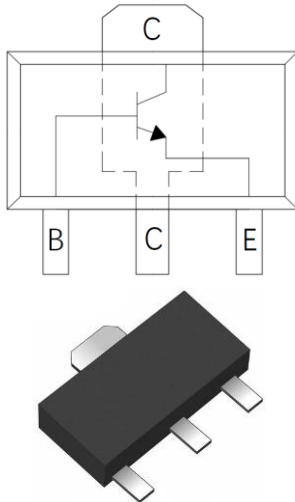


## NPN General Purpose Amplifier

### SOT-89



#### Features

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

#### Application

- Signal amplification
- Switching circuit

#### Mechanical data

- **Package:** SOT-89
- **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				5G
Collector-base voltage	$V_{CBO}$	V	$I_C=100\mu\text{A}$ , $I_E=0$	100
Collector-emitter voltage	$V_{CEO}$	V	$I_C=1\text{mA}$ , $I_B=0$	100
Emitter-base voltage	$V_{EBO}$	V	$I_E=100\mu\text{A}$ , $I_C=0$	5
Collector current	$I_C$	A		4.5
Peak Collector current	$I_{CM}$	A	single pulse, $t_p \leq 1\text{ms}$	9
Base current	$I_B$	A		0.4
Power dissipation	$P_D$	mW		500
Junction temperature	$T_J$	$^{\circ}\text{C}$		-55 to +150
Storage temperature	$T_{STG}$	$^{\circ}\text{C}$		-55 to +150



# YJBS306NX

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## ■ 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> =100uA, I <sub>E</sub> =0	100		
Collector-emitter breakdown voltage	V <sub>(BR)CEO</sub>	V	I <sub>C</sub> =1mA, I <sub>B</sub> =0	100		
Emitter-base breakdown voltage	V <sub>(BR)EBO</sub>	V	I <sub>E</sub> =100uA, I <sub>C</sub> =0	5		
Collector-base cut-off current	I <sub>CBO</sub>	nA	V <sub>CB</sub> =80V I <sub>E</sub> =0			100
Emitter-base cut-off current	I <sub>EBO</sub>	nA	V <sub>EB</sub> =5V I <sub>C</sub> =0			100
Collector Cutoff Current	I <sub>CES</sub>	uA	V <sub>CE</sub> =80V V <sub>BE</sub> =0			10
DC current gain	h <sub>FE</sub>		V <sub>CE</sub> =2V I <sub>C</sub> =0.5A	200		
			V <sub>CE</sub> =2V I <sub>C</sub> =1A	150		
			V <sub>CE</sub> =2V I <sub>C</sub> =2A	100		
			V <sub>CE</sub> =2V I <sub>C</sub> =4A	50		
			V <sub>CE</sub> =2V I <sub>C</sub> =5A	40		
Collector-emitter saturation voltage	V <sub>CE(sat)</sub>	mV	I <sub>C</sub> =0.5A I <sub>B</sub> =50mA			40
			I <sub>C</sub> =1A I <sub>B</sub> =50mA			75
			I <sub>C</sub> =1A I <sub>B</sub> =10mA			150
			I <sub>C</sub> =2A I <sub>B</sub> =40mA			160
			I <sub>C</sub> =4A I <sub>B</sub> =200mA			225
			I <sub>C</sub> =4A I <sub>B</sub> =400mA			200
			I <sub>C</sub> =4.5A I <sub>B</sub> =225mA			245
Collector-emitter saturation resistance	R <sub>CE(sat)</sub>	mΩ	I <sub>C</sub> =4A I <sub>B</sub> =200mA			56
Base-emitter saturation voltage	V <sub>BE(sat)</sub>	V	I <sub>C</sub> =1A I <sub>B</sub> =100mA			0.9
			I <sub>C</sub> =4A I <sub>B</sub> =400mA			1.05
Base-emitter turn-on voltage	V <sub>BE</sub>	V	V <sub>CE</sub> =2V I <sub>C</sub> =2A			0.85

