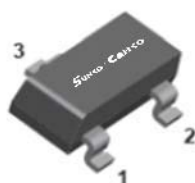
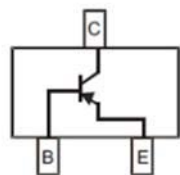


2SA1037K

PNP Transistor



SOT-23-3L

Features

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

Application

- Signal amplification
- Switching circuit

Mechanical data

- **Package:** SOT-23-3L
- **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			2SA1037K-Q	FQ
			2SA1037K-R	FR
			2SA1037K-S	FS
Collector-base voltage	V_{CBO}	V	$I_C=-50\mu\text{A}, I_E=0$	-60
Collector-emitter voltage	V_{CEO}	V	$I_C=-1\text{mA}, I_B=0$	-50
Emitter-base voltage	V_{EBO}	V	$I_E=-50\mu\text{A}, I_C=0$	-6
Collector current	I_C	A		-0.15
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

2SA1037K

■ 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 =-50μA, I _E =0	-60		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =-1mA, I _B =0	-50		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =-50μA, I _C =0	-6		
Collector-base cut-off current	I _{CBO}	μA	V _{CB} =-60V			-0.1
Emitter-base cut-off current	I _{EBO}	μA	V _{EB} =-6V			-0.1
DC current gain	h _{FE}		2SA1037K-Q	120		270
			2SA1037K-R	180		390
			2SA1037K-S	270		560
Collector-emitter saturation voltage	V _{CE(sat)}	V	I _C =-50mA, I _B =-5mA			-0.5
Transition frequency	f _T	MHz	V _{CE} =-12V, I _C =-2mA, f=30MHz		140	
Collector-base output capacitance	C _{ob}	pF	V _{CB} =-12V, I _E =0A, f=1MHz		4	5

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	625
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	500

Note:

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

2SA1037K

■ Characteristics

Fig 1: Static Characteristics

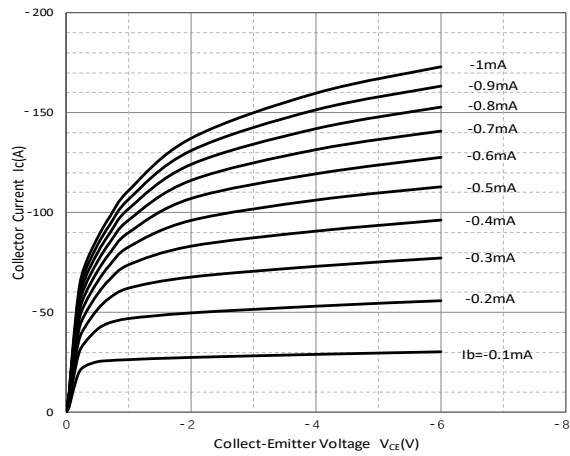


Fig 2: DC Current Gain

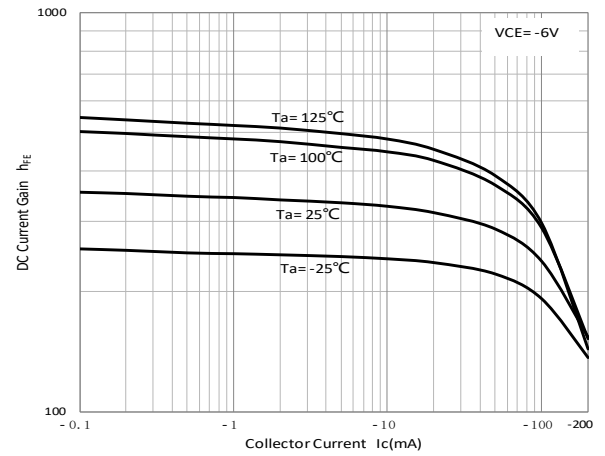


Fig 3: Collector-Emitter Saturation Voltage

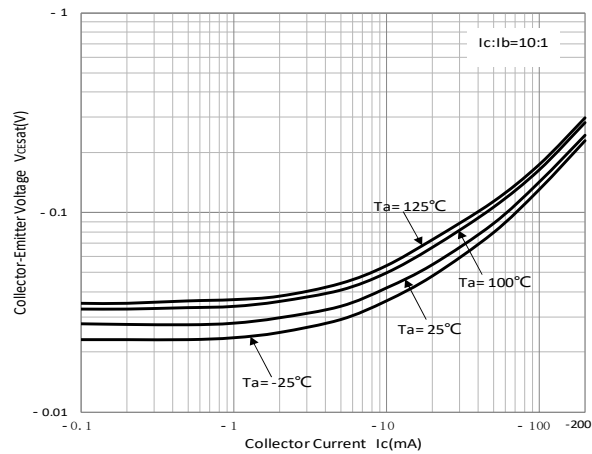


Fig 4: Base-Emitter Saturation Voltage

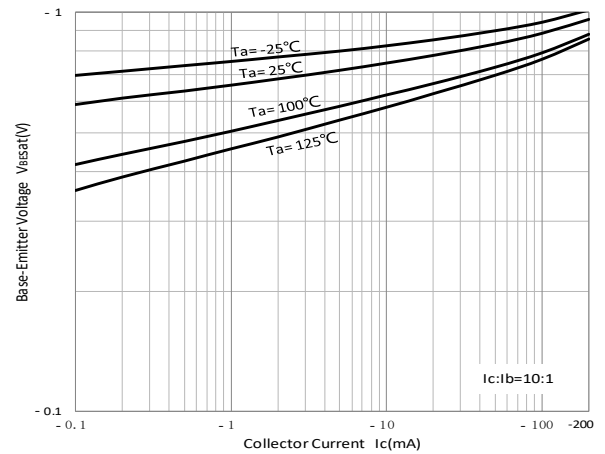


Fig 5: Base-Emitter On Voltage

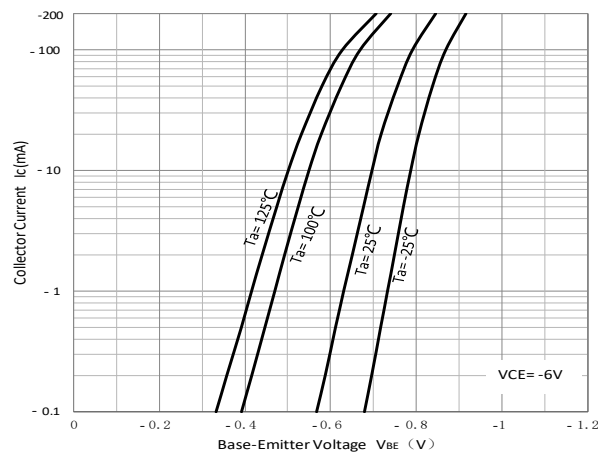
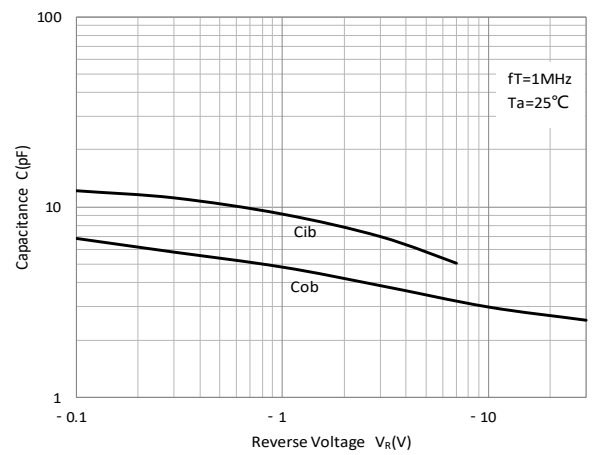
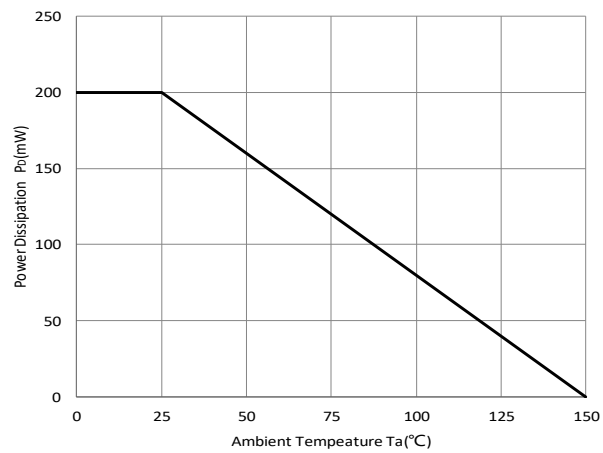


Fig 6: Cob/Cib- V_{CB}/V_{EB}



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Fig 7: P_D - T_a Curve

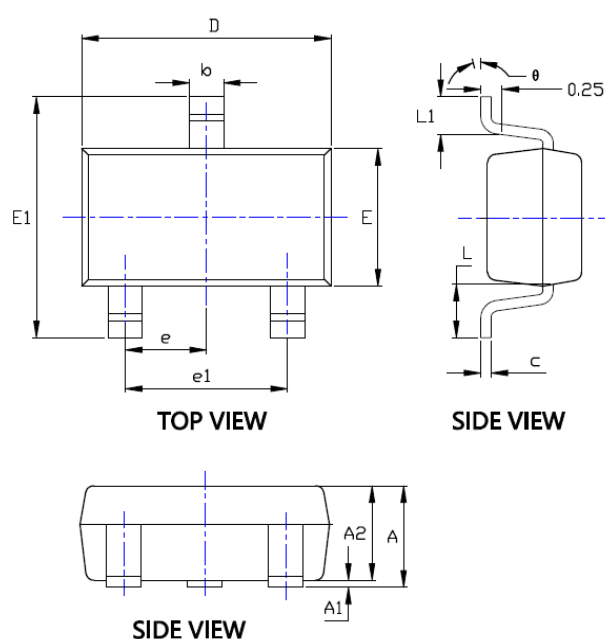


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■ Ordering Information

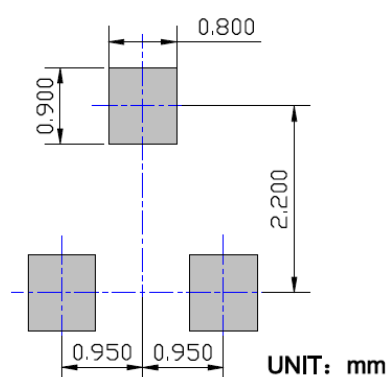
Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
2SA1037K	F2	Approximate 0.014	3000	30000	120000	7" reel

■ SOT-23-3L Package Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.041	0.049	1.050	1.250
A1	0.000	0.008	0.000	0.200
A2	0.041	0.045	1.050	1.150
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.111	0.119	2.820	3.020
E	0.059	0.067	1.500	1.700
E1	0.104	0.116	2.650	2.950
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.024REF		0.600REF	
L1	0.012	0.024	0.300	0.600
∅	0°	8°	0°	8°

■ SOT-23-3L Soldering Footprint



2SA1037K

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