

PNP Transistor



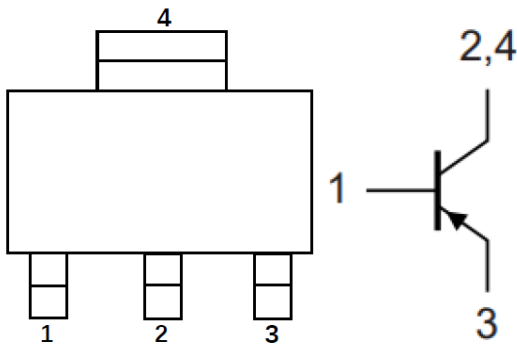
**Features**

- 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:** S304PZ

■Equivalent circuit



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

Item	Symbol	Unit	Conditions	Value
Minimum Collector-Emitter Voltage	$V_{CEO}$	V	$I_C = -10mA, I_B = 0$	-60
Minimum Collector-Base Voltage	$V_{CBO}$	V	$I_C = -100\mu A, I_E = 0$	-60
Minimum Emitter-Base Voltage	$V_{EBO}$	V	$I_E = -100\mu A, I_C = 0$	-5
Collector Current	$I_C$	A		-4.5
Power Dissipation	$P_D$	W		1
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		125
Operation Junction Temperature	$T_j$	°C		-55 to +150
Storage Temperature	$T_{stg}$	°C		-55 to +150

