



**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
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**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

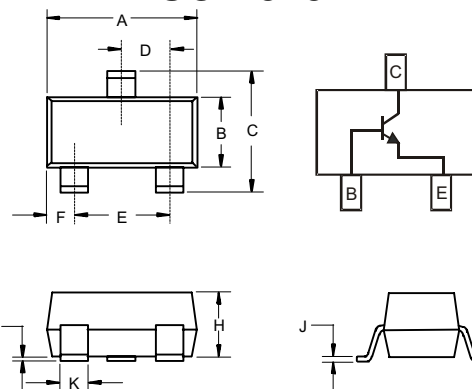
**ON CHARACTERISTICS**

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

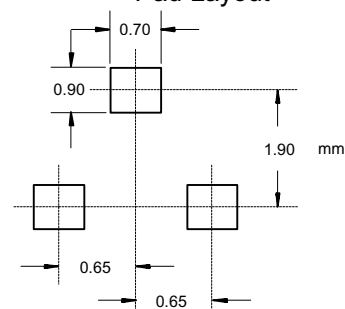
**SOT-323**



**DIMENSIONS**

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

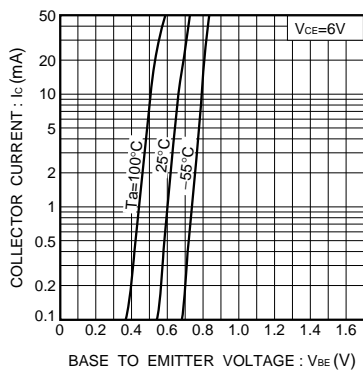


Fig.1 Grounded emitter propagation characteristics

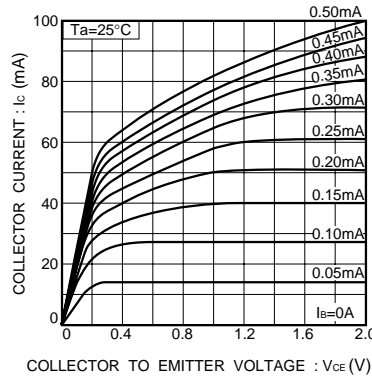


Fig.2 Grounded emitter output characteristics ( I )

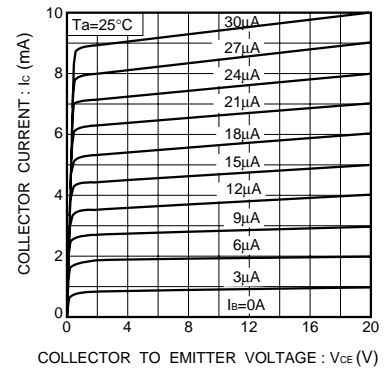


Fig.3 Grounded emitter output characteristics ( II )

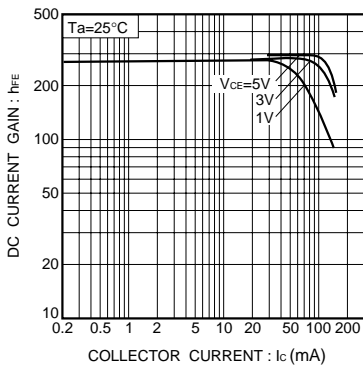


Fig.4 DC current gain vs. collector current ( I )

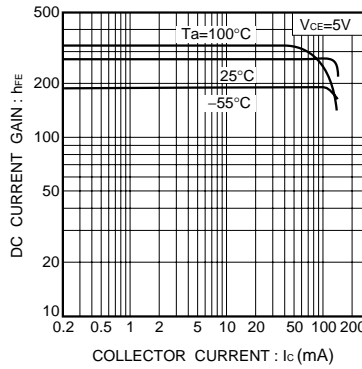


Fig.5 DC current gain vs. collector current ( II )

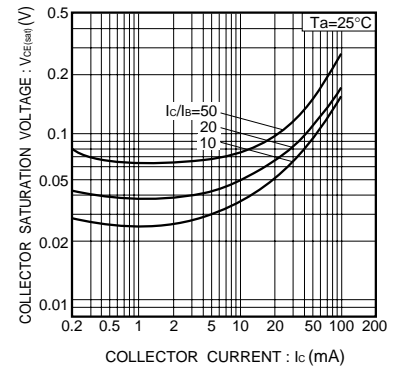


Fig. 6 Collector-emitter saturation voltage vs. collector current

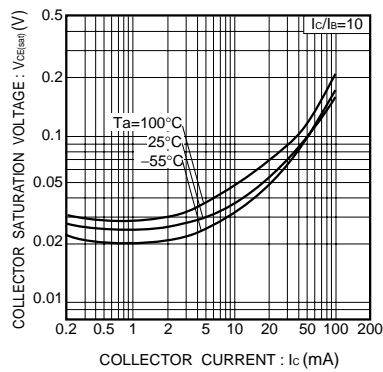


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

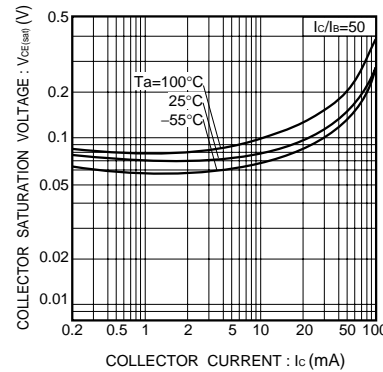


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

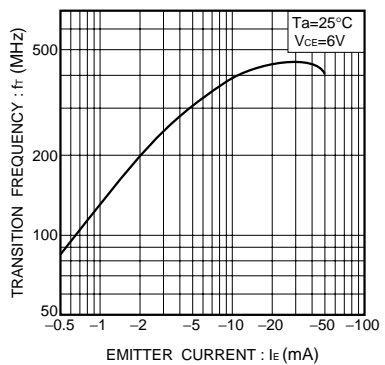


Fig.9 Gain bandwidth product vs. emitter current

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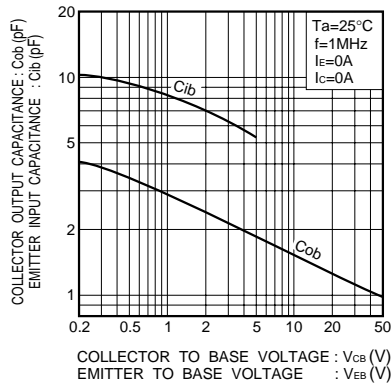


Fig.10 Collector output capacitance vs. collector-base voltage  
 Emitter input capacitance vs. emitter-base voltage

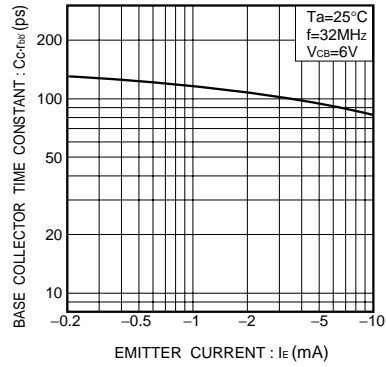


Fig.11 Base-collector time constant vs. emitter current



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## Ordering Information :

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

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

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