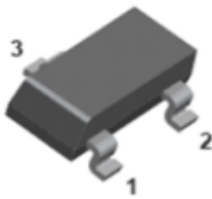
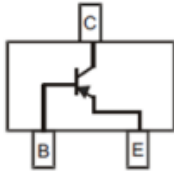


## PNP General Purpose Amplifier



**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
- High 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				LL
Collector-base voltage	$V_{CBO}$	V	$I_C=-100\mu\text{A}, I_E=0$	-500
Collector-emitter voltage	$V_{CEO}$	V	$I_C=-500\mu\text{A}, I_B=0$	-500
Emitter-base voltage	$V_{EBO}$	V	$I_E=-100\mu\text{A}, I_C=0$	-6
Collector current	$I_C$	A		-0.15
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<sub>a</sub>=25°C Unless otherwise specified)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V <sub>(BR)CBO</sub>	V	I <sub>C</sub> =-100μA, I <sub>E</sub> =0	-500		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =-500uA, I <sub>B</sub> =0	-500		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =-100μA, I <sub>C</sub> =0	-6		
Collector-base cut-off current	I <sub>CBO</sub>	uA	V <sub>CB</sub> =-360V			-0.1
Collector-emitter cut-off current	I <sub>CES</sub>	uA	V <sub>CE</sub> =-360V, V <sub>BE</sub> =0			-0.2
Emitter-base cut-off current	I <sub>EBO</sub>	uA	V <sub>EB</sub> =-5V			-0.1
DC current gain	h <sub>FE1</sub>		V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA	100		300
	h <sub>FE2</sub>		V <sub>CE</sub> =-10V, I <sub>C</sub> =-50mA	80		300
Collector-emitter saturation voltage	V <sub>CE(sat)1</sub>	V	I <sub>C</sub> =-20mA, I <sub>B</sub> =-2mA			-0.2
	V <sub>CE(sat)2</sub>	V	I <sub>C</sub> =-50mA, I <sub>B</sub> =-10mA			-0.2
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	V	I <sub>C</sub> =-50mA, I <sub>B</sub> =-10mA			-0.9
Transition frequency	f <sub>T</sub>	MHz	V <sub>CE</sub> =-10V, I <sub>C</sub> =-10mA, f=100MHz		50	
Collector-base output capacitance	C <sub>ob</sub>	pF	V <sub>CB</sub> =-20V, f=1MHz		6	

## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	417
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	333

