

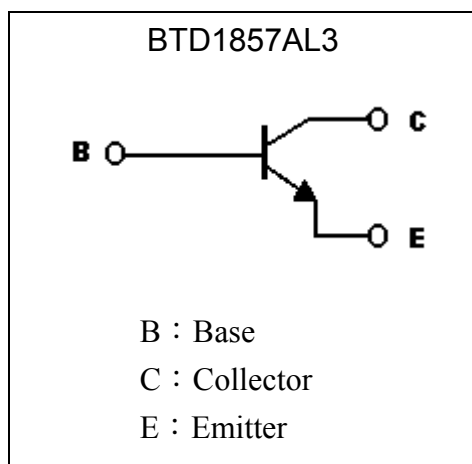
Silicon NPN Epitaxial Planar Transistor

BTD1857AL3

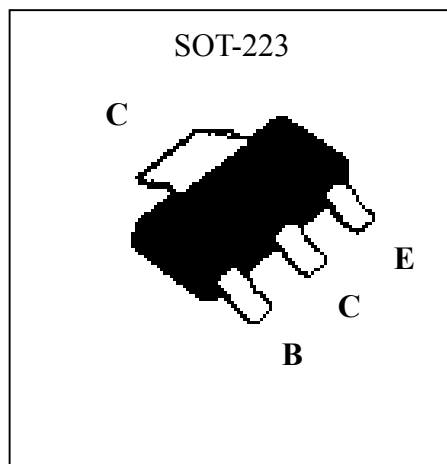
Description

- High BV_{CEO}
- High current capability
- Complementary to BTB1236AL3
- Pb-free package

Symbol



Outline



Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	180	V
Collector-Emitter Voltage	V_{CEO}	160	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	1.5	A
Collector Current (Pulse)	I_{CP}	3	A
Power Dissipation @Tc=25°C	P_D	5	W
Junction Temperature	T_j	150	°C
Storage Temperature	T_{stg}	-55~+150	°C

**Characteristics** (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV _{CB0}	180	-	-	V	I _C =50μA, I _E =0
BV _{CEO}	160	-	-	V	I _C =1mA, I _B =0
BV _{EB0}	5	-	-	V	I _E =50μA, I _C =0
I _{CB0}	-	-	1	μA	V _{CB} =160V, I _E =0
I _{EB0}	-	-	1	μA	V _{EB} =4V, I _C =0
*V _{CE(sat)}	-	-	0.6	V	I _C =1A, I _B =100mA
*V _{BE(on)}	-	-	1.5	V	V _{CE} =2V, I _C =150mA
h _{FE1}	82	-	390	-	V _{CE} =2V, I _C =150mA
h _{FE2}	30	-	-	-	V _{CE} =2V, I _C =500mA
f _T	-	140	-	MHz	V _{CE} =5V, I _C =150mA
Cob	-	27	-	pF	V _{CB} =10V, I _E =0, f=1MHz

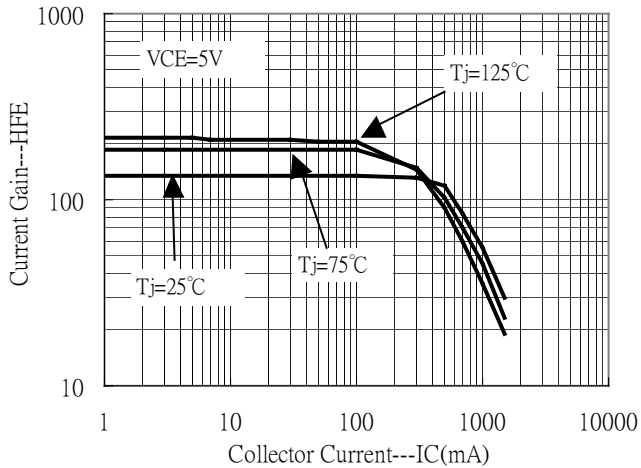
*Pulse Test: Pulse Width ≤380μs, Duty Cycle≤2%

