

PNP Transistor



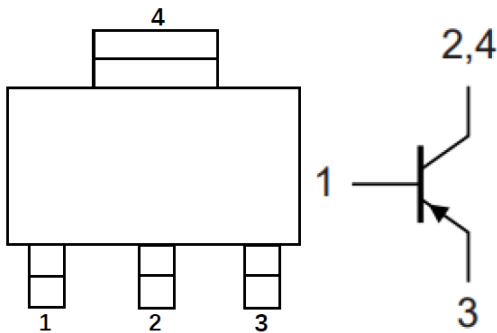
Features

- Epoxy meets UL-94 V-0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1

Mechanical Data

- **Package:** SOT-223
- **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
- **Marking:** 304PZB

Equivalent circuit



Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Collector-Emitter Voltage	V_{CEO}	V	$I_C = -1\text{mA}, I_E = 0$	-60
Collector-Base Voltage	V_{CBO}	V	$I_C = -1\text{mA}, I_B = 0$	-60
Emitter-Base Voltage	V_{EBO}	V	$I_E = -100\mu\text{A}, I_C = 0$	-5
Collector Current	I_C	A		-4.5
Power Dissipation(Note1)	P_D	W		0.5
Operation Junction Temperature	T_j	°C		-55 to +150
Storage Temperature	T_{stg}	°C		-55 to +150



■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-Base Breakdown Voltage	V_{CBO}	V	$I_C = -1mA, I_E = 0$	-60		
Collector-Emitter Breakdown Voltage	V_{CEO^*}	V	$I_C = -1mA, I_B = 0$	-60		
Emitter-Base Breakdown Voltage	V_{EBO}	V	$I_E = -100\mu A, I_C = 0$	-5		
Collector-Base Cut-Off Current	I_{CBO}	nA	$V_{CB} = -60V, I_E = 0$			-100
Emitter-Base Cut-Off Current	I_{EBO}	nA	$V_{EB} = -5V, I_C = 0$			-100
DC Current Gain	h_{FE}		$V_{CE} = -2V, I_C = -0.5A$	200		
	h_{FE}		$V_{CE} = -2V, I_C = -1A$	200		
	h_{FE}		$V_{CE} = -2V, I_C = -2A$	150		
	h_{FE}		$V_{CE} = -2V, I_C = -4A$	120		
	h_{FE}		$V_{CE} = -2V, I_C = -6A$	60		
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	mV	$I_C = -0.5A, I_B = -50mA$			-50
			$I_C = -1A, I_B = -50mA$			-90
			$I_C = -1A, I_B = -10mA$			-190
			$I_C = -2A, I_B = -40mA$			-230
			$I_C = -4A, I_B = -200mA$			-300
			$I_C = -4A, I_B = -400mA$			-230
			$I_C = -4.5A, I_B = -225mA$			-375
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = -1A, I_B = -100mA$			-0.9
			$I_C = -4A, I_B = -400mA$			-1.05
Collector-Emitter Saturation Resistance	$R_{CE(sat)}$	mΩ	$I_C = -4A, I_B = -200mA$			75
			$I_C = -2A, I_B = -40mA$			115
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	V	$V_{CE} = -2V, I_C = -2A$			-0.85
Output Capacitance	Cob	pF	$V_{CB} = -10V, I_E = 0, f = 1MHz$		50	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}^{(1)}$	°C/W	250
Thermal resistance, junction-to-case	$R_{\theta J-C}^{(1)}$	°C/W	50

Note:

