

BC857BT-TP Datasheet

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DiGi Electronics Part Number

BC857BT-TP-DG

Manufacturer

[Micro Commercial Co](#)

Manufacturer Product Number

BC857BT-TP

Description

Interface

Detailed Description

Bipolar (BJT) Transistor PNP 45 V 100 mA 100MHz 1
50 mW Surface Mount SOT-523

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Purchase and inquiry

Manufacturer Product Number:

BC857BT-TP

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

45 V

Current - Collector Cutoff (Max):

15nA (ICBO)

Power - Max:

150 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

SOT-523

Base Product Number:

BC857

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

100 mA

Vce Saturation (Max) @ Ib, Ic:

650mV @ 5mA, 100mA

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

220 @ 2mA, 5V

Frequency - Transition:

100MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-523

Environmental & Export classification

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

ECCN:

EAR99

Features

- Epitaxial Die Construction
- For Switching and AF Amplifier Applications
- 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

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C

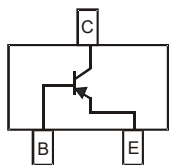
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	-50	V
Collector-Emitter Voltage	V_{CEO}	-45	V
Emitter-Base Voltage	V_{EBO}	-6	V
Collector Current	I_C	-100	mA
Collector Power Dissipation	P_C	150	mW

Classification Of h_{FE}

Rank	BC857AT	BC857BT	BC857CT
Range	125-250	220-475	420-800
Marking	3E	3F	3G

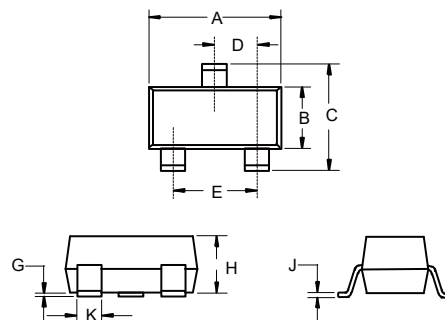
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure



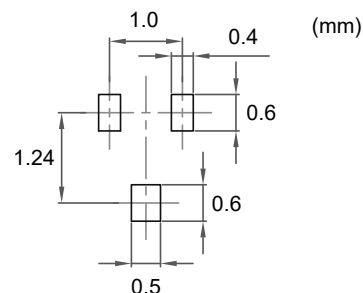
PNP Small Signal Surface Mount Transistor

SOT-523



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.059	0.067	1.50	1.70	
B	0.030	0.033	0.75	0.85	
C	0.057	0.069	1.45	1.75	
D	0.020		0.50		TYP.
E	0.035	0.043	0.90	1.10	
G	0.000	0.004	0.00	0.10	
H	0.024	0.031	0.60	0.80	
J	0.004	0.008	0.10	0.20	
K	0.006	0.014	0.15	0.35	

Suggested Solder Pad Layout



Electrical Characteristics @ 25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	-50			V	$I_C=-10\mu A, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-45			V	$I_C=-10mA, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6			V	$I_E=-1\mu A, I_C=0$
Collector-Base Cutoff Current	I_{CBO}			-15	nA	$V_{CB}=-30V, I_E=0$
Current Gain A		125		250		$V_{CE}=-5V, I_C=-2mA$
DC Current Gain B	h_{FE}	220		475		
DC Current Gain C		420		800		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-0.3	V	$I_C=-10mA, I_B=-0.5mA$
				-0.65	V	$I_C=-100mA, I_B=-5mA$
Base-Emitter Saturation Voltage	$V_{BE(sat)}$		-0.7		V	$I_C=-10mA, I_B=-0.5mA$
			-0.9		V	$I_C=-100mA, I_B=-5mA$
Base-Emitter Voltage	V_{BE}	-0.6		-0.75	V	$V_{CE}=-5V, I_C=-2mA$
				-0.82	V	$V_{CE}=-5V, I_C=-10mA$
Transition Frequency	f_T	100			MHz	$V_{CE}=-5V, I_C=-10mA, f=100MHz$
Output Capacitance	C_{ob}			4.5	pF	$V_{CB}=-10V, f=1MHz$
Noise Figure	NF			10	dB	$V_{CE}=-5V, I_C=-0.2mA$ $R_S=2K\Omega, f=1KHz, BW=200Hz$

