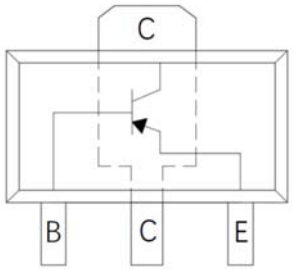
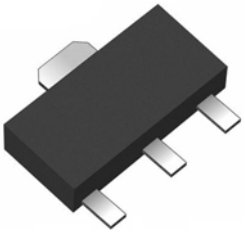
PNP General Purpose Amplifier

SOT-89





Features

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

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℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions		Value
Device marking code			MMBTA55X		A55X
			MMBTA56X		A56X
Collector-base voltage	V_{CBO}	V	MMBTA55X	I_C=-100μA,I_E=0	-60
		V	MMBTA56X		-80
Collector-emitter voltage	V_{CEO}	V	MMBTA55X	I_C=-1mA,I_E=0	-60
		V	MMBTA56X		-80
Emitter-base voltage	V_{EBO}	V	I_E=-100μA,I_C=0		-4
Collector current	I_C	mA			-500
Power dissipation	P_D	mW			300
Junction temperature	T_J	℃			-55 to +150
Storage temperature	T_{STG}	℃			-55 to +150

■ Electrical Characteristics (Ta=25℃ Unless otherwise specified)

Item	Symbol	Unit	Conditions		Min	Typ	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	MMBTA55X	I_C=-100μA,I_E=0	-60		
			MMBTA56X		-80		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	MMBTA55X	I_C =-1mA,I_B=0	-60		
			MMBTA56X		-80		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=-100μA,I_C=0		-4		
Collector-base cut-off current	I_{CBO}	uA	MMBTA55X	V_{CB}=-60V			-0.1
		uA	MMBTA56X	V_{CB}=-80V			-0.1
Collector-emitter cut-off current	I_{CES}	uA	V_{CE}=-60V				-0.1
DC current gain	h_{FE1}		V_{CE}=-1V,I_C=-10mA		100		400
	h_{FE2}		V_{CE}=-1V,I_C=-100mA		100		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=-100mA,I_B=-10mA				-0.25
Base-emitter saturation voltage	$V_{BE(sat)}$	V	I_C=-100mA,I_B=-10mA				-1.2
Transition frequency	f_T	MHz	V_{CE}=-1V,I_C=-100mA,f=100MHz		50		

■ Thermal Characteristics

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

Note:

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

■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
MMBTA55X MMBTA56X	F2	Approximate 0.055	1000	8000	32000	7” reel