# PBSS304PZ

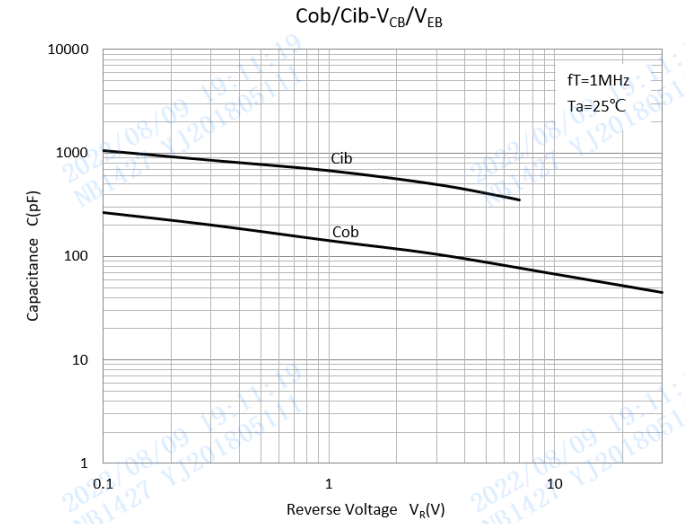
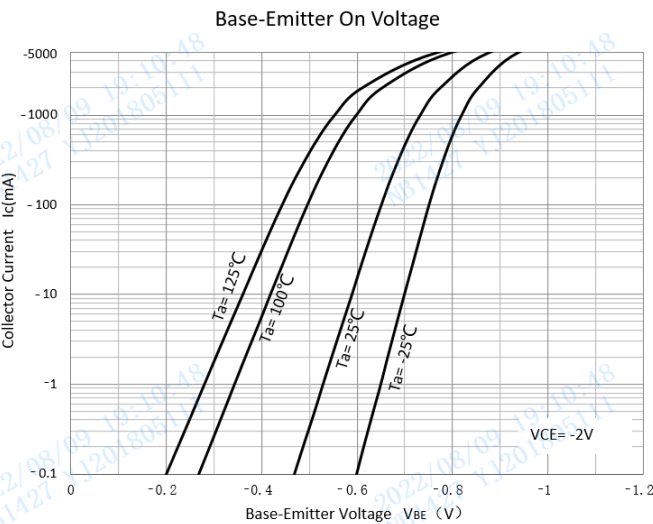
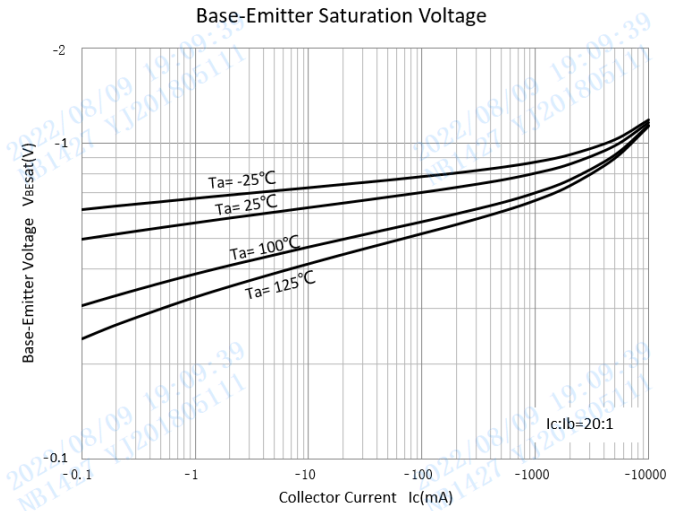
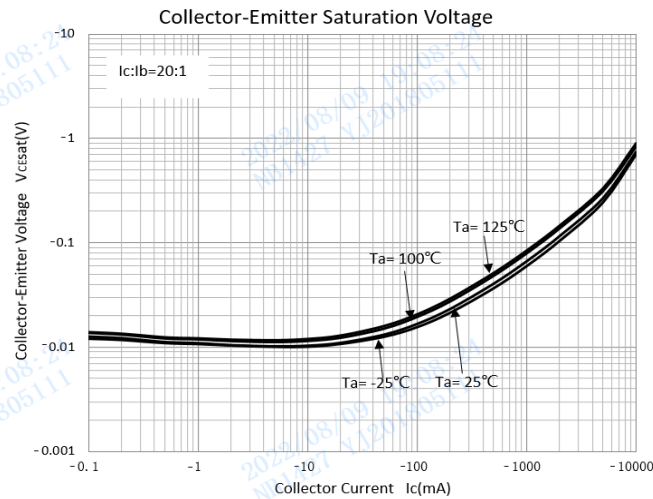
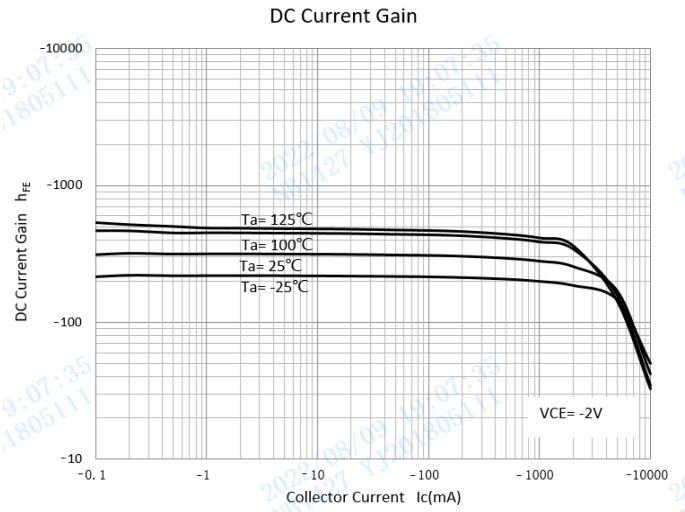
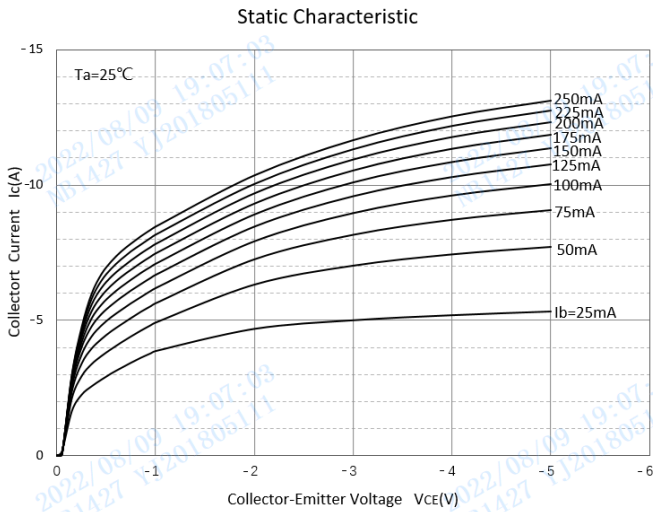
## ■Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	$V_{CBO}$	V	$I_C=-100\mu A, I_E=0$	-60	-	-
Collector-emitter breakdown voltage	$V_{CEO^*}$	V	$I_C=-10mA, I_B=0$	-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
Base-Emitter Voltage	$V_{BE}$	V	$V_{CE}=-2V, I_C=-2A$	-	-	-0.85
Output Capacitance	$C_{ob}$	pF	$V_{CB}=-10V, I_E=0, f=1MHz$	-	-	120

