BCP54-16-TP Datasheet

DiGi Electronics Part Number	BCP54-16-TP-DG
Manufacturer	Micro Commercial Co
Manufacturer Product Number	BCP54-16-TP
Description	TRANS NPN 45V 1A SOT223
Detailed Description	Bipolar (BJT) Transistor NPN 45 V 1 A 100MHz 300 mW Surface Mount SOT-223

Tel: +00 852-30501935

RFQ Email: Info@DiGi-Electronics.com

Purchase and inquiry

Manufacturer Product Number:	Manufacturer:
BCP54-16-TP	Micro Commercial Co
Series:	Product Status:
-	Active
Transistor Type:	Current - Collector (Ic) (Max):
NPN	1 A
Voltage - Collector Emitter Breakdown (Max):	Vce Saturation (Max) @ Ib, Ic:
45 V	500mV @ 50mA, 500mA
Current - Collector Cutoff (Max):	DC Current Gain (hFE) (Min) @ Ic, Vce:
100nA (ICBO)	63 @ 150mA, 2V
Power - Max:	Frequency - Transition:
300 mW	100MHz
Operating Temperature:	Mounting Type:
-55°C ~ 150°C (TJ)	Surface Mount
Package / Case:	Supplier Device Package:
TO-261-4, TO-261AA	SOT-223
Base Product Number:	
BCP54	

Environmental & Export classification

RoHS Status:	Moisture Sensitivity Level (MSL):
ROHS3 Compliant	1 (Unlimited)
REACH Status:	ECCN:
REACH Unaffected	EAR99
HTSUS:	
8541.21.0075	

Features

- Complementary Types: BCP51 (PNP)
- 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)

NPN Plastic-Encapsulate Transistors

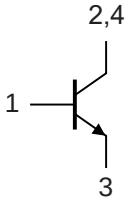
Maximum Ratings @ 25°C Unless Otherwise Specified

- Operating Junction Temperature Range: -55℃ to +150℃
- Storage Temperature Range: -55℃ to +150℃
- Thermal Resistance: 83.3℃/W Junction to Ambient

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	V_{CBO}	45	V
Collector-Emitter Voltage	V_{CEO}	45	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	1	A
Power Dissipation	P_D	1.5	W

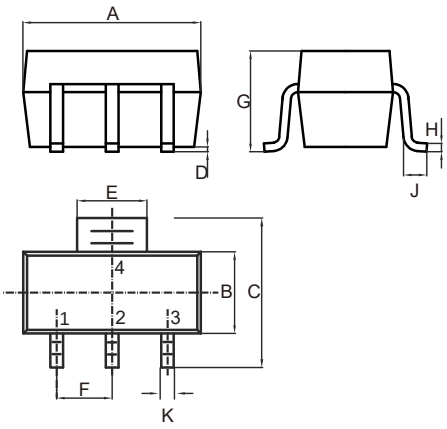
Note: 1. Halogen free "Green” products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.

Internal Structure



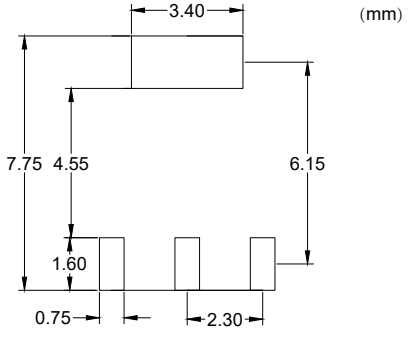
1.BASE
2,4.COLLECTOR
3.EMITTER

SOT-223



DIMENSIONS					
DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.248	0.264	6.30	6.70	
B	0.130	0.146	3.30	3.70	
C	0.264	0.287	6.70	7.30	
D	0.001	0.004	0.02	0.10	
E	0.114	0.122	2.90	3.10	
F	0.091		2.30		TYP.
G	---	0.071	---	1.80	
H	0.009	0.014	0.23	0.35	
J	0.030	---	0.75	---	
K	0.026	0.033	0.66	0.84	

Suggested Solder Pad Layout



Electrical Characteristics @ T_A=25°C Unless Otherwise Specified

Parameter	Symbol	Min	Typ	Max	Units	Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	45			V	I_C=100μA, I_E=0
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	45			V	I_C=10mA, I_B=0
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	5			V	I_E=10μA, I_C=0
Collector-Base Cutoff Current	I_{CBO}			100	nA	V_{CB}=30V, I_E=0
DC Current Gain	h_{FE1}	25				V_{CE}=2V, I_C=5mA
	h_{FE2}	63		250		V_{CE}=2V, I_C=150mA
	h_{FE3}	25				V_{CE}=2V, I_C=500mA
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			0.5	V	I_C=-500mA, I_B=50mA
Base-Emitter Voltage	V_{BE}			1	V	V_{CE}=2V, I_C=500mA
Transition Frequency	f_T	100			MHz	V_{CE}=10V, I_C=50mA, f=100MHz

