

# BC817-40W-TP Datasheet

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DiGi Electronics Part Number

BC817-40W-TP-DG

Manufacturer

[Micro Commercial Co](#)

Manufacturer Product Number

BC817-40W-TP

Description

Interface

Detailed Description

Bipolar (BJT) Transistor NPN 45 V 500 mA 100MHz 200 mW Surface Mount SOT-323

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## Purchase and inquiry

Manufacturer Product Number:

BC817-40W-TP

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

200 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

SC-70, SOT-323

Base Product Number:

BC817

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

500 mA

Vce Saturation (Max) @ Ib, Ic:

700mV @ 50mA, 500mA

DC Current Gain (hFE) (Min) @ Ic, Vce:

250 @ 100mA, 1V

Frequency - Transition:

100MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-323

## Environmental & Export classification

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

ECCN:

EAR99

## Features

- Halogen Free. "Green" Device (Note 1)
- Moisture Sensitivity Level 1
- Epoxy Meets UL 94 V-0 Flammability Rating
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

## Maximum Ratings @ 25°C Unless Otherwise Specified

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	50	V
Collector-Emitter Voltage	$V_{CEO}$	45	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	500	mA
Power Dissipation	$P_D$	200	mW

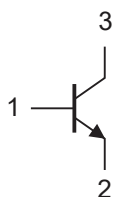
## Thermal characteristics

Parameter	Symbol	Rating	Unit
Operating Junction Temperature Range	$T_J$	-55~+150	°C
Storage Temperature Range	$T_{stg}$	-55~+150	°C
Thermal Resistance from Junction to Ambient	$R_{th(J-A)}$	625	°C/W

### Note:

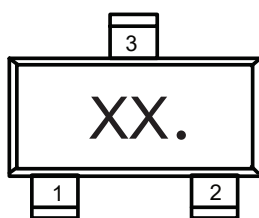
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

### Internal Structure



1.BASE  
2.EMITTER  
3.COLLECTOR

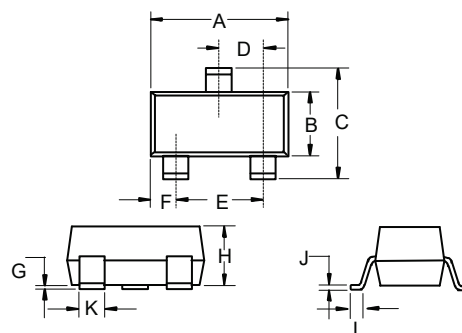
### Marking Code



Part NO.	Marking code
BC817-16W	6A
BC817-25W	6B
BC817-40W	6C

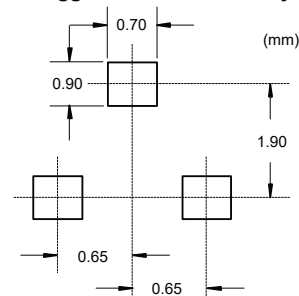
# NPN Silicon General Purpose Transistors

## SOT-323



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.071	0.087	1.80	2.20	
B	0.045	0.053	1.15	1.35	
C	0.083	0.096	2.10	2.45	
D	0.026		0.65		TYP.
E	0.047	0.055	1.20	1.40	
F	0.012	0.016	0.30	0.40	
G	0.000	0.004	0.00	0.10	
H	0.035	0.044	0.90	1.10	
J	0.002	0.010	0.05	0.25	
K	0.006	0.016	0.15	0.40	
L	0.010	0.018	0.26	0.46	