■Characteristics

Fig 1：Static Characteristics

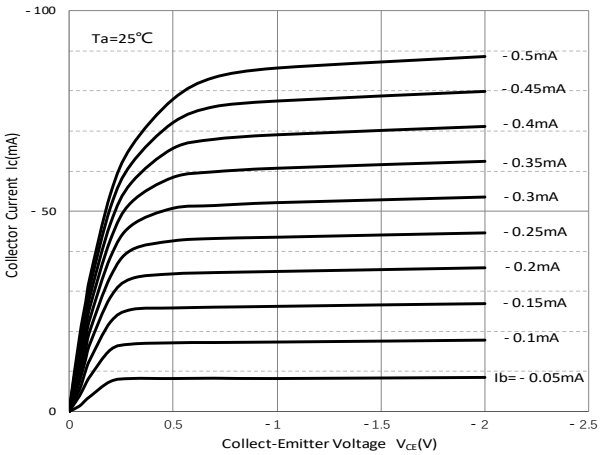


Fig 2：DC Current Gain

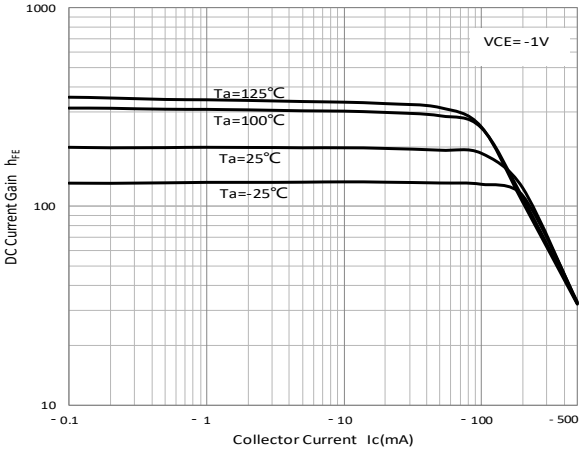


Fig 3：Collector-Emitter Saturation Voltage

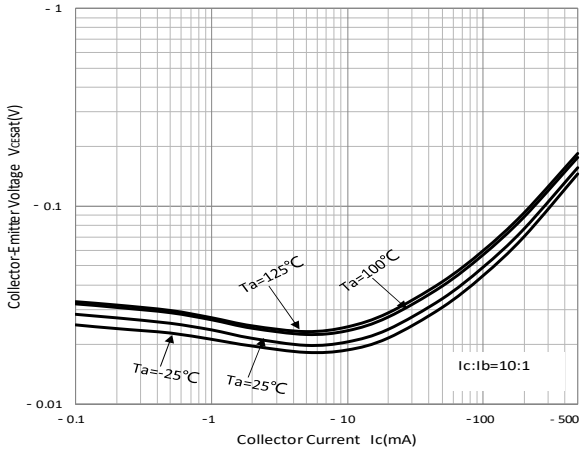


Fig 4：Base-Emitter Saturation Voltage

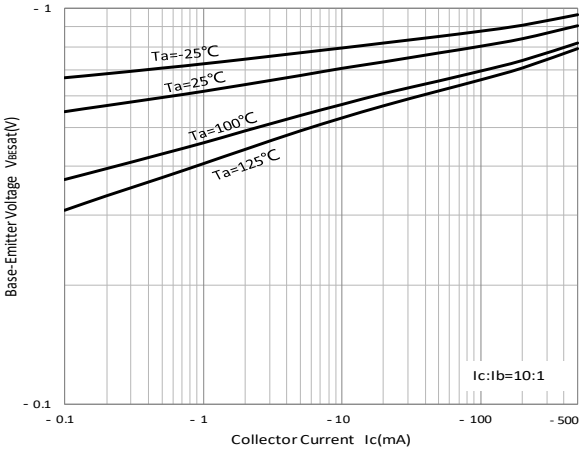


Fig 5：Base-Emitter On Voltage

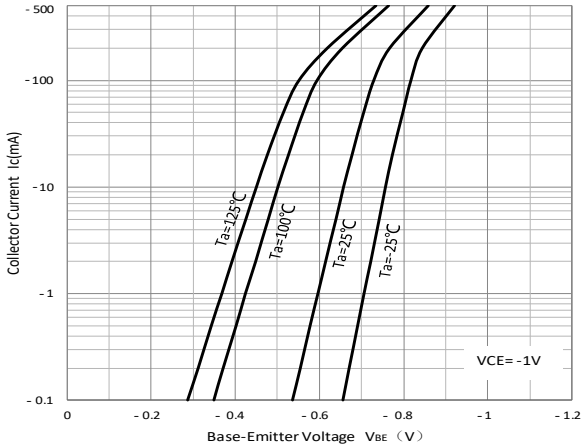
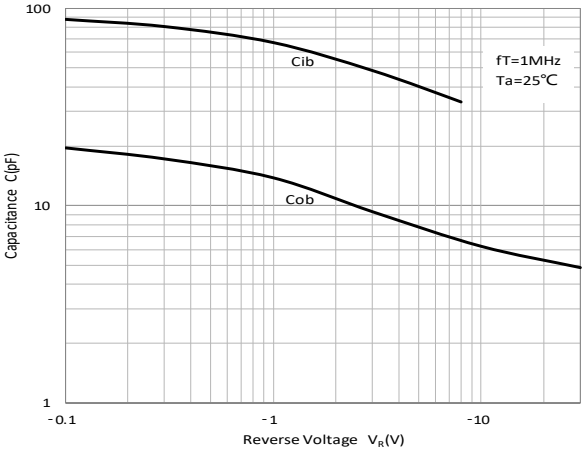
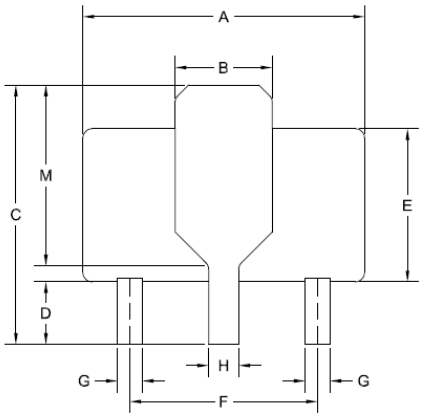


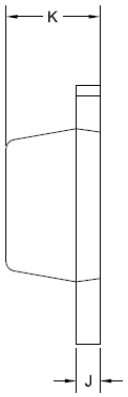
Fig 6：Cob/Cib-V_{CB}/V_{EB}



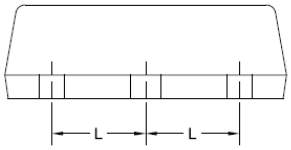
■ Outline Dimensions



BOTTOM VIEW



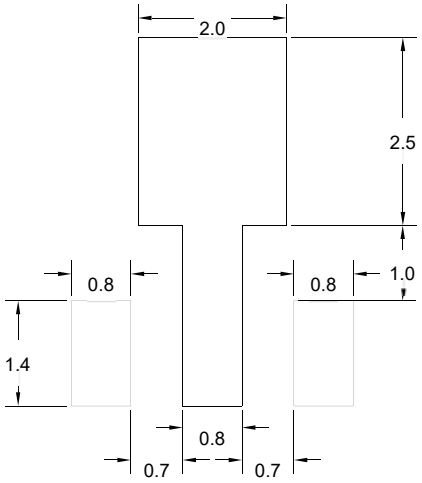
SIDE VIEW



SIDE VIEW

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

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 with 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 , or consult your nearest Yangjie's sales office for further assistance.