Classification of h_{FE} 1

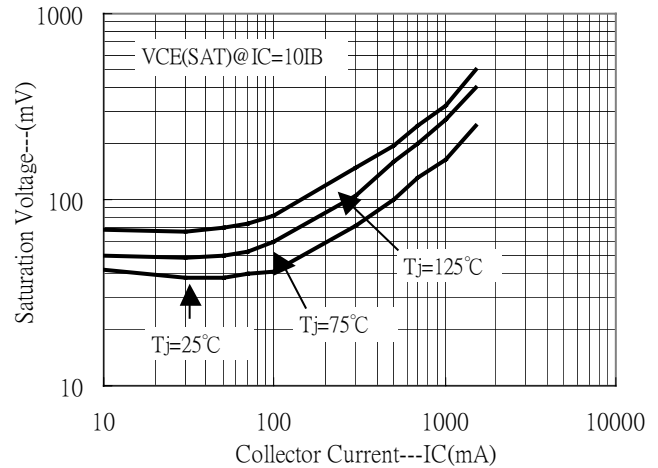
Rank	P	Q	R
Range	82~180	120~270	180~390

Characteristic Curves

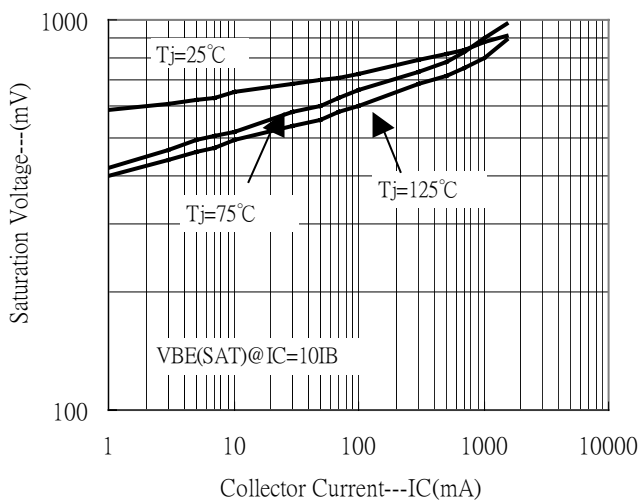
Current Gain vs Collector Current



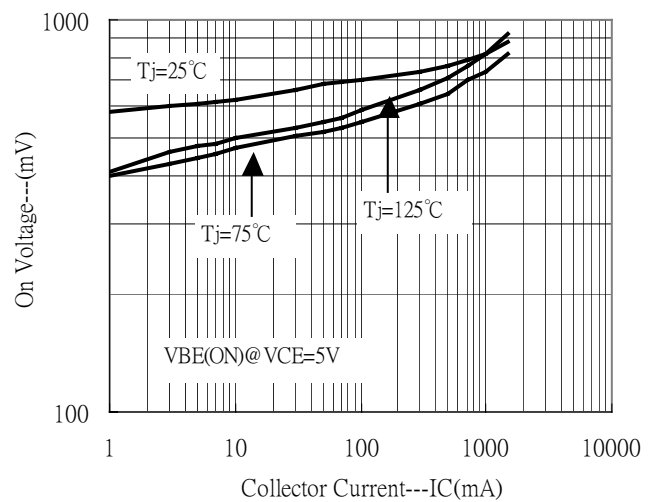
Saturation Voltage vs Collector Current



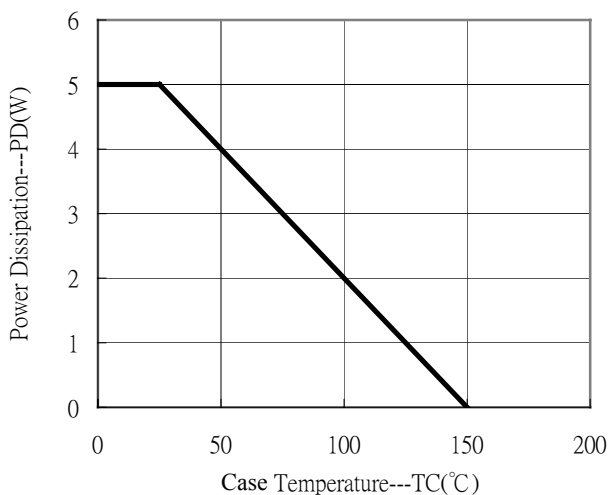
Saturation Voltage vs Collector Current



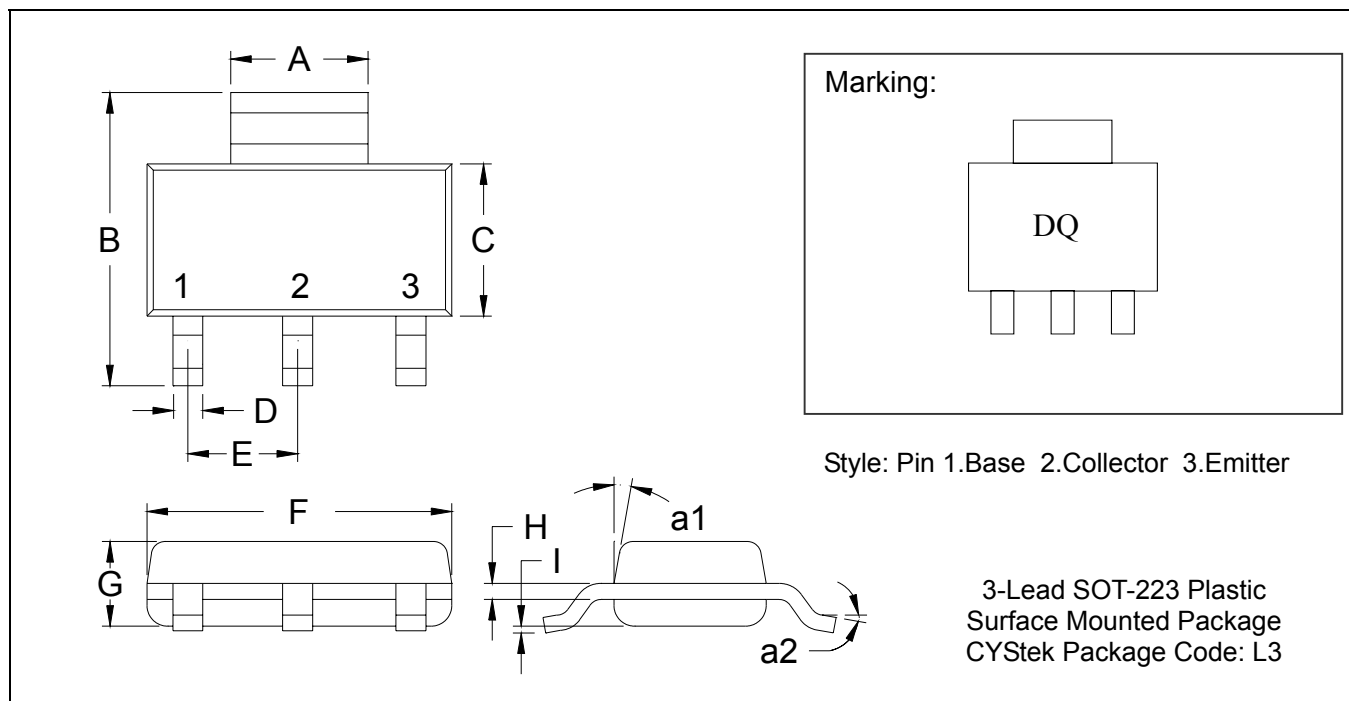
On Voltage vs Collector Current



Power Derating Curve



SOT-223 Dimension



*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1142	0.1220	2.90	3.10	G	0.0551	0.0709	1.40	1.80
B	0.2638	0.2874	6.70	7.30	H	0.0098	0.0138	0.25	0.35
C	0.1299	0.1457	3.30	3.70	I	0.0008	0.0039	0.02	0.10
D	0.0236	0.0315	0.60	0.80	a1	*13°	-	*13°	-
E	*0.0906	-	*2.30	-	a2	0°	10°	0°	10°
F	0.2480	0.2638	6.30	6.70					

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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