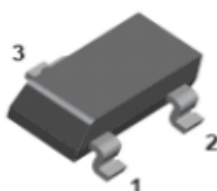
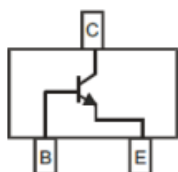


NPN General Purpose Amplifier



SOT-323

Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for automatic insertion

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-323
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102

■ Maximum Ratings ($T_a=25^{\circ}\text{C}$ Unless otherwise specified)

Item	Symbol	Unit	Conditions	Value
Device marking code			2SC4097-Q	ANQ
			2SC4097-R	ANR
Collector-base voltage	V_{CBO}	V	$I_C=100\mu\text{A}, I_E=0$	40
Collector-emitter voltage	V_{CEO}	V	$I_C=1\text{mA}, I_B=0$	32
Emitter-base voltage	V_{EBO}	V	$I_E=100\mu\text{A}, I_C=0$	5
Collector current	I_C	A		0.5
Power dissipation	P_D	mW		200
Junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150



2SC4097

RoHS
COMPLIANT

■ Electrical Characteristics (T_a=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V _{(BR)CBO}	V	I _C =100μA, I _E =0	40		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	32		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100μA, I _C =0	5		
Collector-base cut-off current	I _{CBO}	uA	V _{CB} =20V			0.1
Emitter-base cut-off current	I _{EBO}	uA	V _{EB} =4V			0.1
DC current gain	h _{FE}		2SC4097-Q	120		270
			2SC4097-R	180		390
			V _{CE} =3V, I _C =100mA			
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =500mA, I _B =50mA			0.6
Transition frequency	f _T	MHz	V _{CE} =5V, I _C =20mA, f=100MHz		250	
Collector-base output capacitance	Cob	pF	V _{CB} =10V, I _E =0A, f=1MHz		3	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	RθJ-A ⁽¹⁾	°C/W	625
Thermal resistance, junction-to-case	RθJ-C ⁽¹⁾	°C/W	500

Note:

(1) Device mounted on PCB, single-sided copper, with standard footprint

■ Characteristics

Fig 1: Static Characteristics

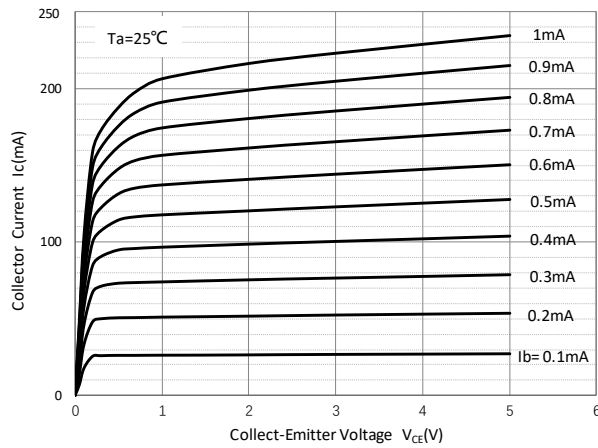


Fig 2: DC Current Gain

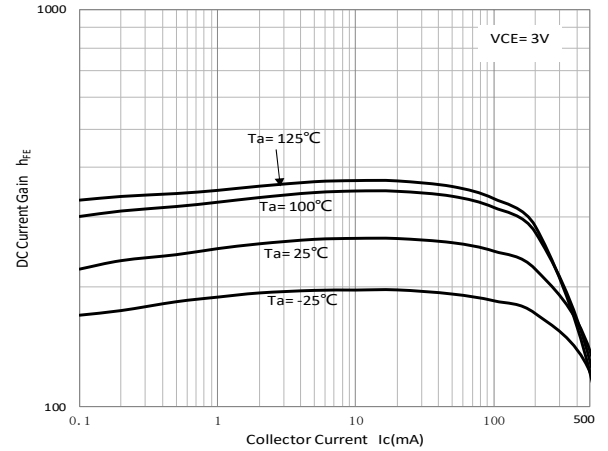


Fig 3: Collector-Emitter Saturation Voltage

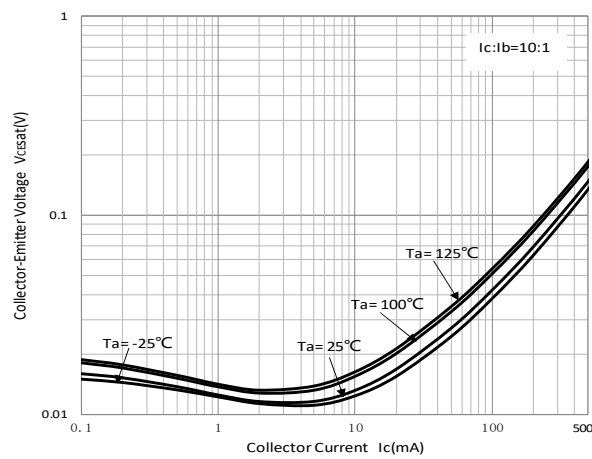


Fig 4: Base-Emitter Saturation Voltage

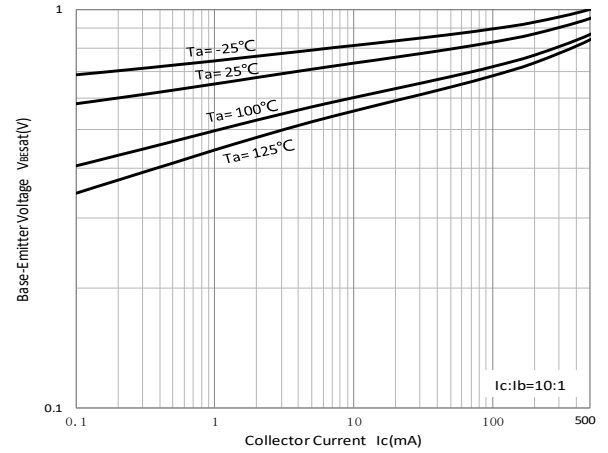


Fig 5: Base-Emitter On Voltage

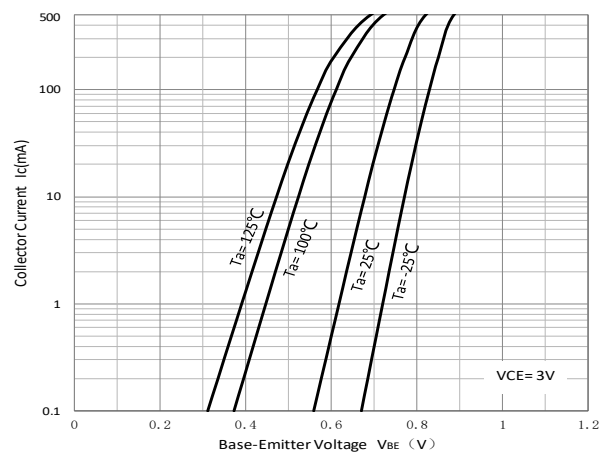


Fig 6: Cob/Cib-V_{CB}/V_{EB}

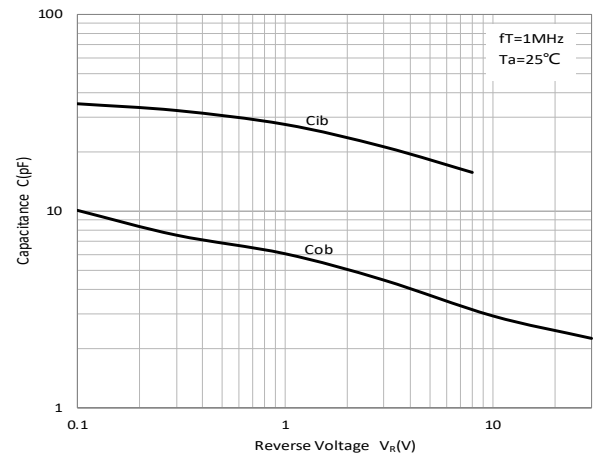
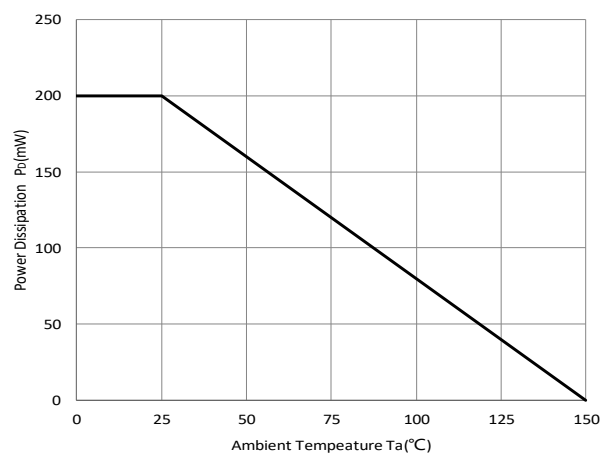




Fig 7: P_D - T_a Curve





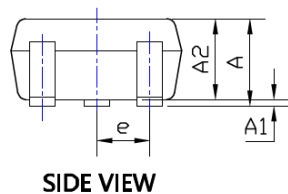
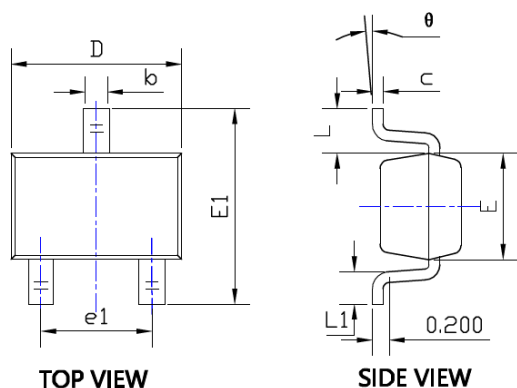
2SC4097

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■ Ordering Information

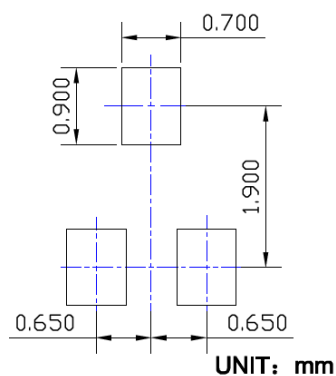
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
2SC4097	F2	Approximate 0.005	3000	30000	120000	7" reel

■ Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.043	0.900	1.100
A1	0.000	0.004	0.000	0.100
A2	0.035	0.039	0.900	1.000
b	0.006	0.016	0.150	0.400
C	0.004	0.010	0.100	0.250
D	0.071	0.087	1.800	2.200
E	0.045	0.053	1.150	1.350
E1	0.085	0.096	2.150	2.450
e	0.026TYP		0.650TYP	
e1	0.047	0.055	1.200	1.400
L	0.021REF		0.525REF	
L1	0.010	0.018	0.260	0.460
θ	0°	8°	0°	8°

■ Suggested Pad Layout





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