

# BC818-16-TP Datasheet

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DiGi Electronics Part Number	BC818-16-TP-DG
Manufacturer	<a href="#">Micro Commercial Co</a>
Manufacturer Product Number	BC818-16-TP
Description	Interface
Detailed Description	Bipolar (BJT) Transistor NPN 25 V 500 mA 170MHz 300 mW Surface Mount SOT-23

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## Purchase and inquiry

Manufacturer Product Number:

BC818-16-TP

Series:

-

Transistor Type:

NPN

Voltage - Collector Emitter Breakdown (Max):

25 V

Current - Collector Cutoff (Max):

100nA (ICBO)

Power - Max:

300 mW

Operating Temperature:

-55°C ~ 150°C (TJ)

Package / Case:

TO-236-3, SC-59, SOT-23-3

Base Product Number:

BC818

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:

100 @ 100mA, 1V

Frequency - Transition:

170MHz

Mounting Type:

Surface Mount

Supplier Device Package:

SOT-23

## Environmental & Export classification

REACH Status:

REACH Unaffected

HTSUS:

8541.21.0075

ECCN:

EAR99

**Features**

- Halogen Free. 鈦漆reen鈦?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)

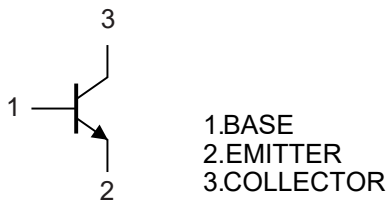
**Maximum Ratings @ 25°C Unless Otherwise Specified**

- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 417°C/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	30	V
Collector-Emitter Voltage	$V_{CEO}$	25	V
Emitter-Base Voltage	$V_{EBO}$	5	V
Continuous Collector Current	$I_C$	500	mA
Power Dissipation	$P_D$	300	mW

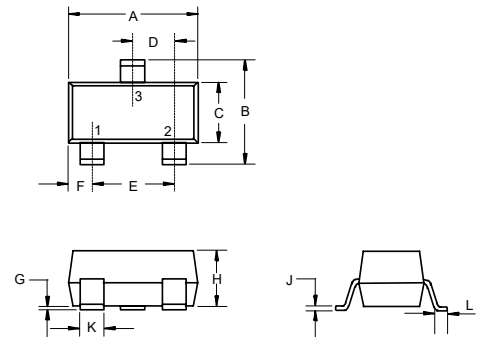
Note: 1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

**Internal Structure**



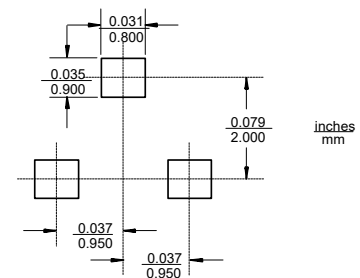
# NPN Silicon General Purpose Transistors

## SOT-23



DIM	DIMENSIONS				NOTE
	INCHES		MM		
	MIN	MAX	MIN	MAX	
A	0.110	0.120	2.80	3.04	
B	0.083	0.104	2.10	2.64	
C	0.047	0.055	1.20	1.40	
D	0.034	0.041	0.85	1.05	
E	0.067	0.083	1.70	2.10	
F	0.018	0.024	0.45	0.60	
G	0.0004	0.006	0.01	0.15	
H	0.035	0.043	0.90	1.10	
J	0.003	0.007	0.08	0.18	
K	0.012	0.020	0.30	0.51	
L	0.007	0.020	0.20	0.50	

**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	$V_{(BR)CBO}$	30			V	$I_C=10\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	25			V	$I_C=10\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	$I_E=10\mu\text{A}, I_C=0$
Collector-Base Cutoff Current	$I_{CBO}$			0.1	$\mu\text{A}$	$V_{CB}=25\text{V}, I_E=0$
Emitter-Base Cutoff Current	$I_{EBO}$			0.1	$\mu\text{A}$	$V_{EB}=4\text{V}, I_C=0$
DC Current Gain	$h_{FE(1)}$	100		630		$V_{CE}=1\text{V}, I_C=100\text{mA}$
	$h_{FE(2)}$	60				$V_{CE}=1\text{V}, I_C=300\text{mA}$
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	$f_T$		170		MHz	$V_{CE}=5\text{V}, I_C=50\text{mA}, f=100\text{MHz}$
Collector Output Capacitance	$C_{ob}$		6		pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$

