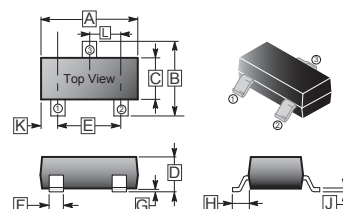


RoHS Compliant Product  
A suffix of "-C" specifies halogen & lead-free

## FEATURES

- Low Cob. Cob=2.0pF (Typ.)
- Excellent  $h_{FE}$  linearity
- Complementary to 2SA1576A

## SOT-323



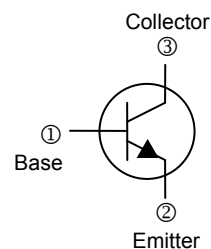
## CLASSIFICATION OF $h_{FE}$

Product-Rank	2SC4081F-Q	2SC4081F-R	2SC4081F-S
Range	120~270	180~390	270~560
Marking	BQ	BR	BS

REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	1.80	2.20	G	0.100	REF.
B	1.80	2.45	H	0.525	REF.
C	1.15	1.35	J	0.08	0.25
D	0.80	1.10	K	-	-
E	1.20	1.40	L	0.650	TYP.
F	0.20	0.40			

## PACKAGE INFORMATION

Package	MPQ	Leader Size
SOT-323	3K	7' inch



## ABSOLUTE MAXIMUM RATINGS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Rating	Unit
Collector-Base Voltage	$V_{CBO}$	60	V
Collector-Emitter Voltage	$V_{CEO}$	50	V
Emitter-Base Voltage	$V_{EBO}$	7	V
Collector Current	$I_C$	150	mA
Collector Power Dissipation	$P_C$	200	mW
Junction & Storage temperature	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

## ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	60	-	-	V	$I_C=50\mu\text{A}, I_E=0$
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	50	-	-	V	$I_C=1\text{mA}, I_B=0$
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	7	-	-	V	$I_E=50\mu\text{A}, I_C=0$
Collector Cut-Off Current	$I_{CBO}$	-	-	0.1	$\mu\text{A}$	$V_{CB}=60\text{V}, I_E=0$
Emitter Cut-off Current	$I_{EBO}$	-	-	0.1	$\mu\text{A}$	$V_{EB}=7\text{V}, I_C=0$
DC Current Gain	$h_{FE}$	120	-	560		$V_{CE}=6\text{V}, I_C=1\text{mA}$
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	-	-	0.4	V	$I_C=50\text{mA}, I_B=5\text{mA}$
Transition Frequency	$f_T$	-	180	-	MHz	$V_{CE}=12\text{V}, I_C=2\text{mA}, f=30\text{MHz}$
Collector Output Capacitance	$C_{ob}$	-	-	3.5	pF	$V_{CB}=12\text{V}, I_E=0, f=1\text{MHz}$

**CHARACTERISTIC CURVES**

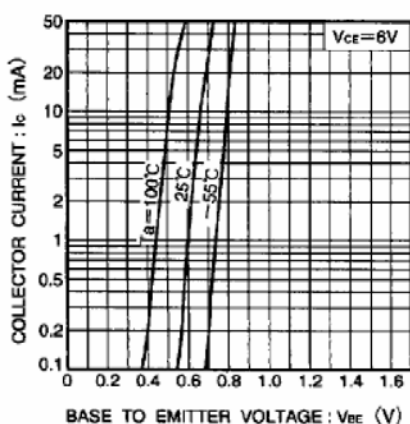


Fig.1 Grounded emitter propagation characteristics

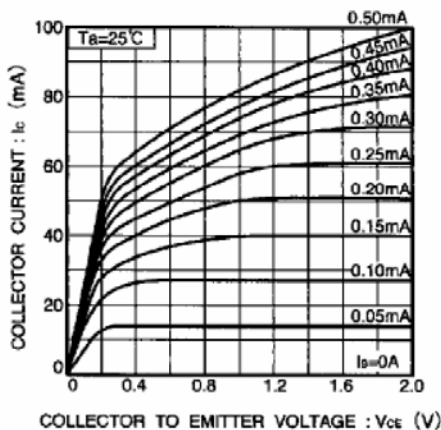


Fig.2 Grounded emitter output characteristics ( I )

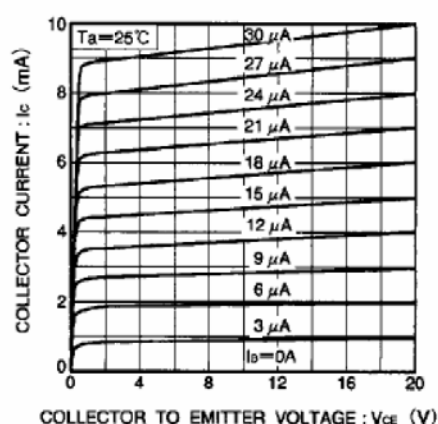


Fig.3 Grounded emitter output characteristics ( II )

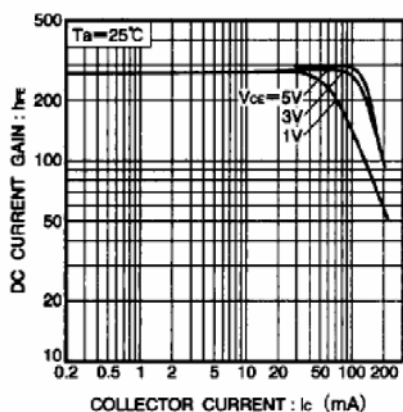


Fig.4 DC current gain vs. collector current ( I )