## ■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R <sub>θJ-A</sub> <sup>(1)</sup>	°C/W	250
Thermal resistance, junction-to-case	R <sub>θJ-C</sub> <sup>(1)</sup>	°C/W	50

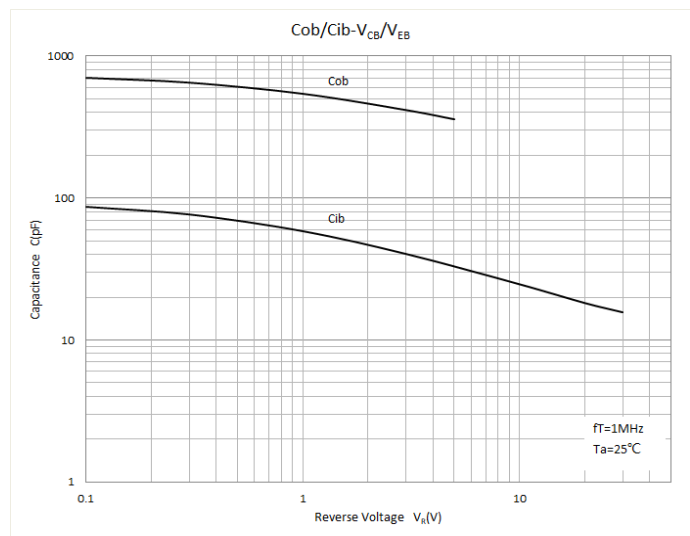
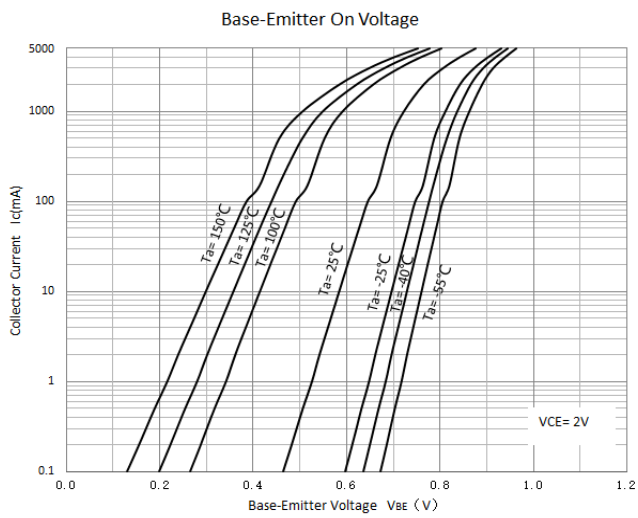
