NPN Epitaxial Planar Transistor

BTC4083S3

Description

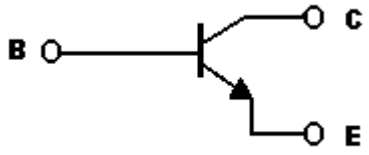
The BTC4083S3 is designed for use in VHF & UHF oscillators and VHF mixer in tuner of a TV receiver.

Features

- High transition frequency. (f_T = 3.2GHz, typ. @ V_{CE}=10V, I_C=10mA, f=500MHz)
- Very low capacitance. (Cob = 0.8pF , typ. @ V_{CB}=10V, f=1MHz)
- Small $R_{bb'}$-C_C and high gain. ($R_{bb'}$-Cc = 4ps , typ. @V_{CB}=10V, I_C=10mA, f=31.8MHz)
- Small NF. (NF = 3.5dB , typ. @V_{CE}=12V, I_C=2mA, f=200MHz, Rg=50Ω)

Symbol

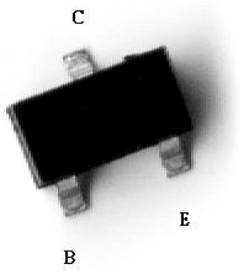
BTC4083S3



B：Base
C：Collector
E：Emitter

Outline

SOT-323



Absolute Maximum Ratings (Ta=25°C)

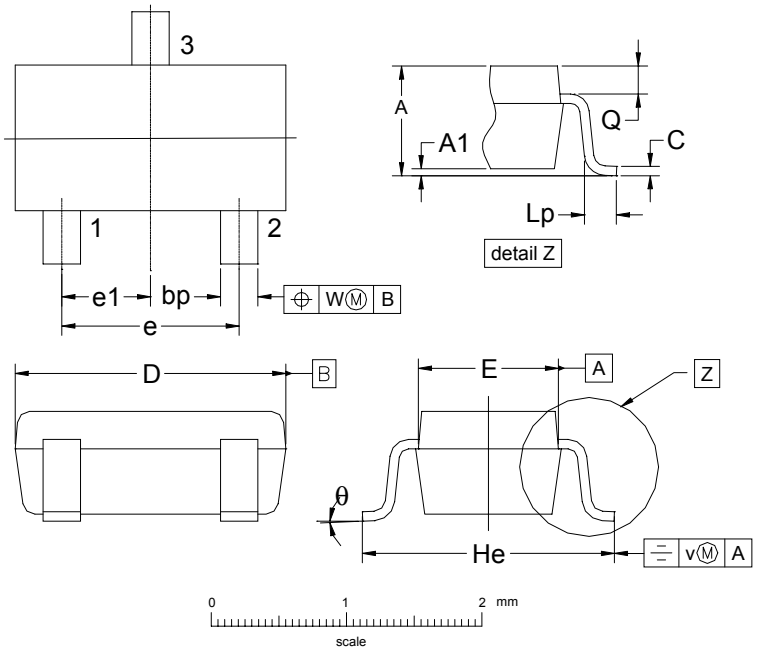
Parameter	Symbol	Limits	Unit
Collector-Base Voltage	V_{CBO}	20	V
Collector-Emitter Voltage	V_{CEO}	11	V
Emitter-Base Voltage	V_{EBO}	3	V
Collector Current	I_C	50	mA
Power Dissipation	Pd	200	mW
Junction Temperature	Tj	150	°C
Storage Temperature	Tstg	-55~+150	°C

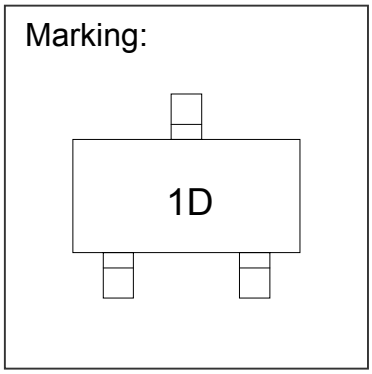
Characteristics (Ta=25°C)

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV_{CBO}	20	-	-	V	I_C=10μA
BV_{CEO}	11	-	-	V	I_C=1mA
BV_{EBO}	3	-	-	V	I_E=10μA
I_{CBO}	-	-	0.5	μA	V_{CB}=10V
I_{EBO}	-	-	0.5	μA	V_{EB}=2V
*$V_{CE(sat)}$	-	-	0.5	V	I_C=10mA, I_B=5mA
*h_{FE}	82	-	180	-	V_{CE}=10V, I_C=5mA
f_T	1.4	3.2	-	GHz	V_{CE}=10V, I_C=10mA, f=500MHz
Cob	-	0.8	1.5	pF	V_{CB}=10V, I_E=0A, f=1MHz
$R_{bb'}$-C_C	-	4	12	ps	V_{CB}=10V, I_C=10mA, f=31.8MHz
NF	-	3.5	-	dB	V_{CE}=12V, I_C=2mA, f=200MHz, Rg=50Ω

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

SOT-323 Dimension





3-Lead SOT-323 Plastic
Surface Mounted Package
CYStek Package Code: S3

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

*: Typical

DIM	Inches		Millimeters		DIM	Inches		Millimeters	
	Min.	Max.	Min.	Max.		Min.	Max.	Min.	Max.
A	0.0315	0.0433	0.80	1.10	e1	0.0256	-	0.65	-
A1	0.0000	0.0039	0.00	0.10	He	0.0787	0.0886	2.00	2.25
bp	0.0118	0.0157	0.30	0.40	Lp	0.0059	0.0177	0.15	0.45
C	0.0039	0.0098	0.10	0.25	Q	0.0051	0.0091	0.13	0.23
D	0.0709	0.0866	1.80	2.20	v	0.0079	-	0.2	-
E	0.0453	0.0531	1.15	1.35	w	0.0079	-	0.2	-
e	0.0512	-	1.3	-	θ	-	-	10°	0°

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