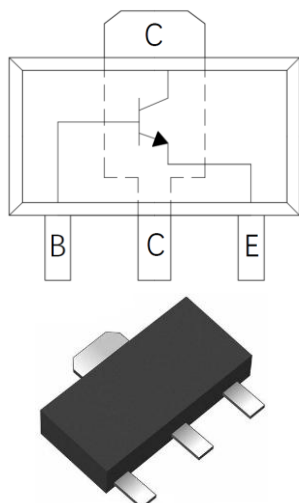


NPN General Purpose Amplifier

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

RoHS
COMPLIANT

■ 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 =100uA, I _E =0	100		
Collector-emitter breakdown voltage	V _{(BR)CEO}	V	I _C =1mA, I _B =0	100		
Emitter-base breakdown voltage	V _{(BR)EBO}	V	I _E =100uA, I _C =0	5		
Collector-base cut-off current	I _{CBO}	nA	V _{CB} =80V I _E =0			100
Emitter-base cut-off current	I _{EBO}	nA	V _{EB} =5V I _C =0			100
Collector Cutoff Current	I _{CES}	uA	V _{CE} =80V V _{BE} =0			10
DC current gain	h _{FE}		V _{CE} =2V I _C =0.5A	200		
			V _{CE} =2V I _C =1A	150		
			V _{CE} =2V I _C =2A	100		
			V _{CE} =2V I _C =4A	50		
			V _{CE} =2V I _C =5A	40		
Collector-emitter saturation voltage	V _{CE(sat)}	mV	I _C =0.5A I _B =50mA			40
			I _C =1A I _B =50mA			75
			I _C =1A I _B =10mA			150
			I _C =2A I _B =40mA			160
			I _C =4A I _B =200mA			225
			I _C =4A I _B =400mA			200
			I _C =4.5A I _B =225mA			245
Collector-emitter saturation resistance	R _{CE(sat)}	mΩ	I _C =4A I _B =200mA			56
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 turn-on voltage	V _{BE}	V	V _{CE} =2V I _C =2A			0.85
Transition Frequency	f _T	MHz	V _{CE} =10V, I _C =100mA	100		

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	R _{θJ-A} ⁽¹⁾	°C/W	250
Thermal resistance, junction-to-case	R _{θJ-C} ⁽¹⁾	°C/W	50

