

# 2SB1412-Q-TP Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



DiGi Electronics Part Number

2SB1412-Q-TP-DG

Manufacturer

[Micro Commercial Co](#)

Manufacturer Product Number

2SB1412-Q-TP

Description

TRANS PNP 30V 5A DPAK

Detailed Description

Bipolar (BJT) Transistor PNP 30 V 5 A 120MHz 1 W S  
urface Mount DPAK

<https://www.DiGi-Electronics.com>



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.



## Purchase and inquiry

Manufacturer Product Number:

2SB1412-Q-TP

Series:

-

Transistor Type:

PNP

Voltage - Collector Emitter Breakdown (Max):

30 V

Current - Collector Cutoff (Max):

500nA (ICBO)

Power - Max:

1 W

Operating Temperature:

150°C (TJ)

Package / Case:

TO-252-3, DPAK (2 Leads + Tab), SC-63

Base Product Number:

2SB1412

Manufacturer:

Micro Commercial Co

Product Status:

Active

Current - Collector (Ic) (Max):

5 A

Vce Saturation (Max) @ Ib, Ic:

1V @ 100mA, 4A

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

82 @ 500mA, 2V

Frequency - Transition:

120MHz

Mounting Type:

Surface Mount

Supplier Device Package:

DPAK

## Environmental & Export classification

RoHS Status:

ROHS3 Compliant

REACH Status:

REACH Unaffected

HTSUS:

8541.29.0075

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

EAR99

## Features

- Low Collector Saturation Voltage
- Excellent Current-to-Gain Characteristics
- Halogen Free ."Green" Device<sup>(Note 1)</sup>
- 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: 125°C/W Junction to Ambient

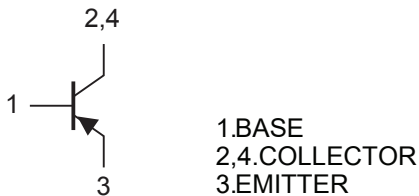
Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	-30	V
Collector-Emitter Voltage	$V_{CEO}$	-20	V
Emitter-Base Voltage	$V_{EBO}$	-6	V
Continuous Collector Current	$I_C$	-5	A
Power Dissipation	$P_D$	1	W

### Note:

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

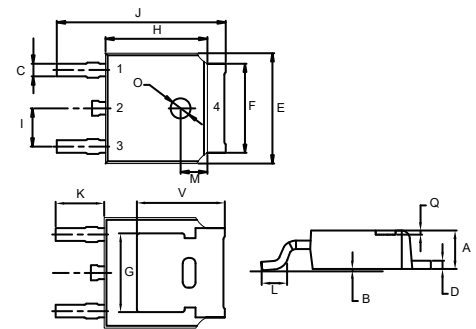
## Marking: B1412

## Internal Structure



# PNP Silicon Epitaxial Transistors

## DPAK(TO-252)



## DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.087	0.094	2.20	2.40	
B	0.000	0.005	0.00	0.13	
C	0.026	0.034	0.66	0.86	
D	0.018	0.023	0.46	0.58	
E	0.256	0.264	6.50	6.70	
F	0.201	0.215	5.10	5.46	
G	0.190		4.83		TYP.
H	0.236	0.244	6.00	6.20	
I	0.086	0.094	2.18	2.39	
J	0.386	0.409	9.80	10.40	
K	0.114		2.90		TYP.
L	0.055	0.067	1.40	1.70	
M	0.063		1.60		TYP.
O	0.043	0.051	1.10	1.30	
Q	0.000	0.012	0.00	0.30	
V	0.211		5.35		TYP.

**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	$I_C=-50\mu\text{A}$ , $I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	-20			V	$I_C=-1\text{mA}$ , $I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	-6			V	$I_E=-50\mu\text{A}$ , $I_C=0$
Collector Cutoff Current	$I_{CBO}$			-0.5	$\mu\text{A}$	$V_{CB}=-20\text{V}$ , $I_E=0$
Emitter Cutoff Current	$I_{EBO}$			-0.5	$\mu\text{A}$	$V_{EB}=-5\text{V}$ , $I_C=0$
DC Current Gain	$h_{FE}$	82		390		$V_{CE}=-2\text{V}$ , $I_C=-0.5\text{A}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$			-1.0	V	$I_C=-4\text{A}$ , $I_B=-100\text{mA}$
Transition Frequency	$f_T$		120		MHz	$V_{CE}=-6\text{V}$ , $I_C=-500\text{mA}$ , $f=30\text{MHz}$
Collector Output Capacitance	$C_{ob}$		60		pF	$V_{CB}=-20\text{V}$ , $I_E=0$ , $f=1\text{MHz}$