Classification of $h_{FE(2)}$

Rank	BCP54-10	BCP54-16
Range	63~160	100~250

Curve Characteristics

Fig. 1 - Static Characteristics

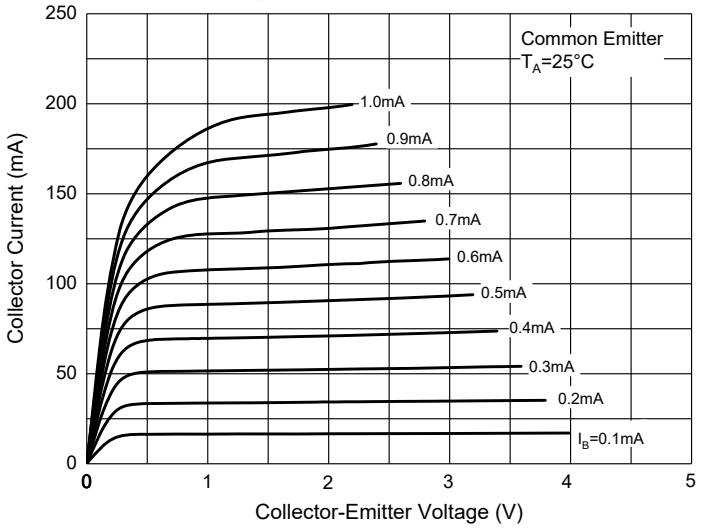


Fig. 2 - DC Current Gain Characteristics

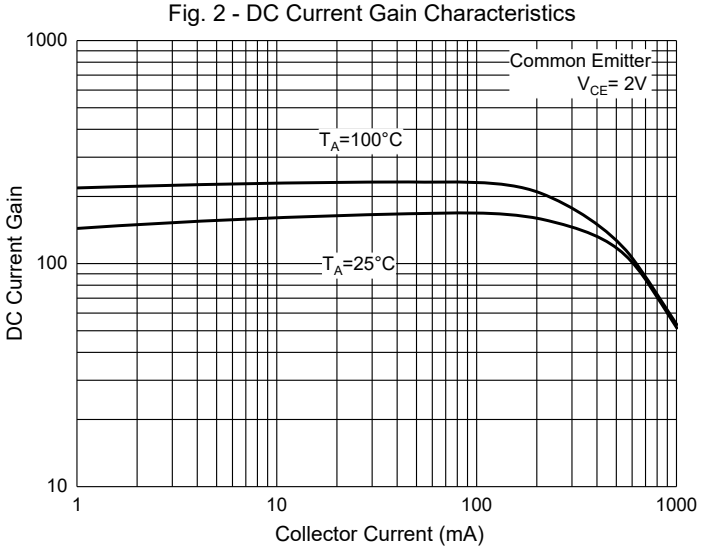


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

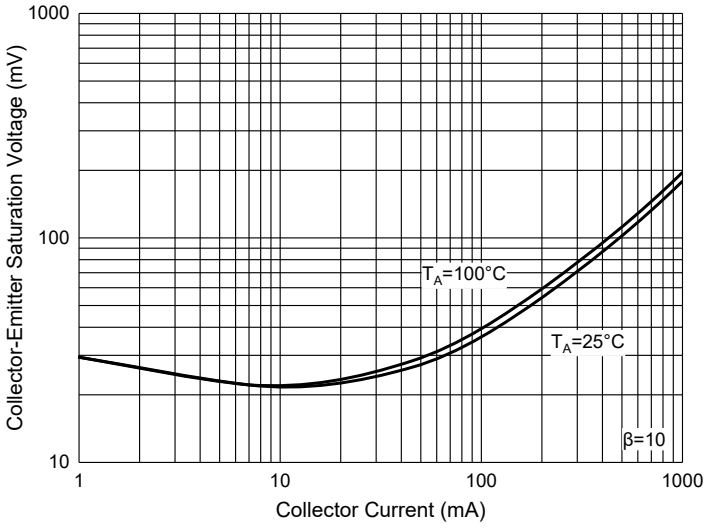


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