Curve Characteristics

Fig. 1 - Static Characteristics

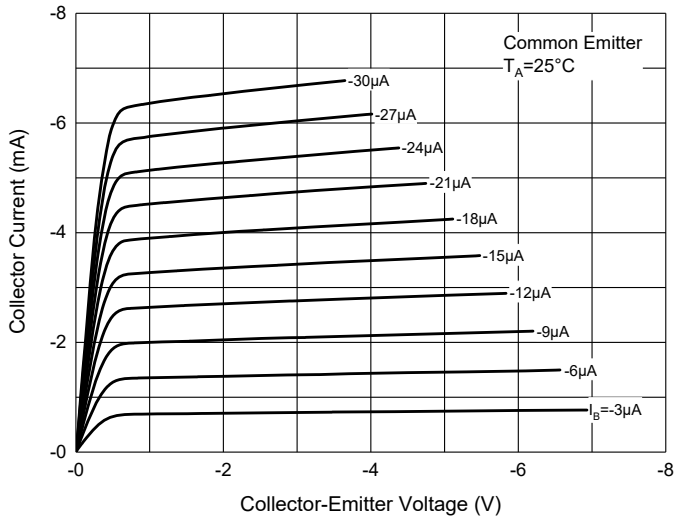


Fig. 2 - DC Current Gain Characteristics

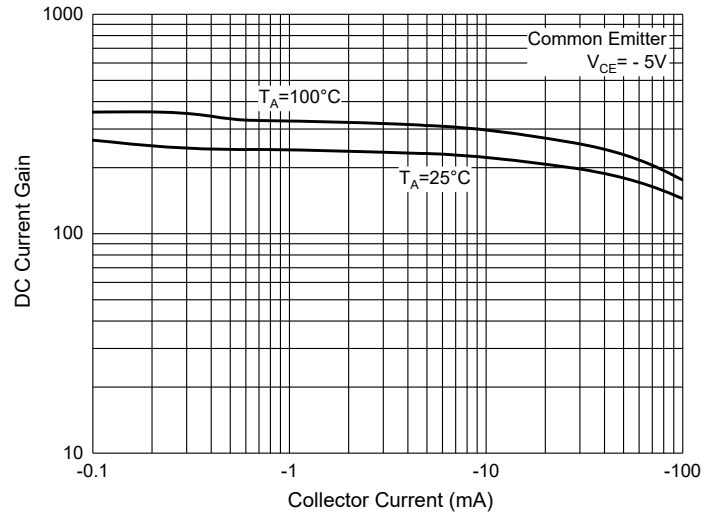


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

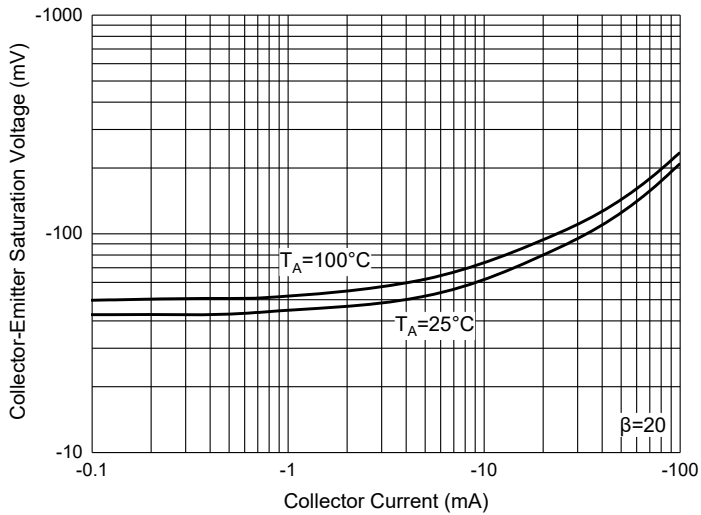


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

