



**2SC4081-A  
 2SC4081-B  
 2SC4081-C**

**NPN Silicon  
 Epitaxial Transistors**

**Features**

- Lead Free Finish/RoHS Compliant ("P" Suffix designates RoHS Compliant. See ordering information)
- Low Cob . Cob=2.0pF(Typ)
- Complementary to 2SC1576A
- Epoxy meets UL 94 V-0 flammability rating
- Moisture Sensitivity Level 1
- Halogen free available upon request by adding suffix "-HF"

**Maximum Ratings**

Symbol	Rating	Rating	Unit
V <sub>CEO</sub>	Collector-Emitter Voltage	50	V
V <sub>CBO</sub>	Collector-Base Voltage	60	V
V <sub>EBO</sub>	Emitter-Base Voltage	7	V
I <sub>C</sub>	Collector Current	150	mA
P <sub>C</sub>	Collector power dissipation	200	mW
T <sub>J</sub>	Junction Temperature	150	°C
T <sub>STG</sub>	Storage Temperature	-55 to +150	°C

**Electrical Characteristics @ 25°C Unless Otherwise Specified**

Symbol	Parameter	Min	Typ	Max	Units
--------	-----------	-----	-----	-----	-------

**OFF CHARACTERISTICS**

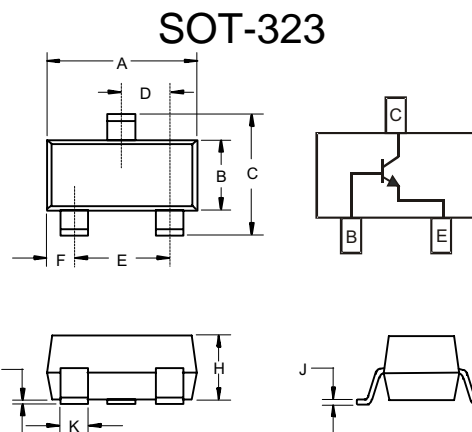
I <sub>CBO</sub>	Collector Cutoff Current (V <sub>CB</sub> =60Vdc, I <sub>E</sub> =0)	---	---	100	nAdc
I <sub>EBO</sub>	Emitter Cutoff Current (V <sub>EB</sub> =7.0Vdc, I <sub>C</sub> =0)	---	---	100	nAdc

**ON CHARACTERISTICS**

BV <sub>CBO</sub>	Collector-base breakdown voltage (I <sub>C</sub> =50μAdc, I <sub>E</sub> =0)	60	---	---	Vdc
BV <sub>CEO</sub>	Collector-emitter breakdown voltage (I <sub>C</sub> =1mAdc, I <sub>B</sub> =0)	50	---	---	Vdc
BV <sub>EBO</sub>	Emitter-base breakdown voltage (I <sub>E</sub> =50μAdc, I <sub>C</sub> =0)	7	---	---	Vdc
h <sub>FE</sub>	DC Current Gain (I <sub>C</sub> =1mAdc, V <sub>CE</sub> =6.0Vdc)	120	---	560	---
V <sub>CE(sat)</sub>	Collector Saturation Voltage (I <sub>C</sub> =50mAdc, I <sub>B</sub> =5.0mAdc)	---	---	0.4	Vdc
C <sub>ob</sub>	Output Capacitance (V <sub>CB</sub> =12.0Vdc, I <sub>E</sub> =0, f=1.0MHz)	---	2.0	3.5	pF
f <sub>T</sub>	Gain Bandwidth product (V <sub>CE</sub> =12Vdc, I <sub>C</sub> =2mAdc, f=30MHz)	---	180	---	MHz

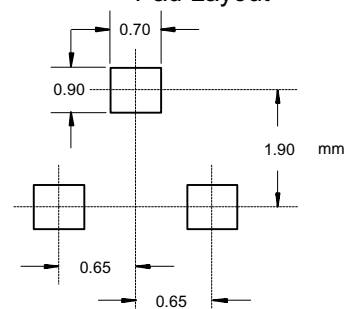
**h<sub>FE</sub> CLASSIFICATION**

Rank	A	B	C
Marking	BQ	BR	BS
h <sub>FE</sub>	120~270	180~390	270~560



DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	.071	.087	1.80	2.20	
B	.045	.053	1.15	1.35	
C	.083	.096	2.10	2.45	
D	.026 Nominal		0.65Nominal		
E	.047	.055	1.20	1.40	
F	.012	.016	.30	.40	
G	.000	.004	.000	.100	
H	.035	.039	.90	1.00	
J	.004	.010	.100	.250	
K	.006	.016	.15	.40	

**Suggested Solder Pad Layout**



# 2SC4081

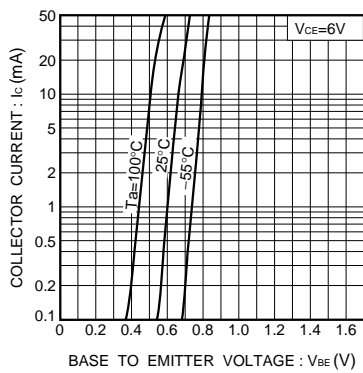


Fig.1 Grounded emitter propagation characteristics

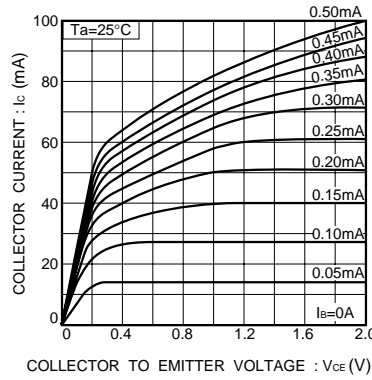


Fig.2 Grounded emitter output characteristics ( I )