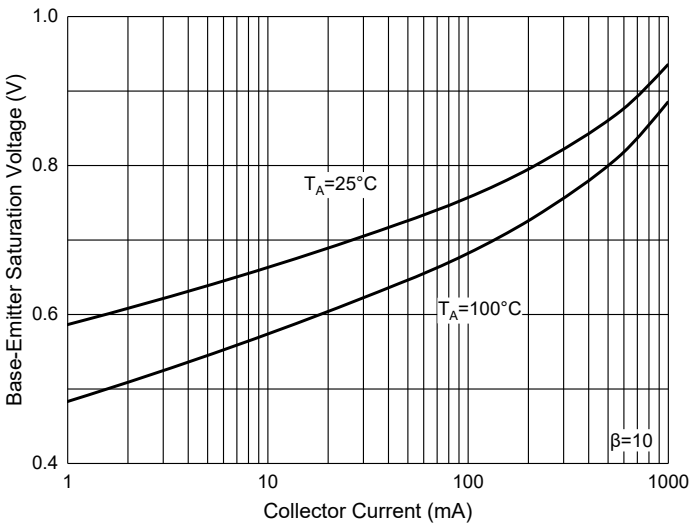


Fig. 5 - Base-Emitter Voltage Characteristics

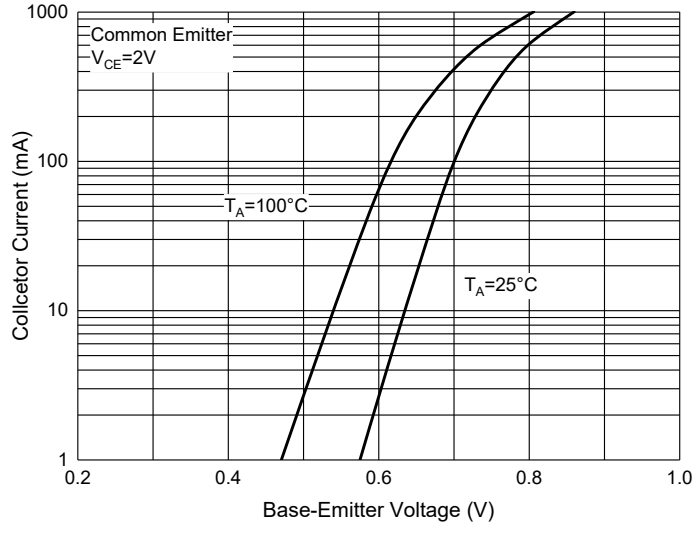
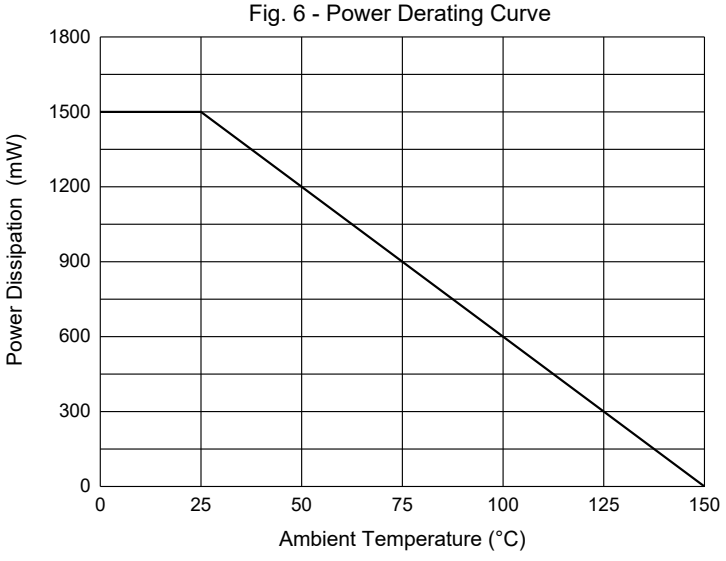


Fig. 6 - Power Derating Curve



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel: 2.5Kpcs/Reel

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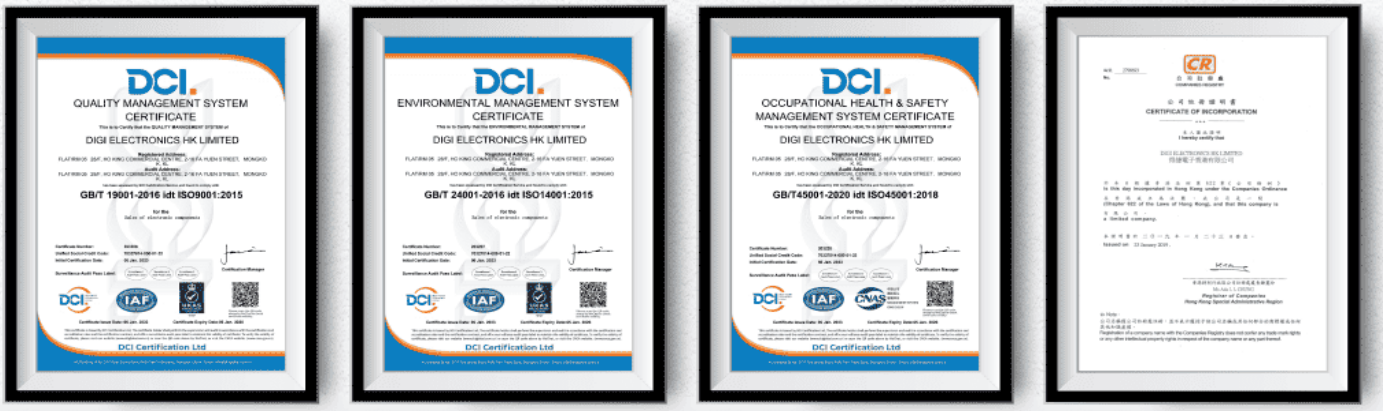

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