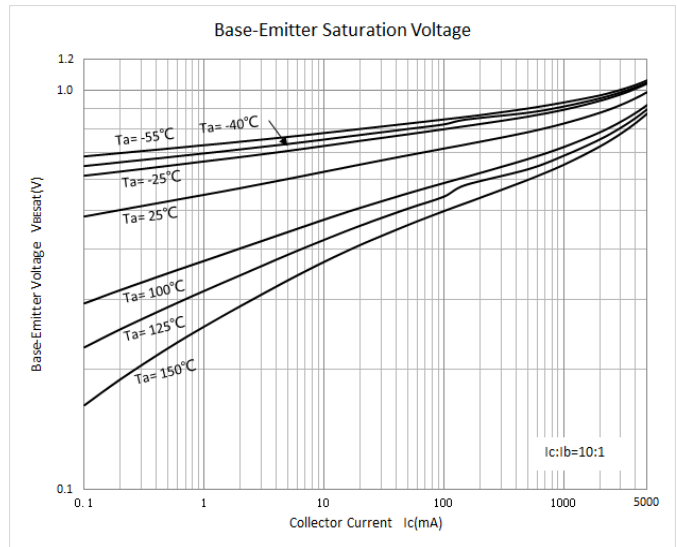
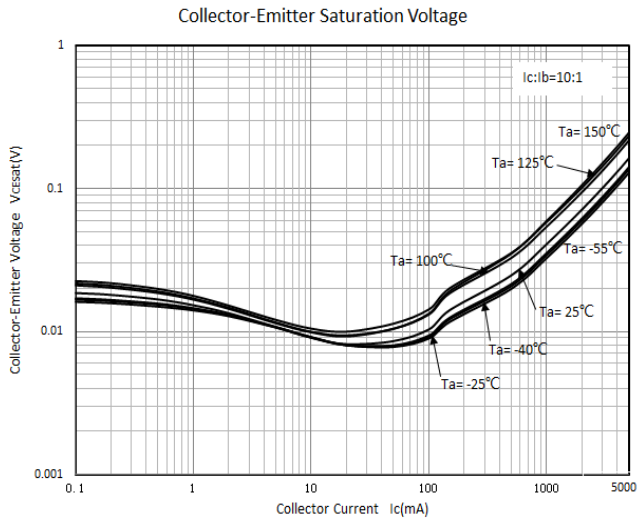
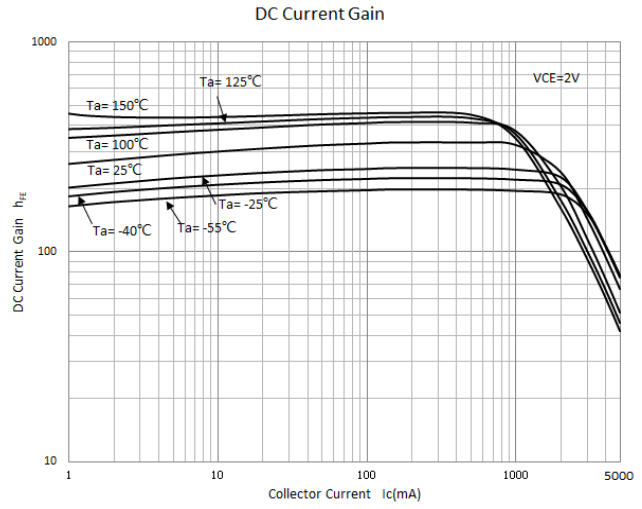
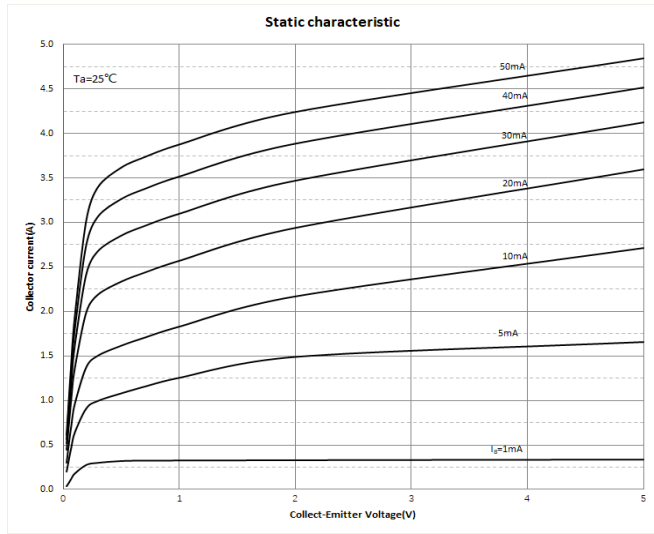
Note: The device is installed and tested on 25.4 \* 25.4 \* 1.5mm P.C.B.