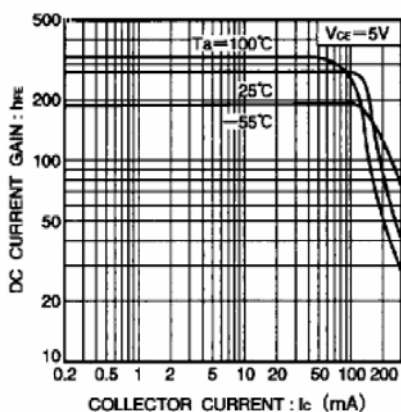


Fig.5 DC current gain vs. collector current ( II )

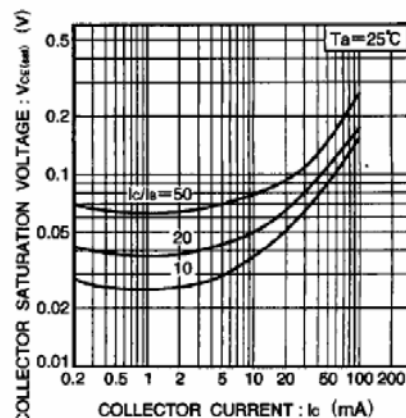


Fig.6 Collector-emitter saturation voltage vs. collector current

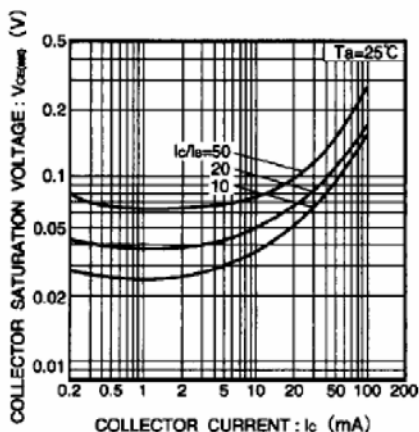


Fig.7 Collector-emitter saturation voltage vs. collector current ( I )

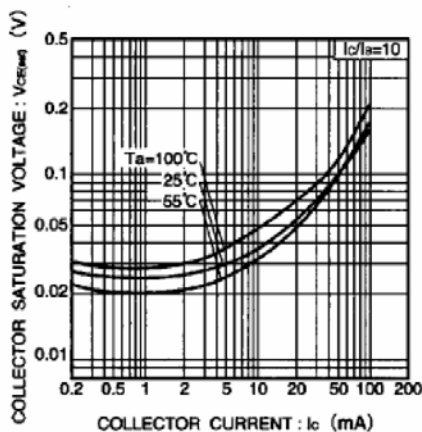


Fig.8 Collector-emitter saturation voltage vs. collector current ( II )

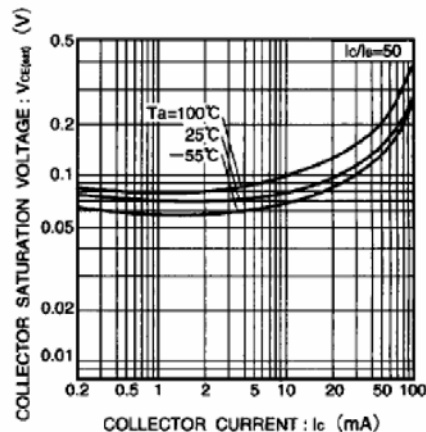


Fig.9 Collector-emitter saturation voltage vs. collector current ( III )

**CHARACTERISTIC CURVES**

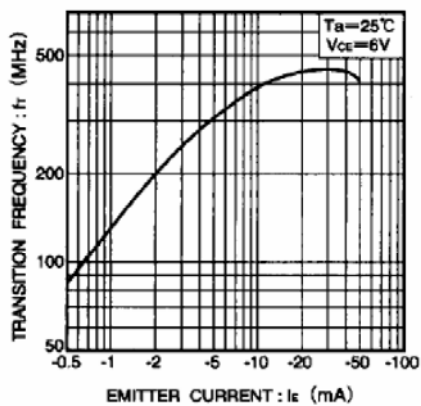


Fig.10 Gain bandwidth product vs. emitter current

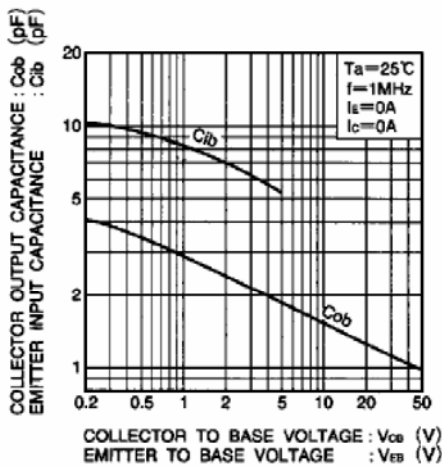


Fig.11 Collector output capacitance vs. collector-base voltage  
Emitter input capacitance vs. emitter-base voltage

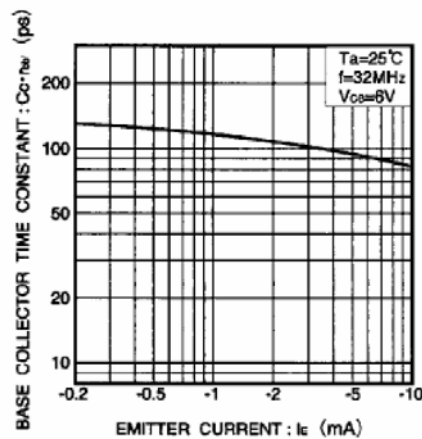


Fig.12 Base-collector time constant vs. emitter current