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

Rank	16	25	40
Range	100-250	160-400	250-630
Marking	6E	6F	6G

### Curve Characteristics

Fig. 1 - Static Characteristics

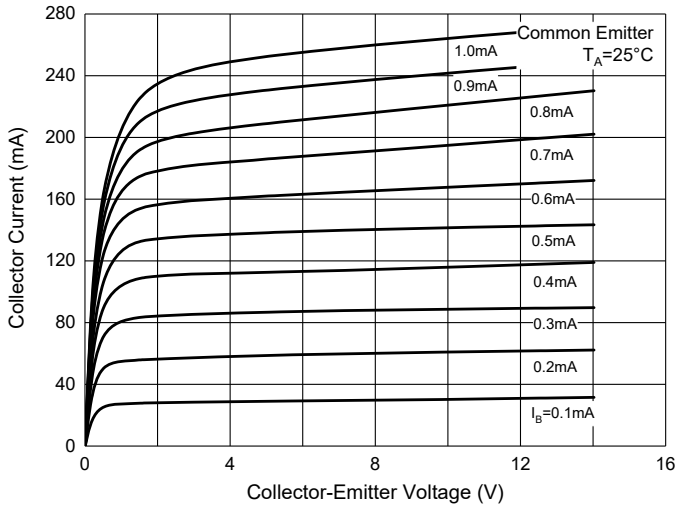


Fig. 2 - DC Current Gain Characteristics

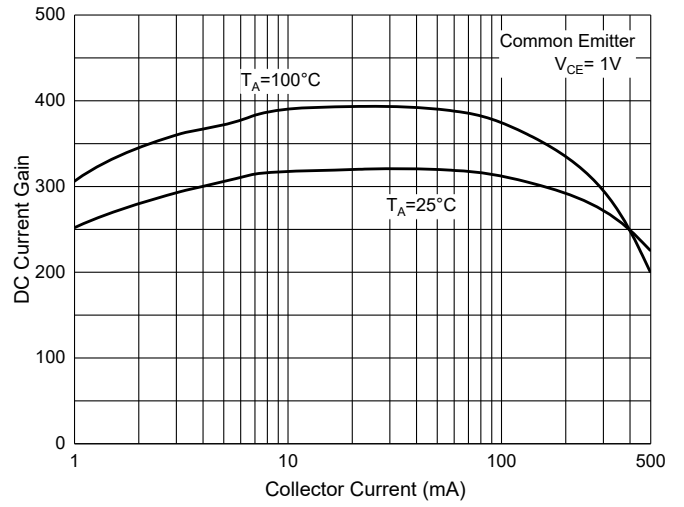


Fig. 3 - Base-Emitter Saturation Voltage Characteristics

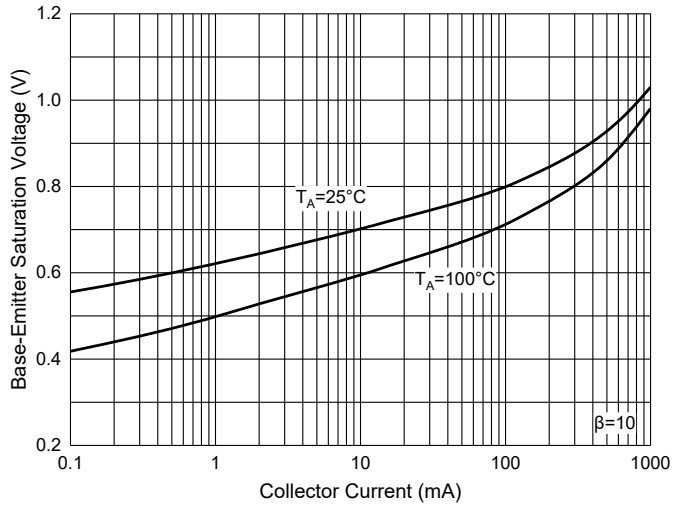