### Note:

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



■ Characteristics

Fig 1: Static Characteristics

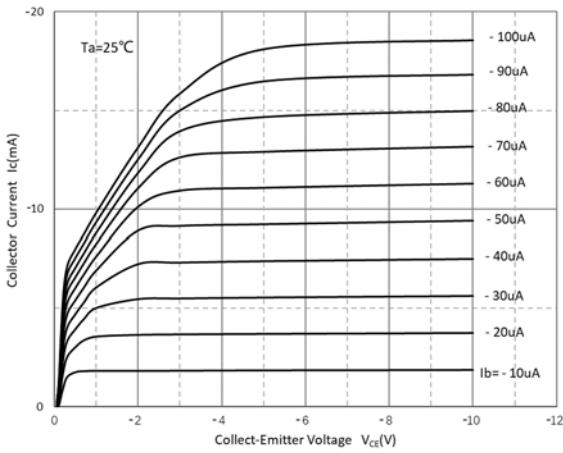


Fig 2: DC Current Gain

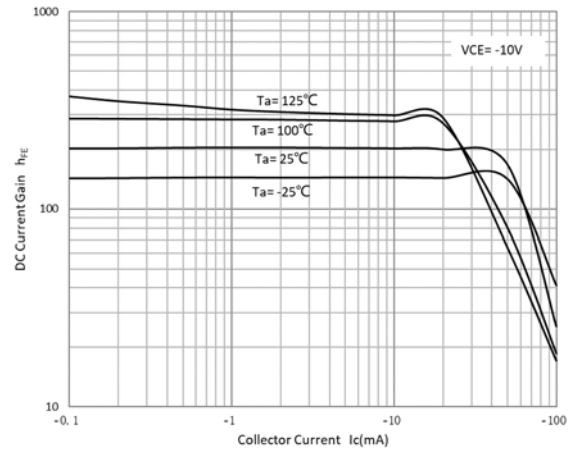


Fig 3: Collector-Emittor Saturation Voltage

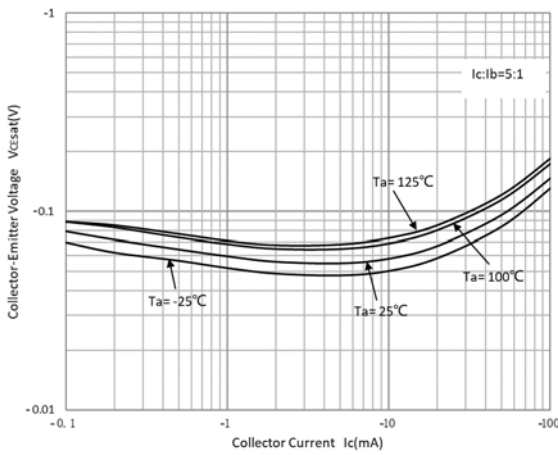


Fig 4: Base-Emittor Saturation Voltage

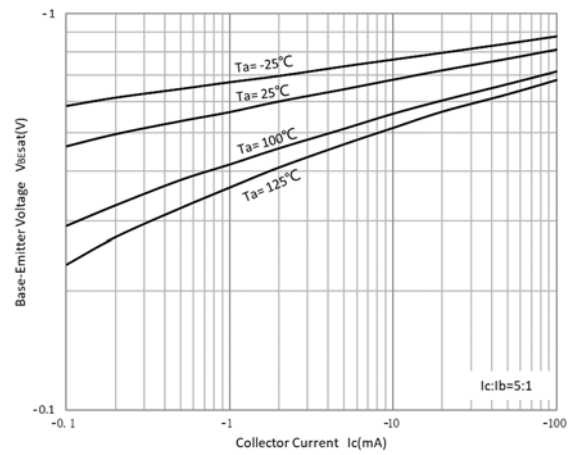


Fig 5: Base-Emittor On Voltage

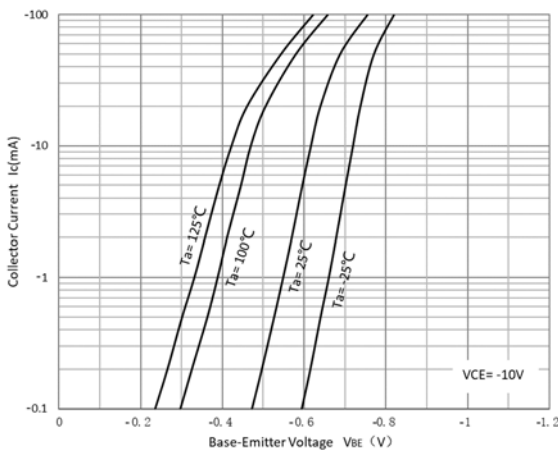


Fig 6: Cob/Cib-V<sub>CB</sub>/V<sub>EB</sub>

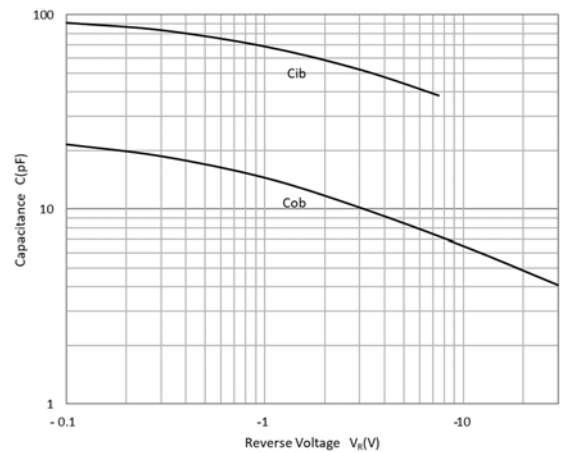