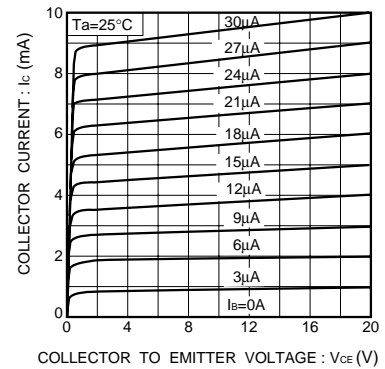


Fig.3 Grounded emitter output characteristics ( II )

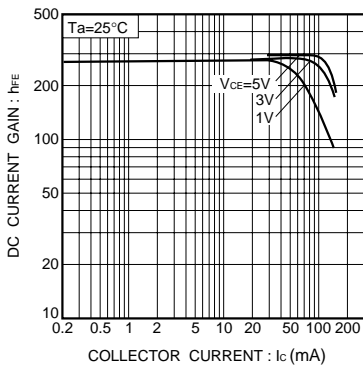


Fig.4 DC current gain vs. collector current ( I )

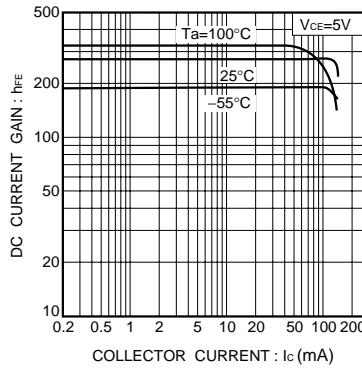


Fig.5 DC current gain vs. collector current ( II )

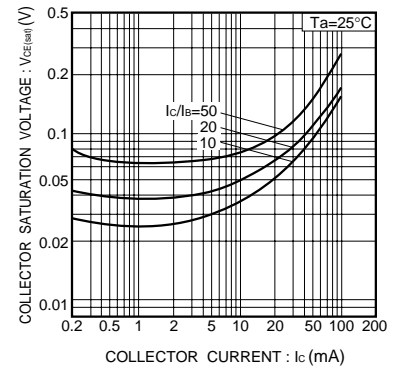


Fig. 6 Collector-emitter saturation voltage vs. collector current

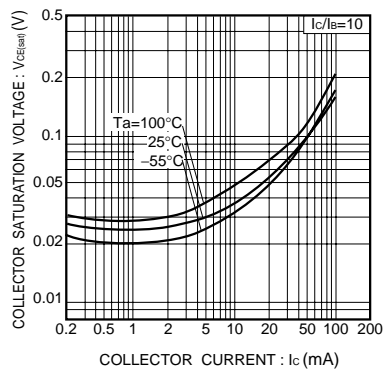


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

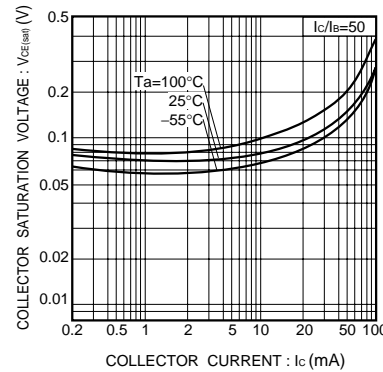


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

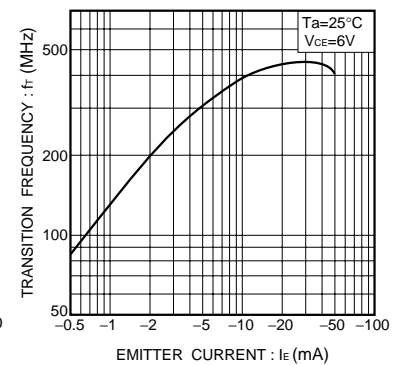


Fig.9 Gain bandwidth product vs. emitter current

## 2SC4081

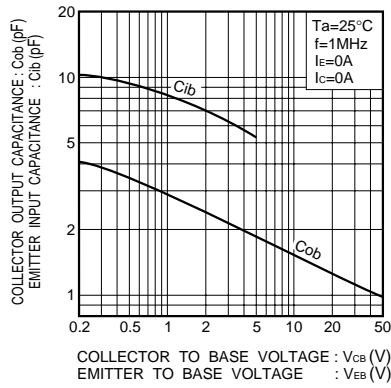


Fig.10 Collector output capacitance vs. collector-base voltage  
 Emitter input capacitance vs. emitter-base voltage

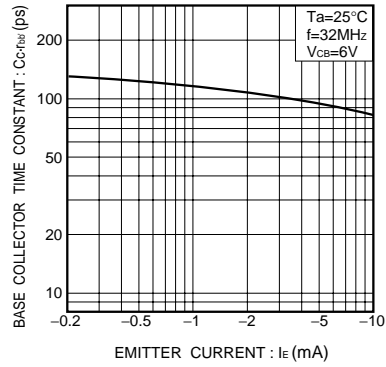


Fig.11 Base-collector time constant vs. emitter current



Micro Commercial Components

Ordering Information :

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

Note : Adding "-HF" suffix for halogen free, eg. Part Number-TP-HF

\*\*\*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.

\*\*\*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.