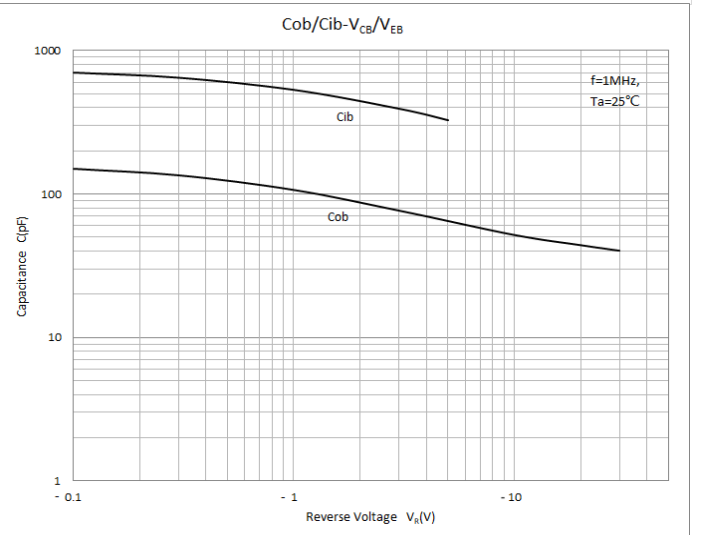
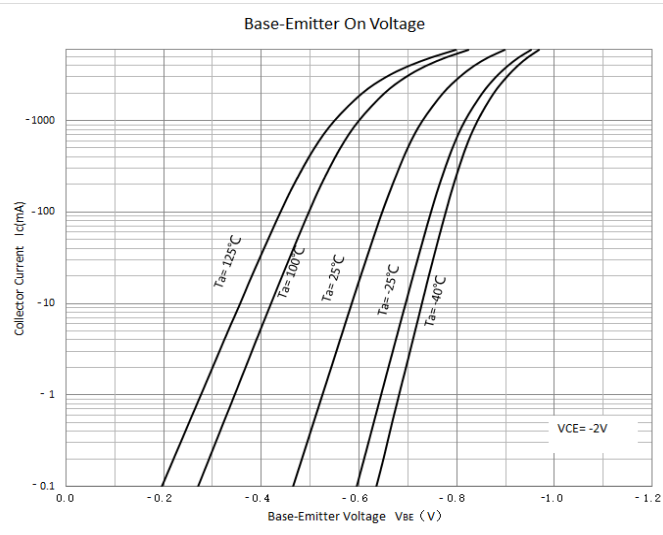
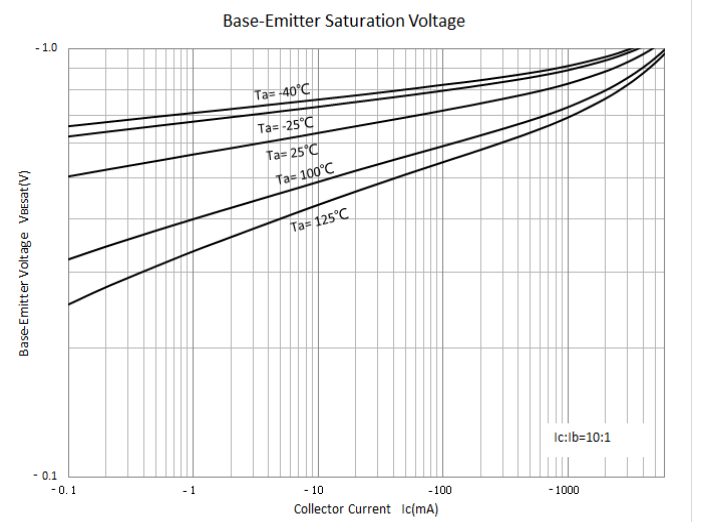
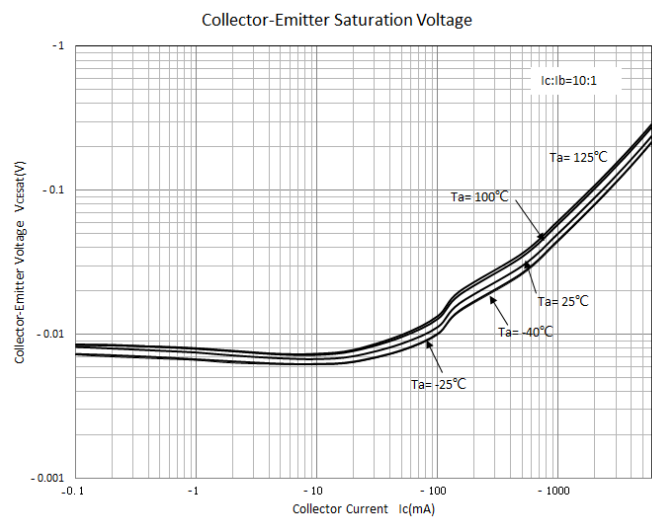
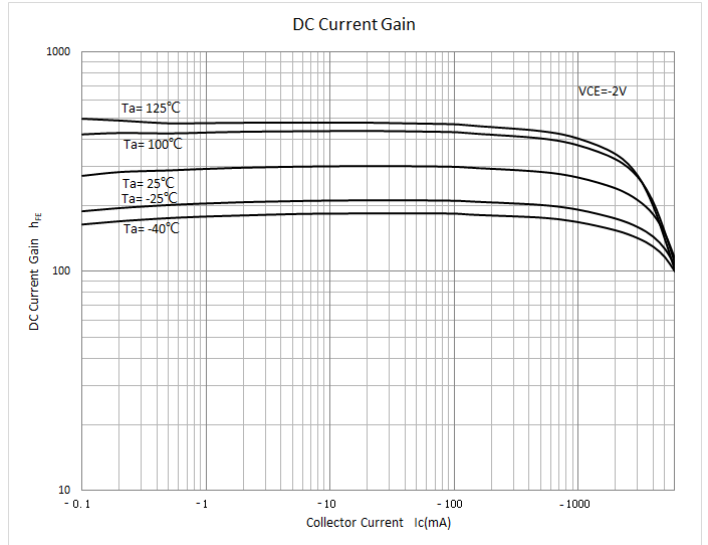
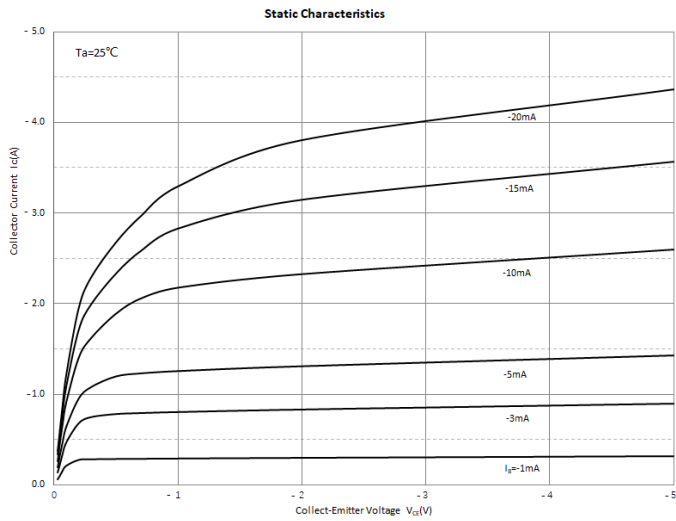
(1) The device is installed and tested on 25.4 * 25.4 * 1.5mm P.C.B.