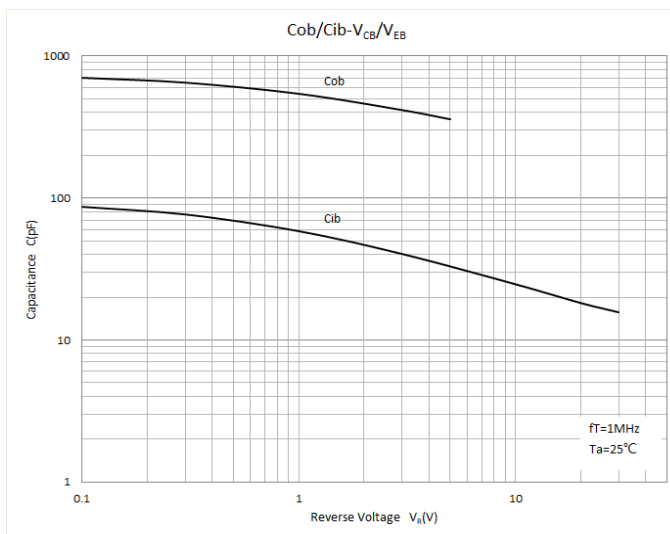
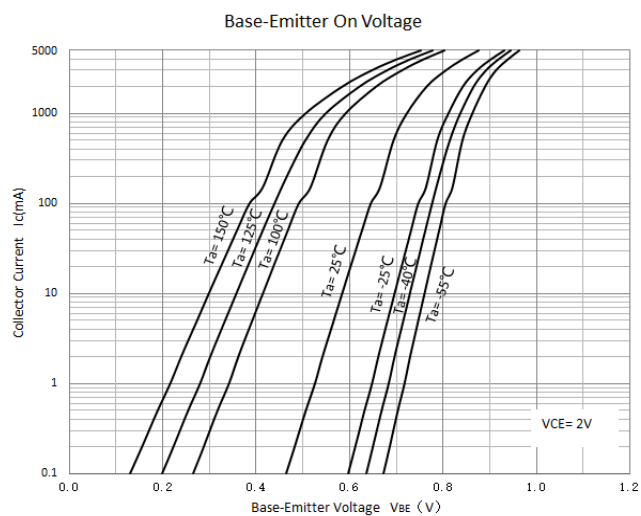
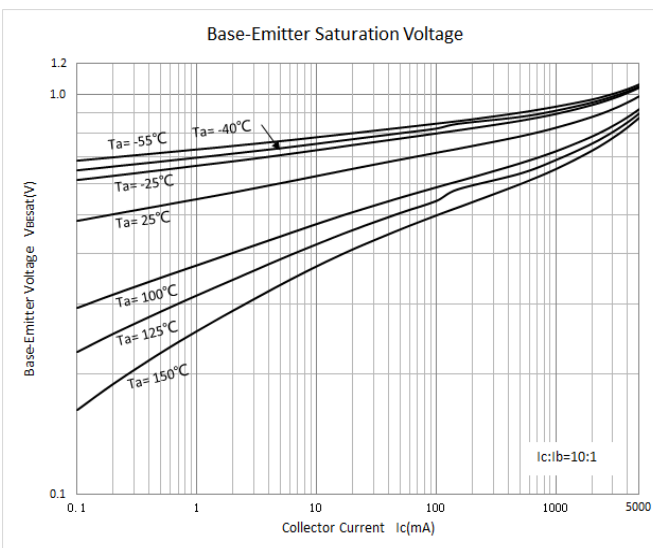
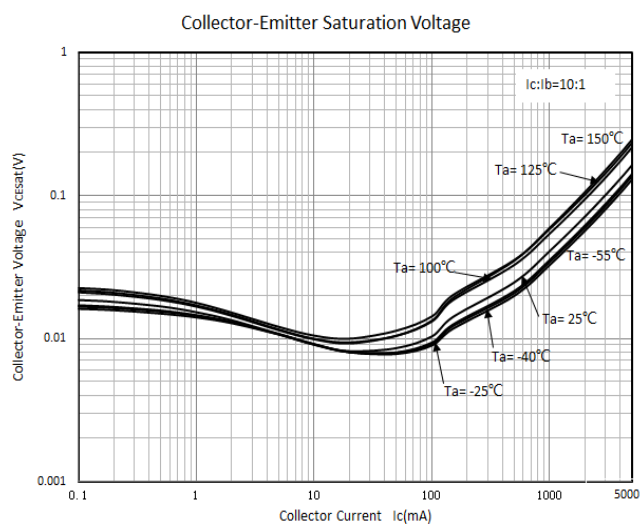
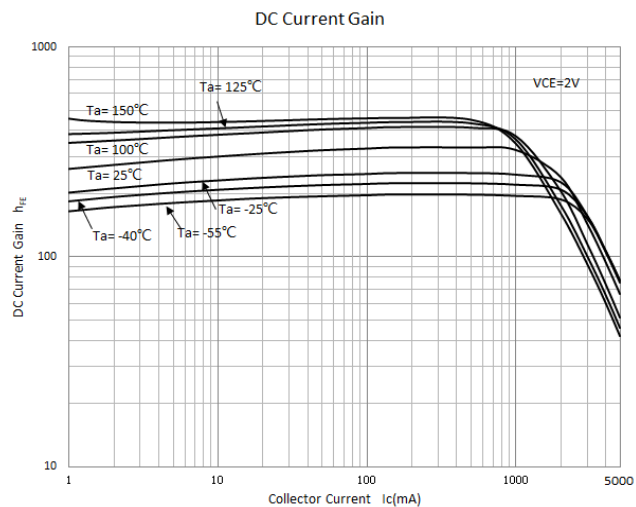
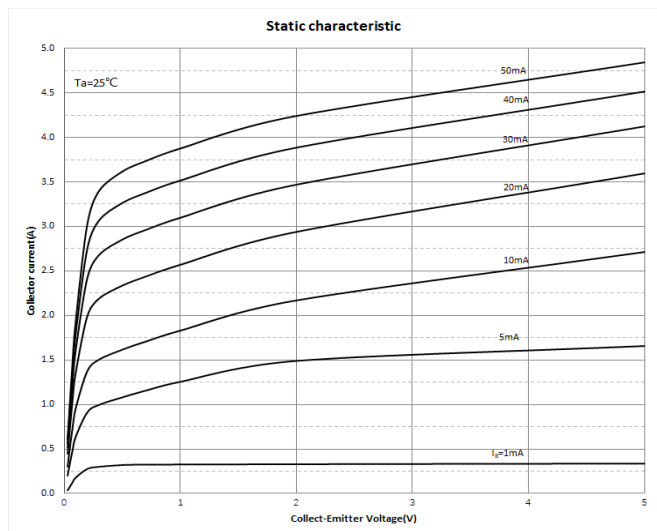
Note: The device is installed and tested on 25.4 * 25.4 * 1.5mm P.C.B.

