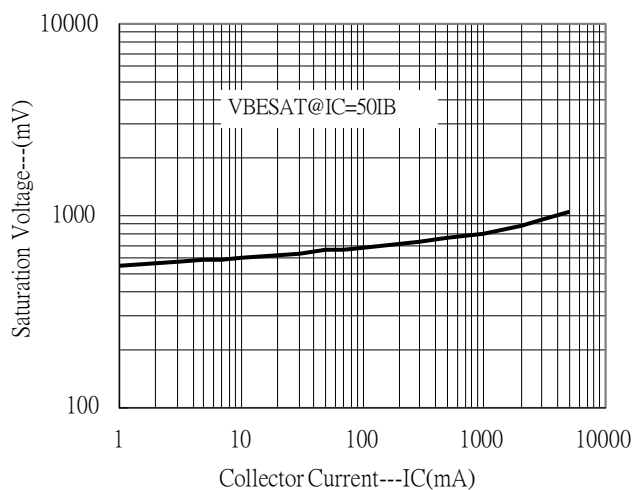
Current Gain vs Collector Current



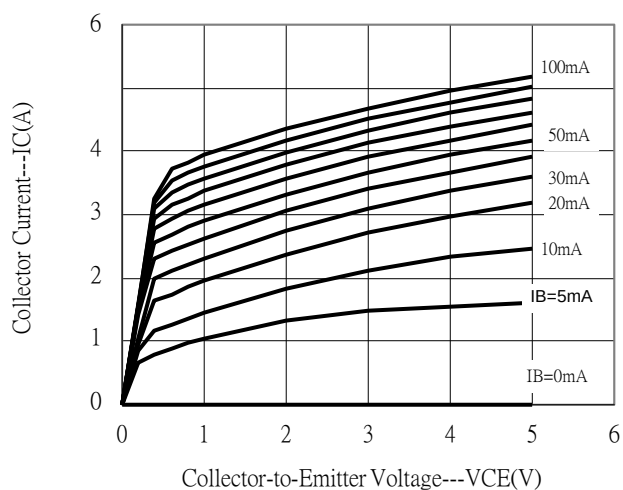
Saturation Voltage vs Collector Current



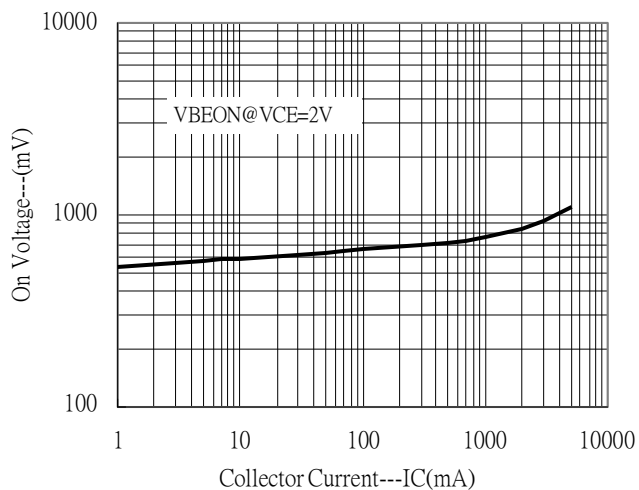
Saturation Voltage vs Collector Current



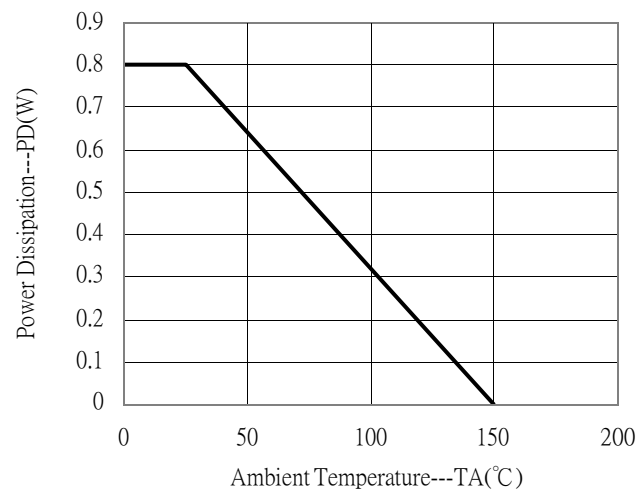
Output Characteristics



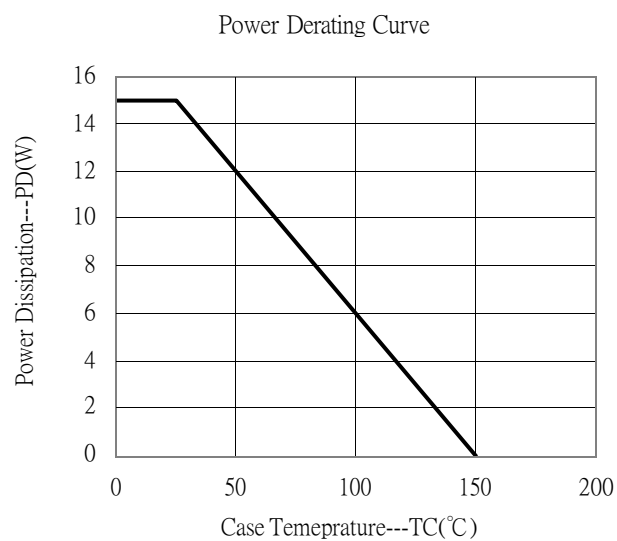
On Voltage vs Collector Current



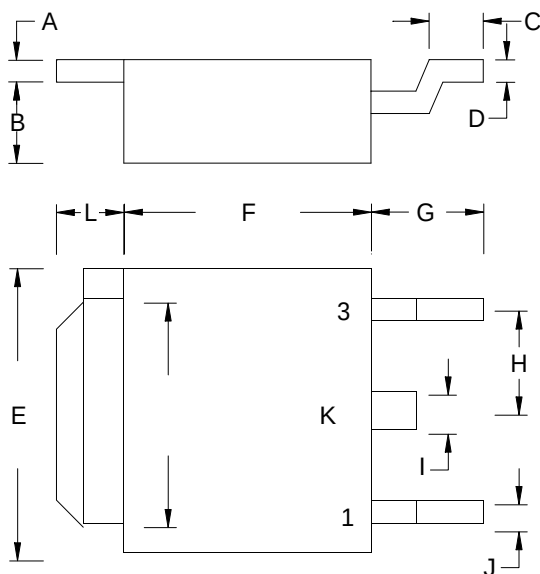
Power Derating Curve



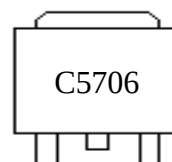
Characteristic Curves(Cont.)



TO-252 Dimension



Marking:



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

3-Lead TO-252 Plastic Surface Mount Package
 Package Code: J3

*: 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