

# NPN Epitaxial Planar Transistor

## BTC4083S3

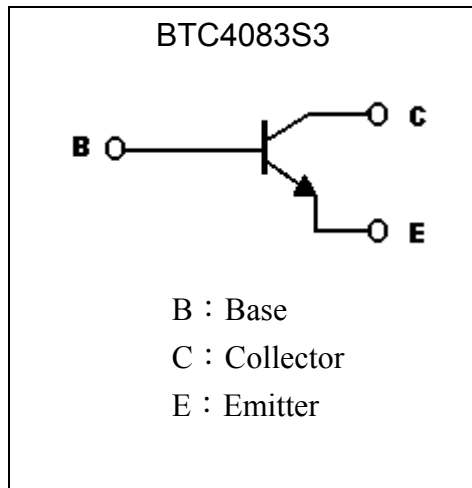
### Description

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

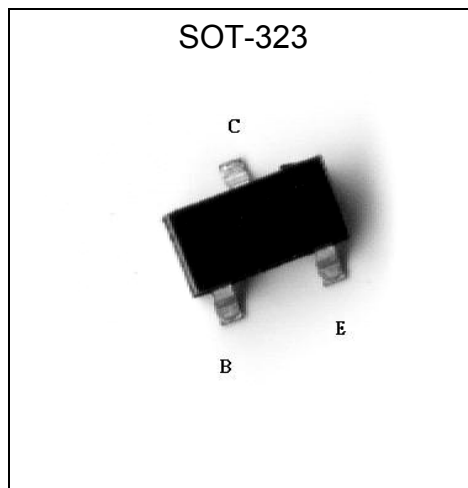
### Features

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

### Symbol



### Outline



### 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	$P_d$	200	mW
Junction Temperature	$T_j$	150	°C
Storage Temperature	$T_{stg}$	-55~+150	°C

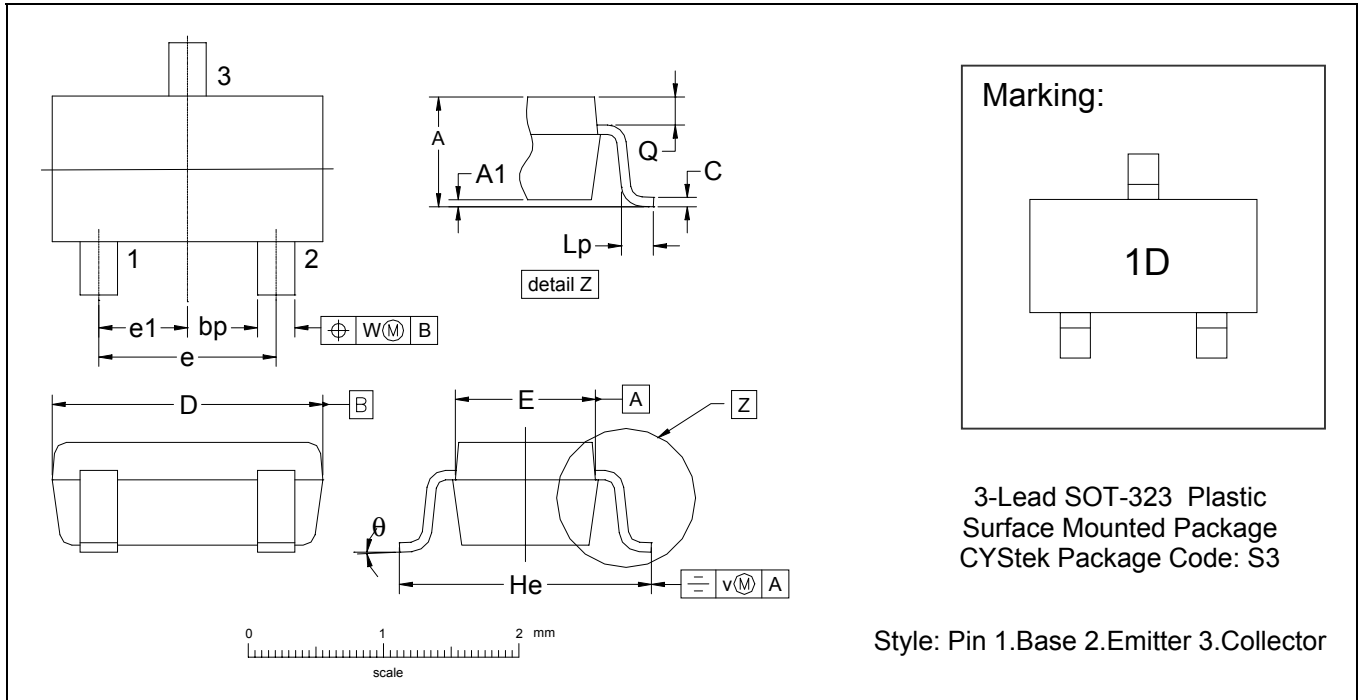


**Characteristics (Ta=25°C)**

Symbol	Min.	Typ.	Max.	Unit	Test Conditions
BV <sub>CB0</sub>	20	-	-	V	I <sub>C</sub> =10μA
BV <sub>CEO</sub>	11	-	-	V	I <sub>C</sub> =1mA
BV <sub>EBO</sub>	3	-	-	V	I <sub>E</sub> =10μA
I <sub>CB0</sub>	-	-	0.5	μA	V <sub>CB</sub> =10V
I <sub>EBO</sub>	-	-	0.5	μA	V <sub>EB</sub> =2V
*V <sub>CE(sat)</sub>	-	-	0.5	V	I <sub>C</sub> =10mA, I <sub>B</sub> =5mA
*h <sub>FE</sub>	82	-	180	-	V <sub>CE</sub> =10V, I <sub>C</sub> =5mA
f <sub>T</sub>	1.4	3.2	-	GHz	V <sub>CE</sub> =10V, I <sub>C</sub> =10mA, f=500MHz
C <sub>ob</sub>	-	0.8	1.5	pF	V <sub>CB</sub> =10V, I <sub>E</sub> =0A, f=1MHz
R <sub>bb</sub> '-C <sub>C</sub>	-	4	12	ps	V <sub>CB</sub> =10V, I <sub>C</sub> =10mA, f=31.8MHz
NF	-	3.5	-	dB	V <sub>CE</sub> =12V, I <sub>C</sub> =2mA, f=200MHz, R <sub>g</sub> =50Ω

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

**SOT-323 Dimension**



\*: 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

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