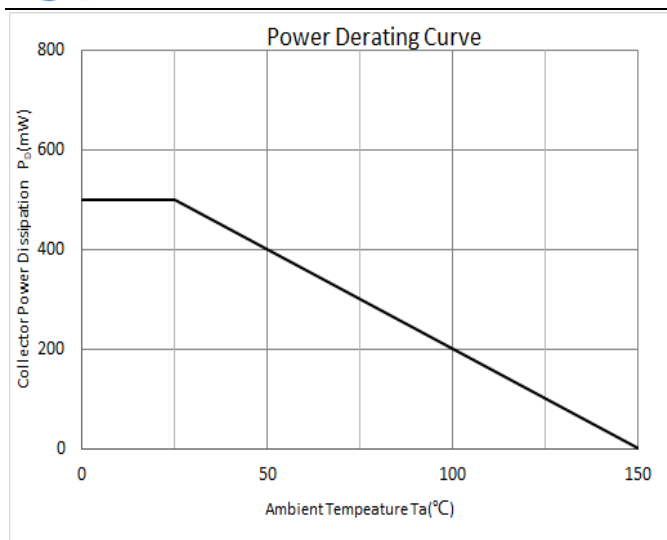
■ Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
YJBS306NX	F2	Approximate 0.055	1000	8000	32000	7" reel



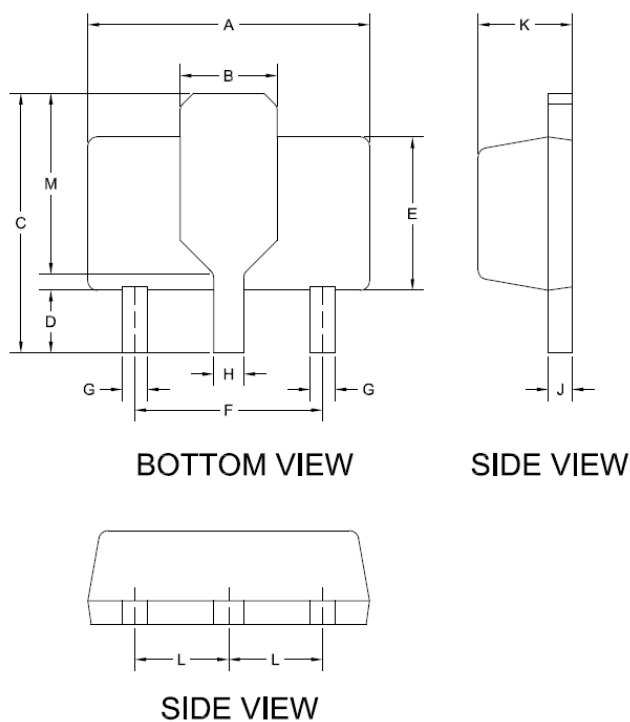
■ Characteristics





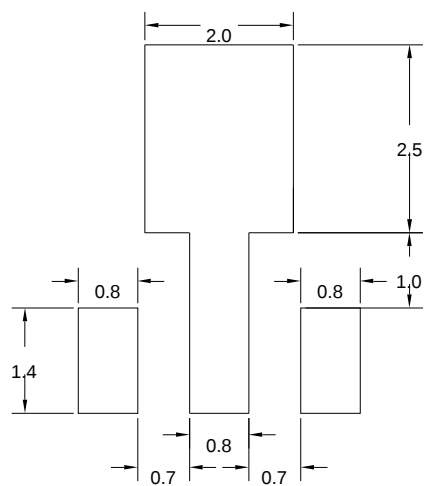


■ Outline Dimensions



DIM	DIMENSIONS			
	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
COMPLIANT

Disclaimer

The information presented in this document is for reference only. Yangzhou Yangjie Electronic Technology Co., Ltd. reserves the right to make changes without notice for the specification of the products displayed herein to improve reliability, function, or design or otherwise.

The product listed herein is designed to be used with ordinary electronic equipment or devices, and not designed to be used with equipment or devices which require high level of reliability and the malfunction of which would directly endanger human life (such as medical instruments, transportation equipment, aerospace machinery, nuclear-reactor controllers, fuel controllers and other safety devices), Yangjie or anyone on its behalf, assumes no responsibility or liability for any damages resulting from such improper use of sale.

This publication supersedes & replaces all information previously supplied. For additional information, please visit our website [http:// www.21yangjie.com](http://www.21yangjie.com) , or consult your nearest Yangjie's sales office for further assistance.