### Suggested Solder Pad Layout



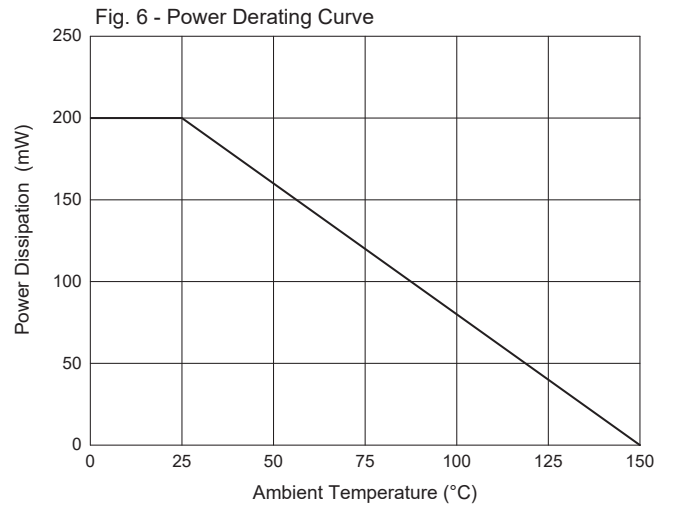
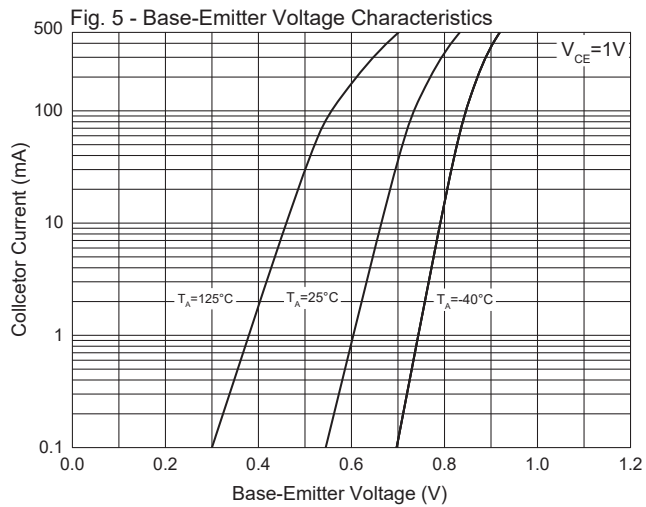
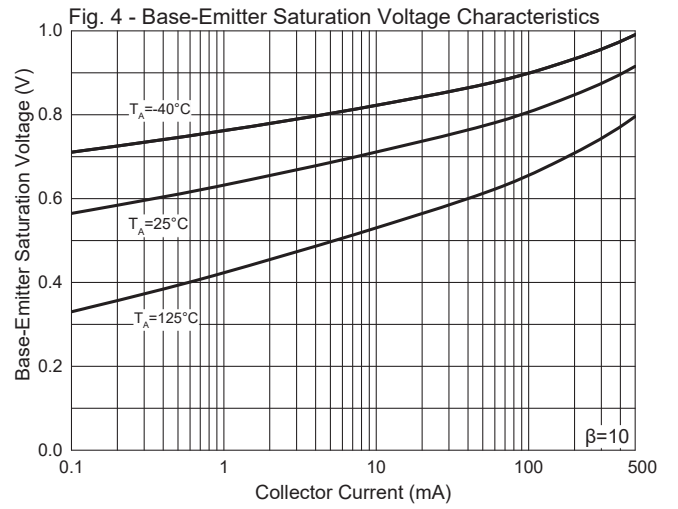
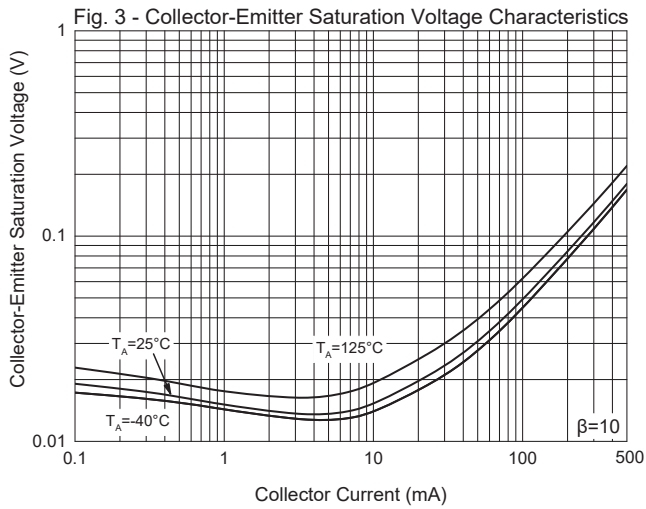
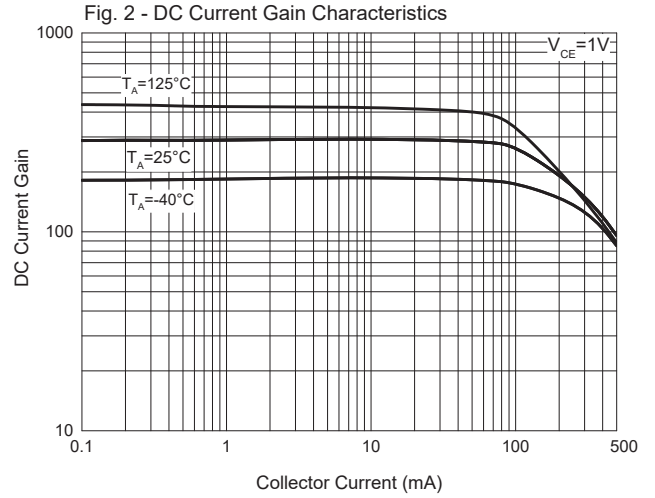
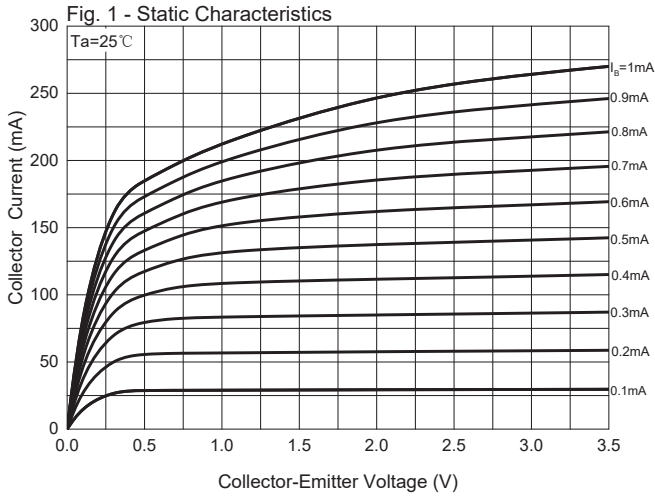
**Electrical Characteristics @  $T_A=25^\circ\text{C}$  Unless Otherwise Specified**

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	50			V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=1\mu\text{A}, I_C=0$
Collector Cutoff Current	$I_{CBO}$			0.1	$\mu\text{A}$	$V_{CB}=20\text{V}, I_E=0$
Emitter Cutoff Current	$I_{EBO}$			0.1	$\mu\text{A}$	$V_{EB}=5\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	100		600		$V_{CE}=1\text{V}, I_C=100\text{mA}$
	$h_{FE(2)}$	40				$V_{CE}=1\text{V}, I_C=500\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.7	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$			1.2	V	$I_C=500\text{mA}, I_B=50\text{mA}$
Base-Emitter Voltage	$V_{BE}$			1.2	V	$V_{CE}=1\text{V}, I_C=500\text{mA}$
Transition Frequency	$f_T$	100			MHz	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$
Collector Capacitance	$C_C$			5	pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$

**Classification of  $h_{FE(1)}$** 

Rank	BC817-16W	BC817-25W	BC817-40W
Range	100-250	160-400	250-600

### Curve Characteristics



## Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:3Kpcs/Reel
Part Number-13P	Tape&Reel:10Kpcs/Reel

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