Fig. 4 - Collector-Emitter Saturation Voltage Characteristics

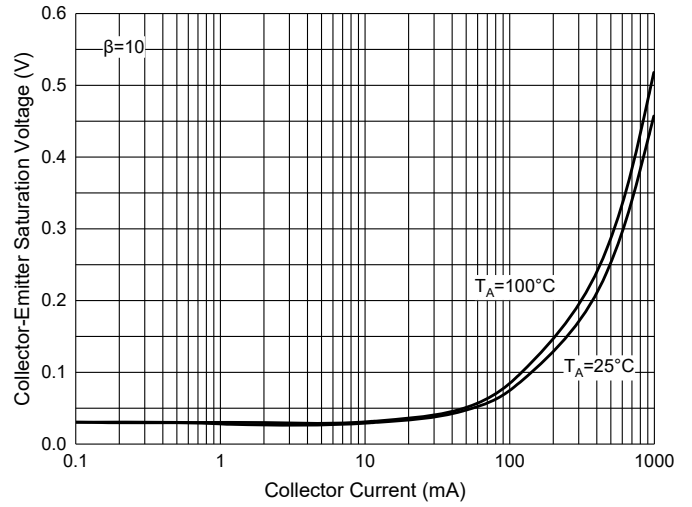


Fig. 5 - Base-Emitter Voltage Characteristics

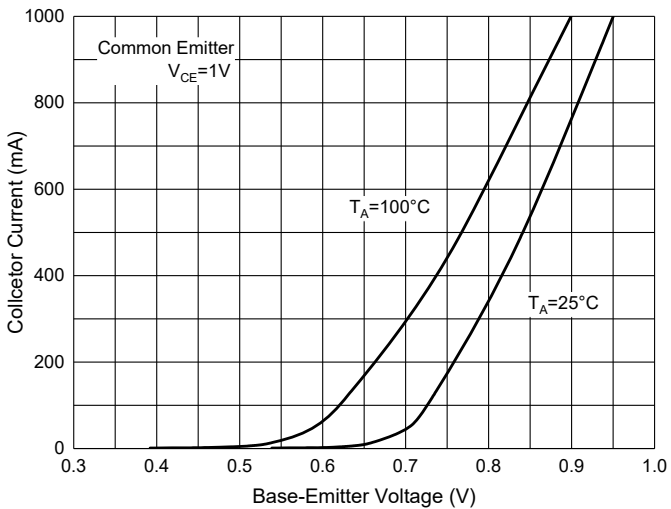
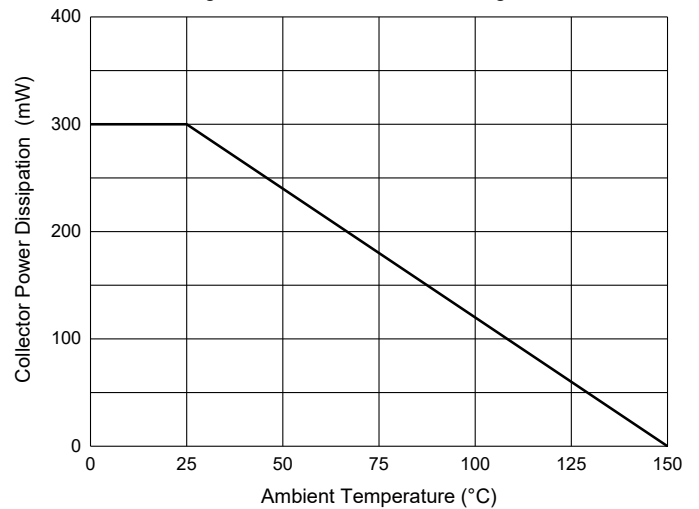


Fig. 6 - Collector Power Derating Curve



## Ordering Information

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

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