■ Ordering Information (Example)

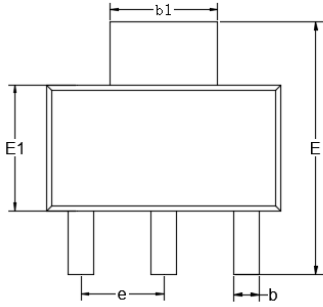
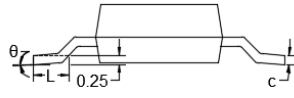
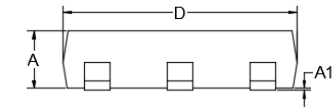
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PBSS304PZB	F2	Approximate 0.11	2500	5000	25000	13" reel



■ Characteristics (Typical)

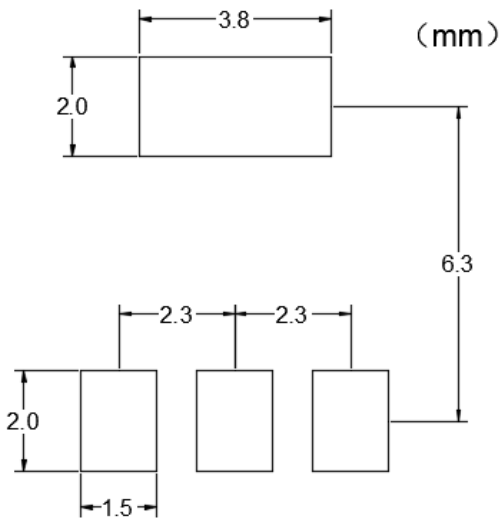


■SOT-223 Package Outline Dimensions



DIM	DIMENSIONS			
	INCHES		MM	
	MIN	MAX	MIN	MAX
A	0.0591	0.0670	1.5000	1.7000
A1	0.0008	0.0039	0.0200	0.1000
b	0.0259	0.0330	0.6600	0.8400
b1	0.1140	0.1220	2.9000	3.1000
c	0.0090	0.0138	0.2300	0.3500
D	0.2480	0.2640	6.3000	6.7000
E	0.2637	0.2874	6.7000	7.3000
E1	0.1290	0.1460	3.3000	3.7000
e	0.0866	0.0945	2.2000	2.4000
L	0.0295	0.0492	0.7500	1.2500
θ	0°	10°	0°	10°

■SOT-223 Suggested Pad Layout





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