NPN Epitaxial Planar Transistor

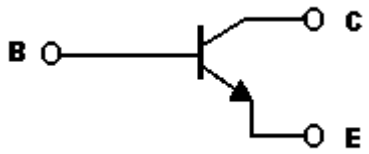
BTC5103M3

Features

- High I_C, $I_{C(DC)}$=5A
- Low V_{CE}(sat), 0.3V typically
- Good current gain linearity

Symbol

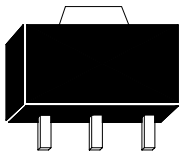
BTC5103M3



B：Base
C：Collector
E：Emitter

Outline

SOT-89



B C E

Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Limit	Unit
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	60	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current (DC)	I_C	5	A
Collector Current (Pulse)	I_{CP}	10 (Note 1)	A
Power Dissipation	Pd	0.6	W
		1 (Note 2)	W
		2 (Note 3)	W
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	208	°C/W
		125 (Note 2)	°C/W
		62.5 (Note 3)	°C/W
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

Note : 1. Single Pulse Pw≦350μs, Duty≦2%.
2. When mounted on FR-4 PCB with area measuring 10×10×1 mm
3. When mounted on ceramic with area measuring 40×40×1 mm

Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	80	-	-	V	I_C=50μA, I_E=0
BV_{CEO}	60	-	-	V	I_C=1mA, I_B=0
BV_{EBO}	5	-	-	V	I_E=50μA, I_C=0
I_{CBO}	-	-	10	μA	V_{CB}=60V. I_E=0
I_{CEO}	-	-	5	mA	V_{CE}=60V. I_B=0
I_{EBO}	-	-	10	μA	V_{EB}=5V,I_C=0
*$V_{CE(sat)}$	-	0.3	1	V	I_C=2A, I_B=200mA
*$V_{BE(sat)}$	-	-	1.5	V	I_C=2A, I_B=200mA
*$V_{BE(on)}$	-	-	1.5	V	V_{CE}=2V, I_C=1A
*h_{FE} 1	82	-	390	-	V_{CE}=5V, I_C=500mA
*h_{FE} 2	80	-	-	-	V_{CE}=2V, I_C=1A
f_T	-	8	-	MHz	V_{CE}=5V, I_C=500mA, f=1MHz

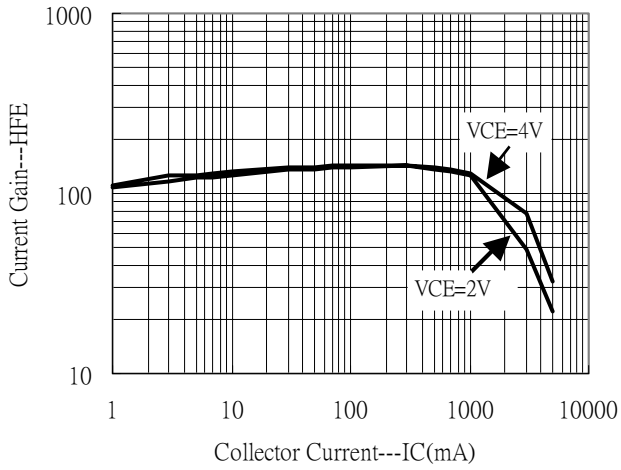
*Pulse Test : Pulse Width ≤380μs, Duty Cycle≤2%

