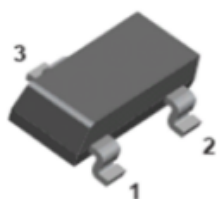
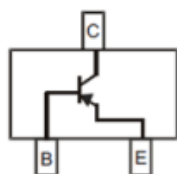


PNP General Purpose Amplifier



SOT-23

Features

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

Application

- Signal amplification
- Switching circuit
- Low saturation voltage

Mechanical data

- **Package:** SOT-23
- **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				3K
Collector-base voltage	V_{CBO}	V	$I_C=-100\mu\text{A}, I_E=0$	-20
Collector-emitter voltage	V_{CEO}	V	$I_C=-1\text{mA}, I_B=0$	-20
Emitter-base voltage	V_{EBO}	V	$I_E=-100\mu\text{A}, I_C=0$	-5
Collector current	I_C	A		-1
Power dissipation	P_D	mW		300
Junction temperature	T_J	$^{\circ}\text{C}$		-55 to +150
Storage temperature	T_{STG}	$^{\circ}\text{C}$		-55 to +150

■ 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	-20		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =-1mA, I _B =0	-20		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =-100μA, I _C =0	-5		
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =-20V			-100
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =-4V			-100
DC current gain	h _{FE1}		V _{CE} =-2V, I _C =-100mA	300		
	h _{FE2}		V _{CE} =-2V, I _C =-500mA	250		
	h _{FE3}		V _{CE} =-2V, I _C =-1A	200		
Collector-emitter saturation voltage	V _{CE(sat)1}	mV	I _C =-100mA, I _B =-1mA			-100
	V _{CE(sat)2}	mV	I _C =-500mA, I _B =-50mA			-125
	V _{CE(sat)3}	mV	I _C =-1A, I _B =-50mA			-250
Base-emitter saturation voltage	V _{BE(sat)}	V	I _C =-1A, I _B =-100mA			-1.1
Equivalent on-resistance	R _{CE(sat)}	mΩ	I _C =-500mA, I _B =-50mA			250
Base-emitter voltage	V _{BE}	V	V _{CE} =-2V, I _C =-100mA			-0.75
Transition frequency	f _T	MHz	V _{CE} =-10V, I _C =-100mA, f=100MHz	100		
Collector-base output capacitance	C _{ob}	pF	V _{CB} =-10V, I _E =0A, f=1MHz			28

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	417
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	334

Note:

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

■ Characteristics

Fig 1: Static Characteristics

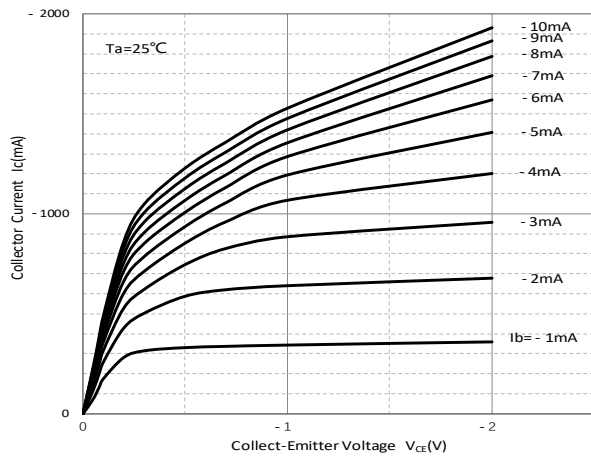


Fig 2: DC Current Gain

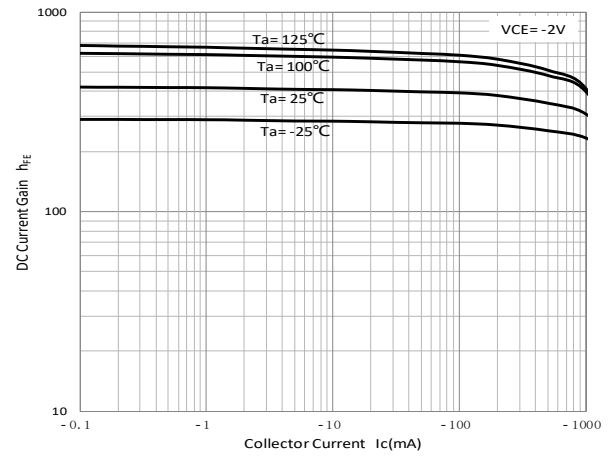


Fig 3: Collector-Emitter Saturation Voltage

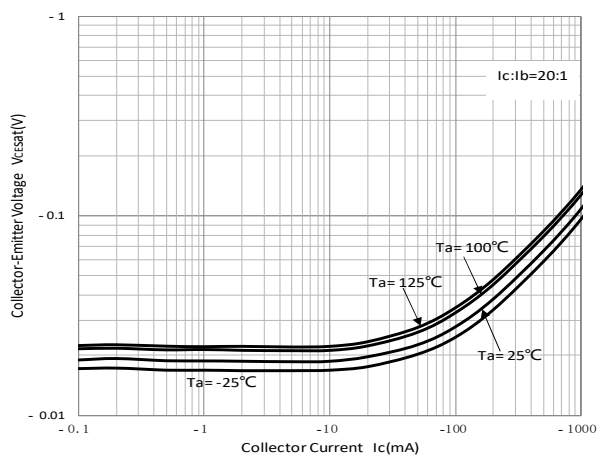


Fig 4: Base-Emitter Saturation Voltage

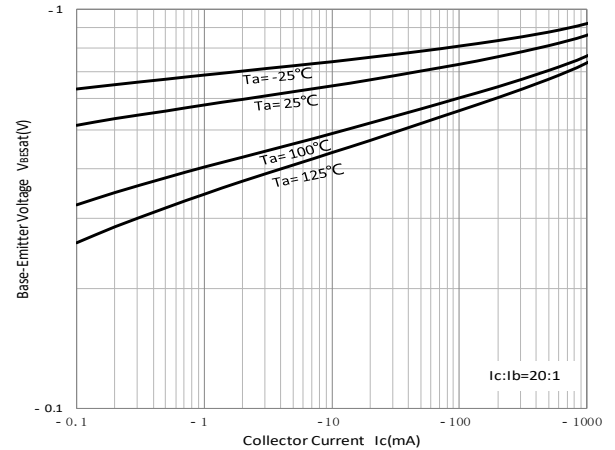


Fig 5: Base-Emitter On Voltage

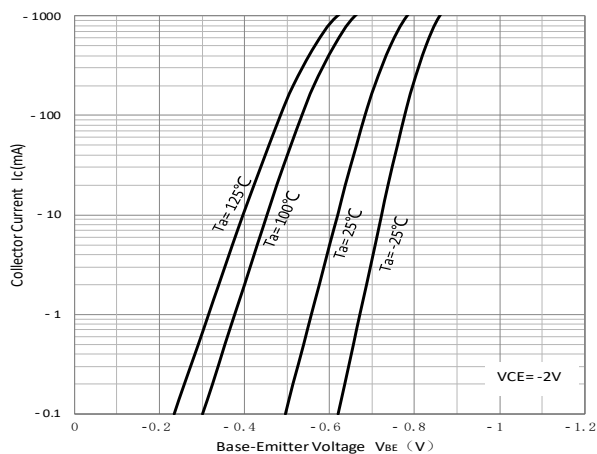


Fig 6: Cob/Cib-V_{CB}/V_{EB}

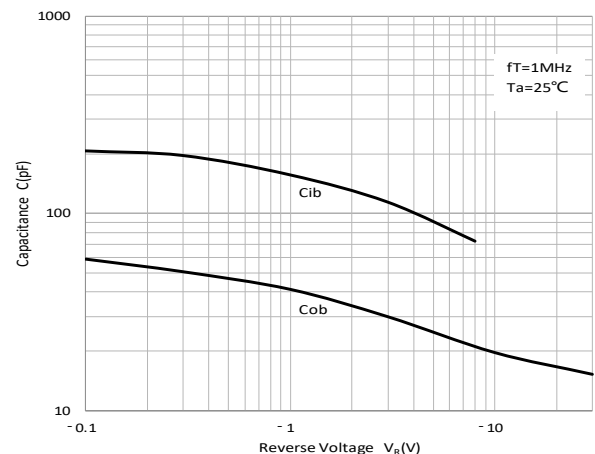
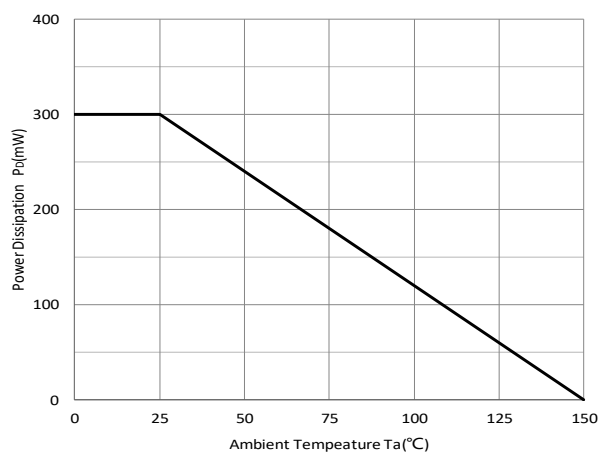
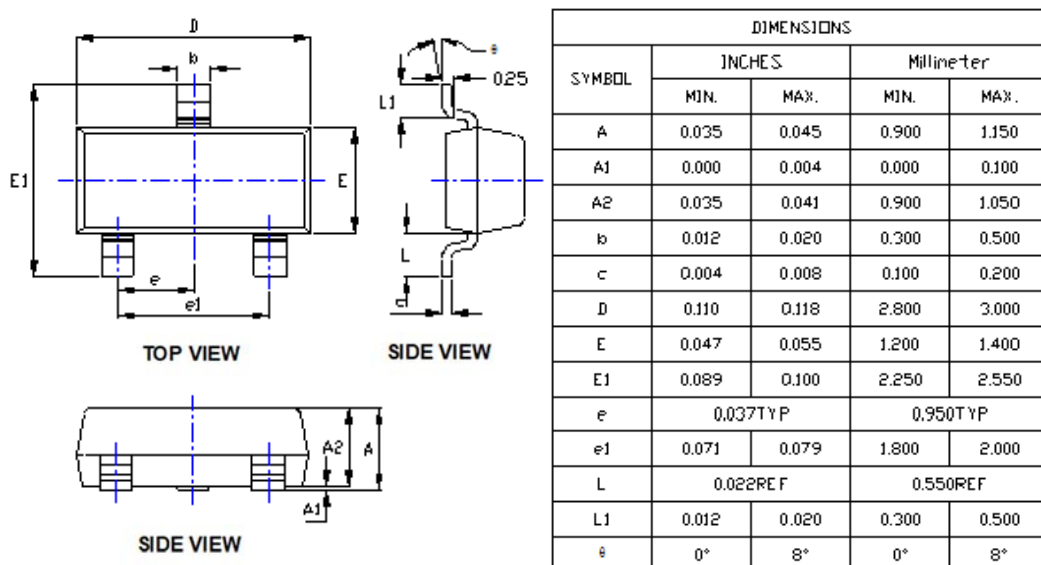


Fig 7: P_D -Ta Curve

■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PBSS5120T	F2	Approximate 0.008	3000	30000	120000	7" reel
PBSS5120T	F4	Approximate 0.008	10000	-	210000	13" reel

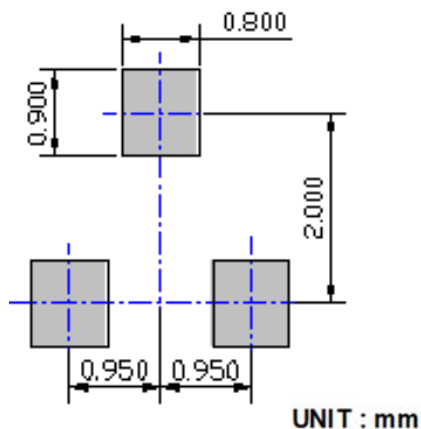
■ Outline Dimensions



Note:

- All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位, 除非另有说明]
- General tolerances: $\pm 0.10\text{mm}$ unless otherwise specified.
[通用公差为 $\pm 0.10\text{mm}$, 除非另有说明]
- Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
- All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
- Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
- Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸, 不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺, 但是包含了包封错位的最大尺寸]
- Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面, 共面性最大为0.1mm]
- ★It is the key size.
[★ 标记为关键尺寸]

■ Suggested Pad Layout





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