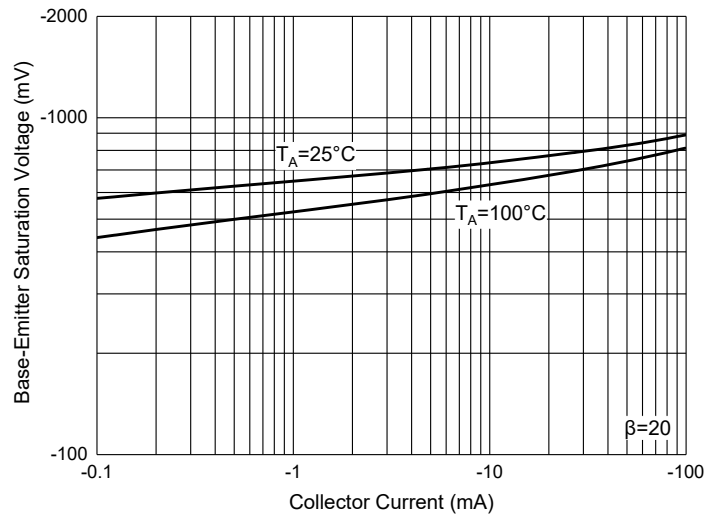


Fig. 5 - Base-Emitter Voltage Characteristics

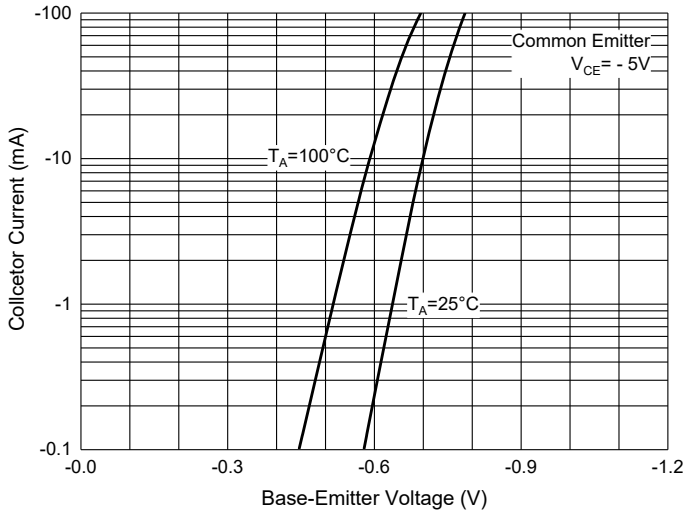
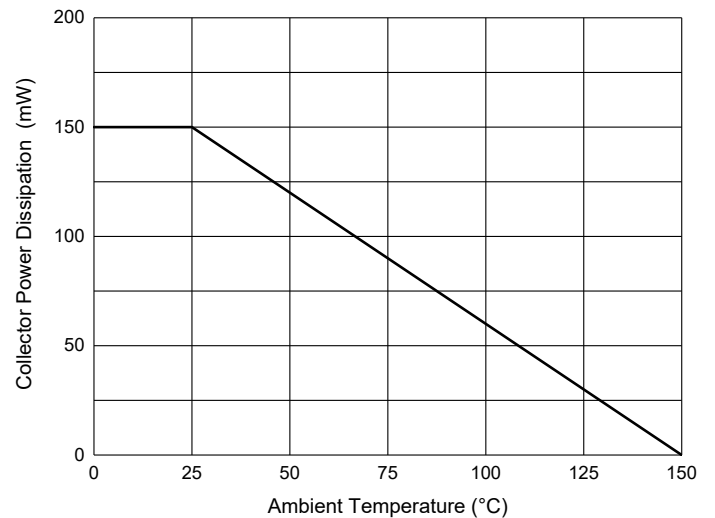


Fig. 6 - Collector Power Derating Curve



Ordering Information

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

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