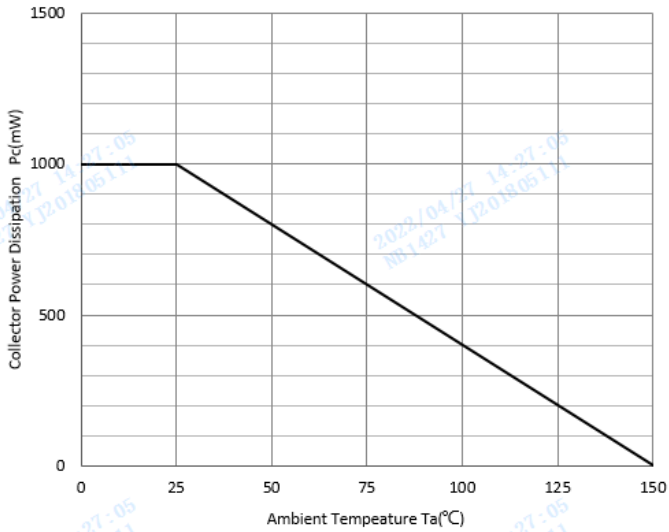
## ■Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PBSS304PZ	F2	Approximate 0.11	2500	5000	25000	13" reel

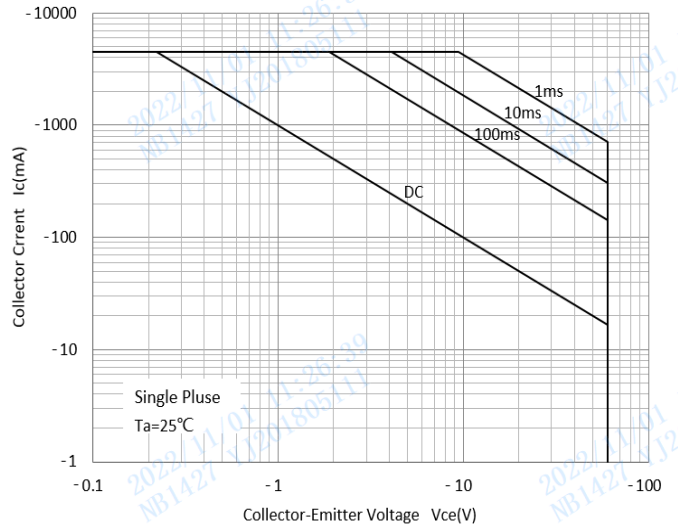
■ Characteristics (Typical)



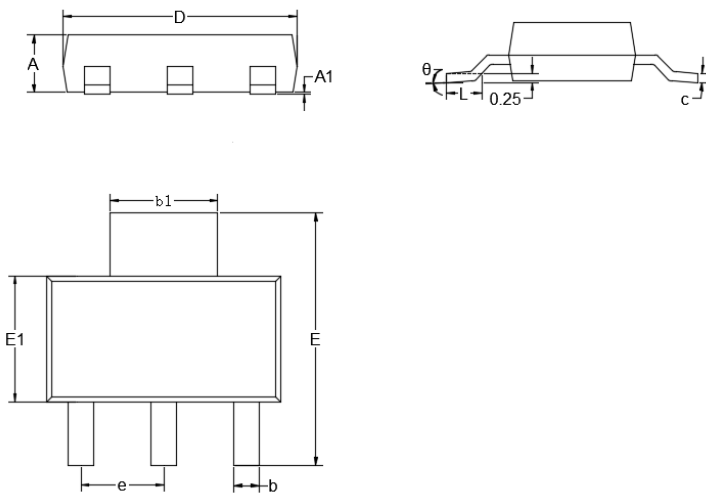
Collector Power Derating Curve



Safe Operating Area

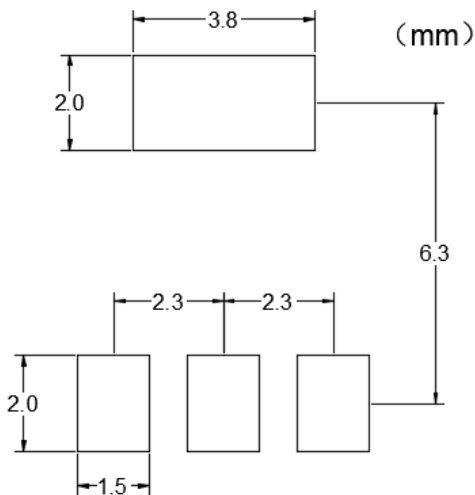


■ SOT-223 Package Outline Dimensions



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
$\theta$	0°	10°	0°	10°

■ SOT-223 Suggested Pad Layout



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