## ■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
PBSS306NX	F2	Approximate 0.055	1000	8000	32000	7" reel



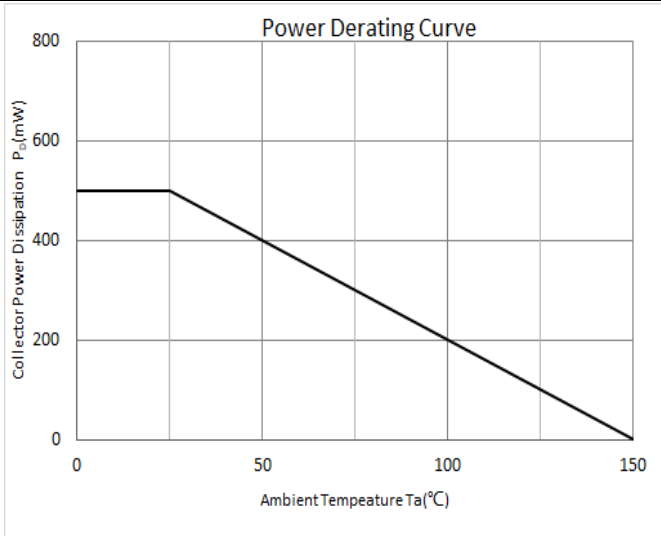
## Characteristics





# YJBS306NX

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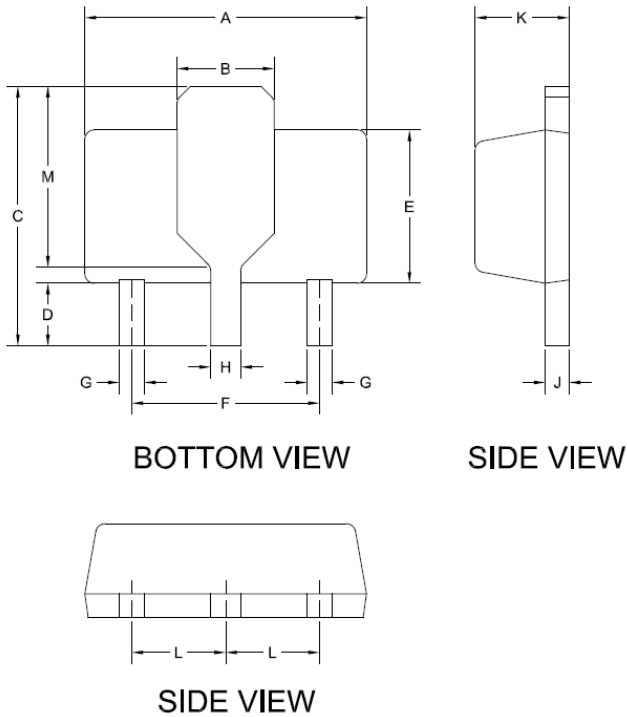




# YJBS306NX

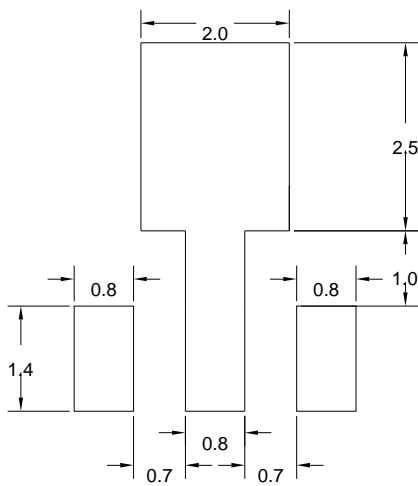
RoHS  
COMPLIANT

## ■ Outline Dimensions



DIMENSIONS				
DIM	INCHES		MM	
	MIN.	MAX.	MIN.	MAX.
A	0.173	0.181	4.400	4.600
B	0.061 TYP.		1.550 TYP.	
C	0.155	0.167	3.940	4.250
D	0.031	0.047	0.800	1.200
E	0.094	0.102	2.400	2.600
F	0.118 TYP.		3.00 TYP.	
G	0.014	0.019	0.360	0.480
H	0.017	0.022	0.440	0.560
J	0.014	0.017	0.350	0.440
K	0.055	0.063	1.400	1.600
L	0.059 TYP.		1.500 TYP.	
M	0.108 TYP.		2.750 TYP.	

## ■ Suggested Pad Layout



UNIT:MM



# YJBS306NX

**RoHS**  
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## Disclaimer

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