Classification Of h_{FE} 1

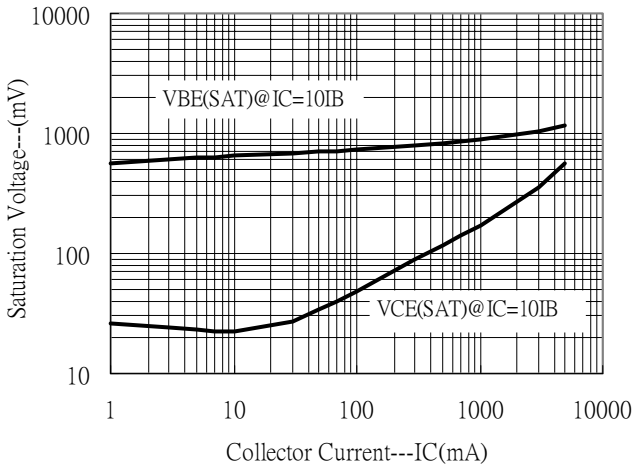
Rank	P	Q	R
Range	82~180	120~270	180~390

Characteristic Curves

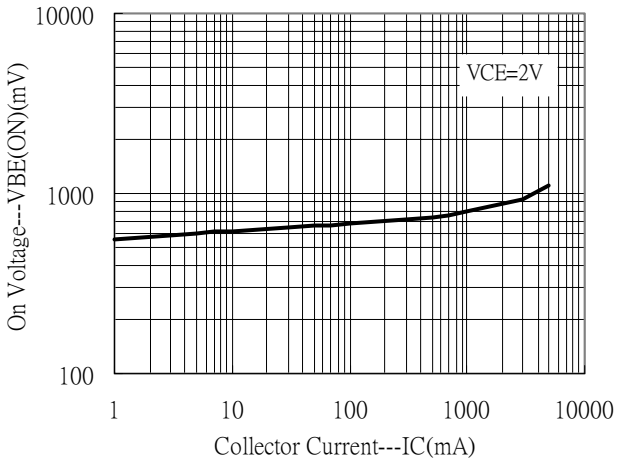
Current Gain vs Collector Current



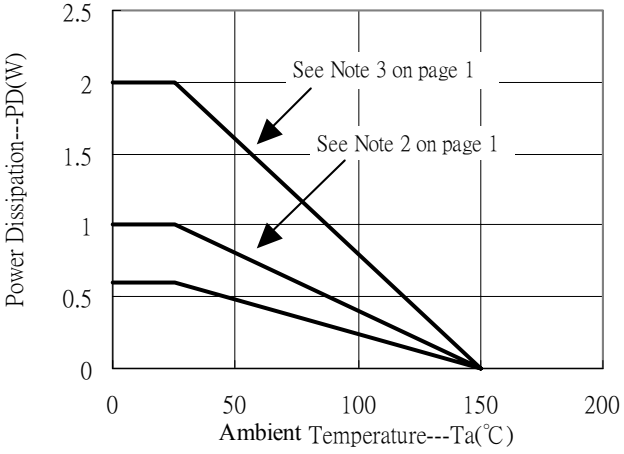
Saturation Voltage vs Collector Current



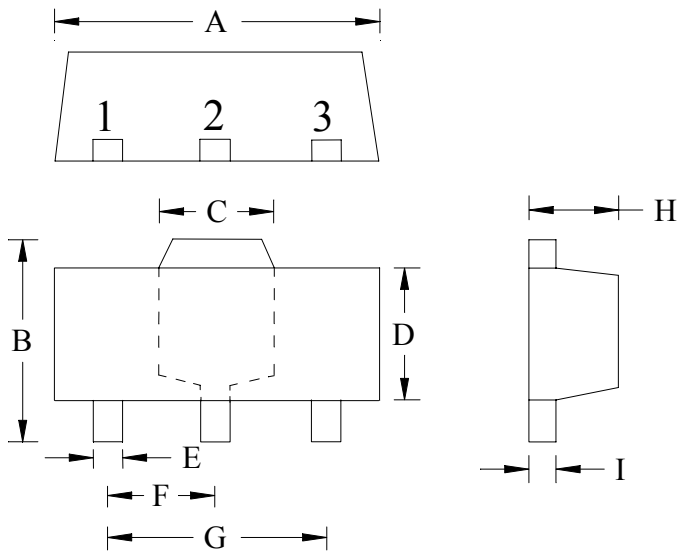
On Voltage vs Collector Current

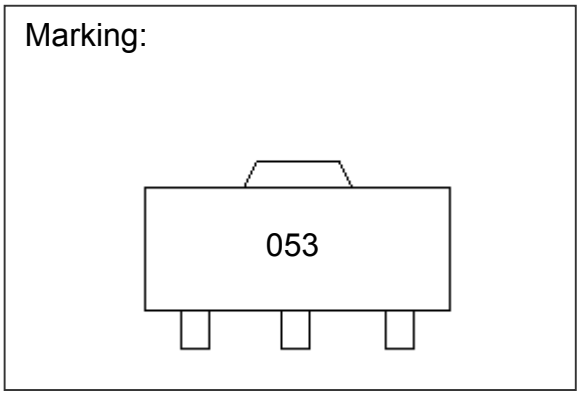


Power Derating Curves



SOT-89 Dimension





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

3-Lead SOT-89 Plastic
Surface Mounted Package
CYStek Package Code: M3

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.1732	0.1811	4.40	4.60	F	0.0583	0.0598	1.48	1.527
B	0.1594	0.1673	4.05	4.25	G	0.1165	0.1197	2.96	3.04
C	0.0591	0.0663	1.50	1.70	H	0.0551	0.0630	1.40	1.60
D	0.0945	0.1024	2.40	2.60	I	0.0138	0.0161	0.35	0.41
E	0.01417	0.0201	0.36	0.51					

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