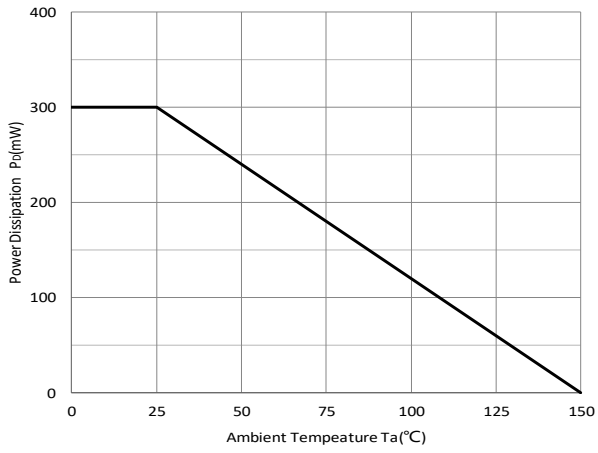




Fig 7:  $P_D$ - $T_a$  Curve





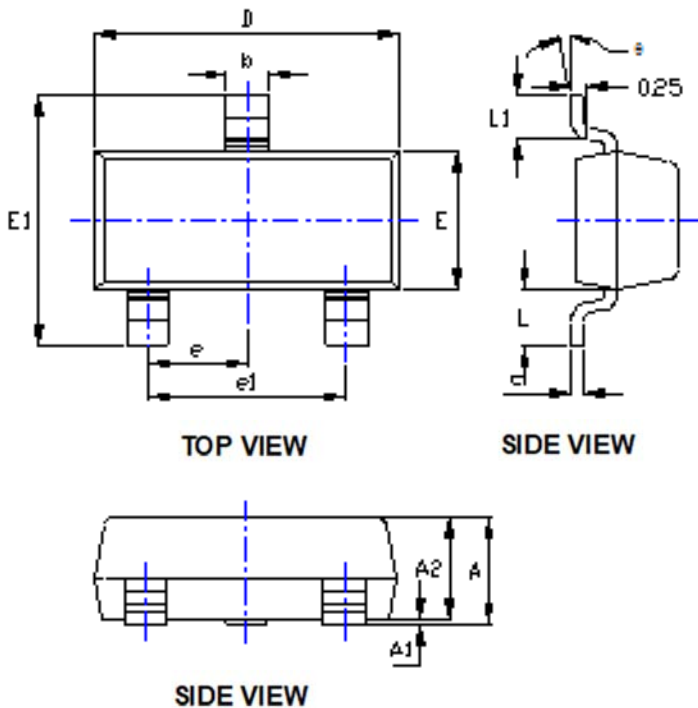
# PBHV9050T

RoHS  
COMPLIANT

## Ordering Information

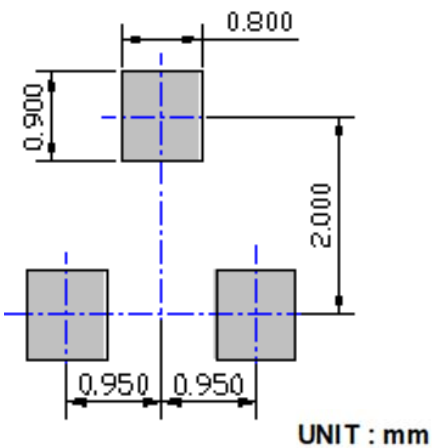
Prefered P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PBHV9050T	F2	Approximate 0.008	3000	30000	120000	7" reel
PBHV9050T	F4	Approximate 0.008	10000	/	210000	13" reel

## Outline Dimensions



SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

## Suggested Pad Layout





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