**Classification of  $h_{FE}$** 

Rank	P	Q	R
Range	82-180	120-270	180-390

### Curve Characteristics

Fig. 1 - Static Characteristics

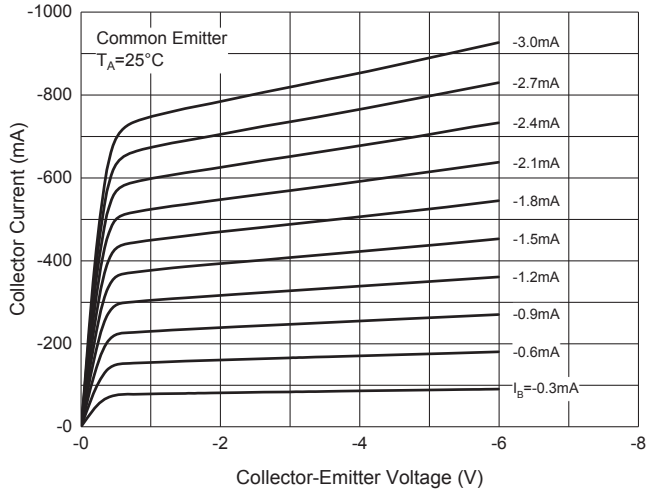


Fig. 2 - DC Current Gain Characteristics

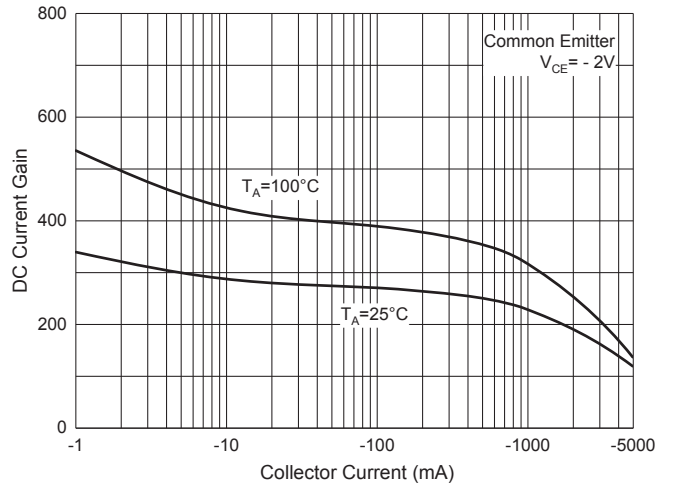


Fig. 3 - Collector-Emitter Saturation Voltage Characteristics

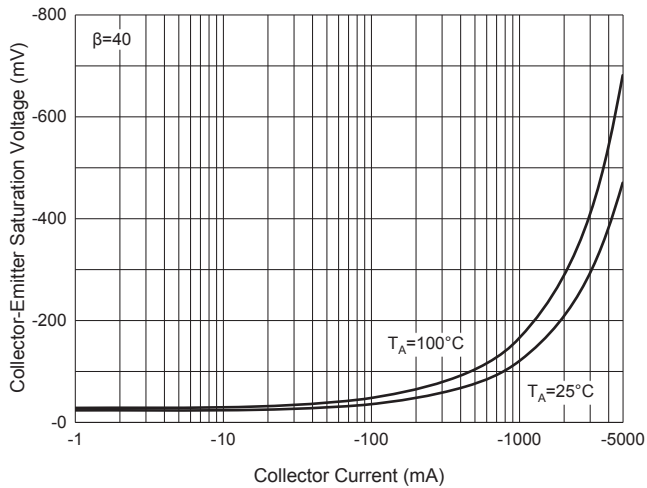


Fig. 4 - Base-Emitter Saturation Voltage Characteristics

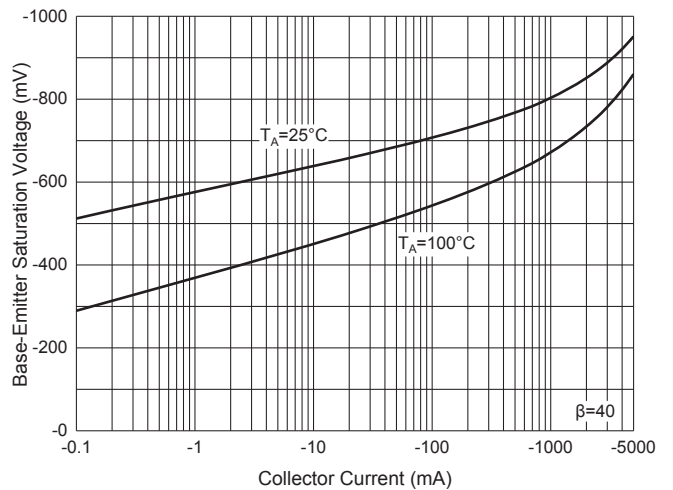


Fig. 5 - Transition frequency Characteristics

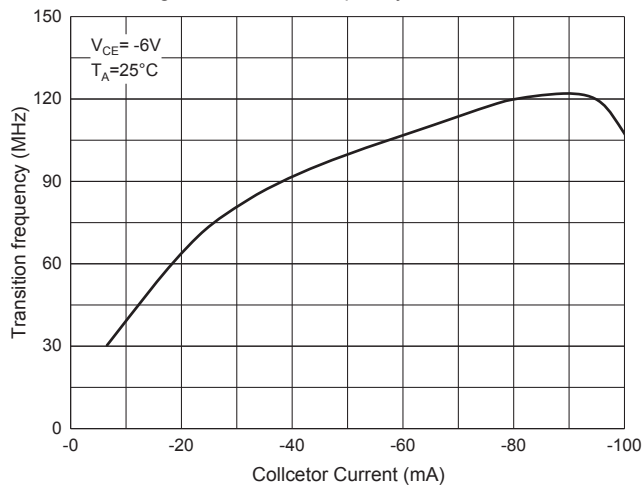
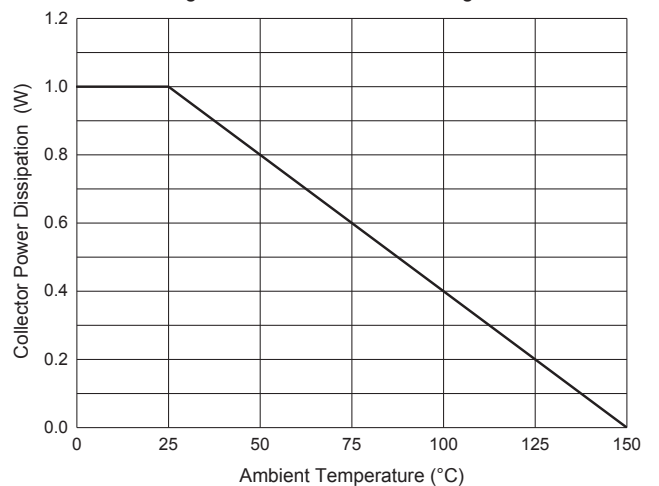


Fig. 6 - Collector Power Derating Curve



## Ordering Information

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

### \*\*\*IMPORTANT NOTICE\*\*\*

**Micro Commercial Components Corp.** reserves the right to make changes without further notice to any product herein to make corrections, modifications, enhancements, improvements, or other changes. **Micro Commercial Components Corp.** does not assume any liability arising out of the application or use of any product described herein; neither does it convey any license under its patent rights, nor the rights of others. The user of products in such applications shall assume all risks of such use and will agree to hold **Micro Commercial Components Corp.** and all the companies whose products are represented on our website, harmless against all damages. **Micro Commercial Components Corp.** products are sold subject to the general terms and conditions of commercial sale, as published at <https://www.mccsemi.com/Home/TermsAndConditions>.

### \*\*\*LIFE SUPPORT\*\*\*

MCC's products are not authorized for use as critical components in life support devices or systems without the express written approval of Micro Commercial Components Corporation.

### \*\*\*CUSTOMER AWARENESS\*\*\*

Counterfeiting of semiconductor parts is a growing problem in the industry. Micro Commercial Components (MCC) is taking strong measures to protect ourselves and our customers from the proliferation of counterfeit parts. MCC strongly encourages customers to purchase MCC parts either directly from MCC or from Authorized MCC Distributors who are listed by country on our web page cited below. Products customers buy either from MCC directly or from Authorized MCC Distributors are genuine parts, have full traceability, meet MCC's quality standards for handling and storage. **MCC will not provide any warranty coverage or other assistance for parts bought from Unauthorized Sources.** MCC is committed to combat this global problem and encourage our customers to do their part in stopping this practice by buying direct or from authorized distributors.



## OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we stricly control the quality of products and services. Welcome your RFQ to

Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.