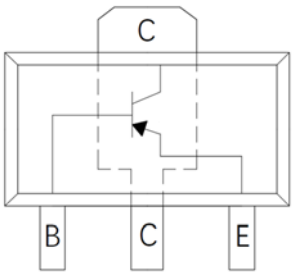
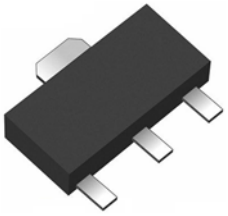
PNP General Purpose Amplifier

SOT-89





Features

- Moisture sensitivity level 1
- Halogen free and RoHS compliant
- Surface mount package ideally suited for auto matic 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				NY
Collector-base voltage	V_{CBO}	V	I_C=-100uA, I_E=0	-50
Collector-emitter voltage	V_{CEO}	V	I_C=-10mA, I_B=0	-50
Emitter-base voltage	V_{EBO}	V	I_E=-100uA, I_C=0	-5
Collector current	I_C	A		-2
Base current	I_B	A		-0.4
Power dissipation	P_D	mW		500
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	I_C=-100uA, I_E=0	-50		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C=-10mA, I_B=0	-50		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=-100uA, I_C=0	-5		
Collector-base cut-off current	I_{CBO}	uA	V_{CB}=-50V			-0.1
Emitter-base cut-off current	I_{EBO}	uA	V_{EB}=-5V			-0.1
DC current gain	h_{FE1}		I_C=-0.5A V_{CE}=-2V	120		240
	h_{FE2}		I_C=-2A V_{CE}=-2V	20		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	I_C=-1A I_B=-50mA			-0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	I_C=-1A I_B=-50mA			-1.2
Transition frequency	f_T	MHz	V_{CE}=-5V,I_C=-50mA	50		
Collector-base output capacitance	Cob	pF	V_{CB}=-10V,I_E=0, f=1MHz		20	

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J\text{-}A}$(1)	℃/W	250
Thermal resistance, junction-to-case	$R_{\theta J\text{-}C}$(1)	℃/W	200

Note:

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

■Characteristics

Fig 1：Static Characteristics

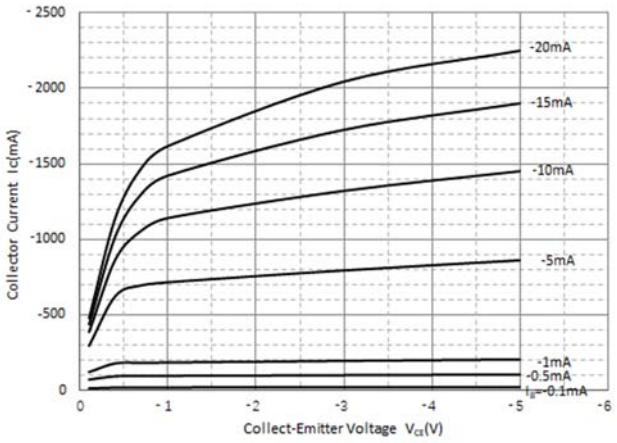


Fig 2：DC Current Gain

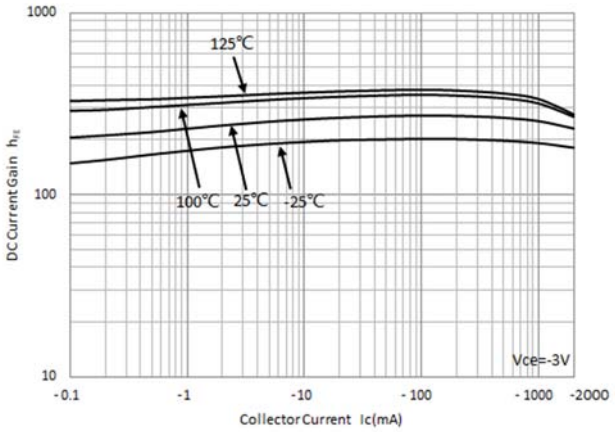


Fig 3：Collector-Emitter Saturation Voltage

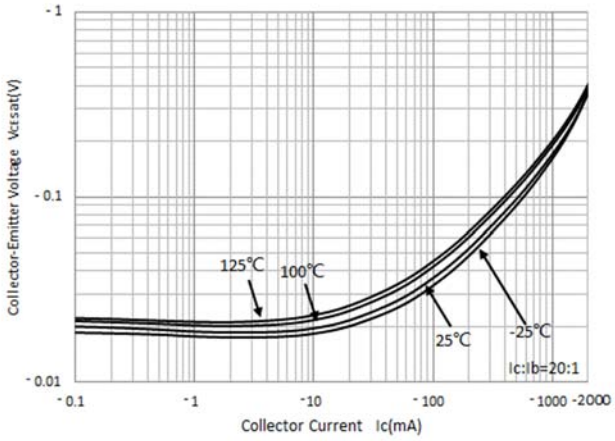


Fig 4：Base-Emitter Saturation Voltage

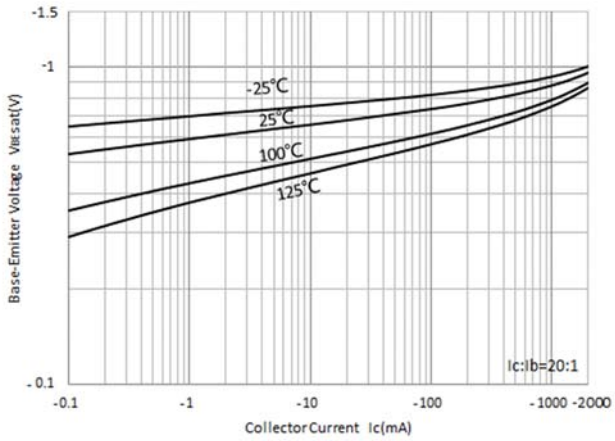


Fig 5：Base-Emitter On Voltage

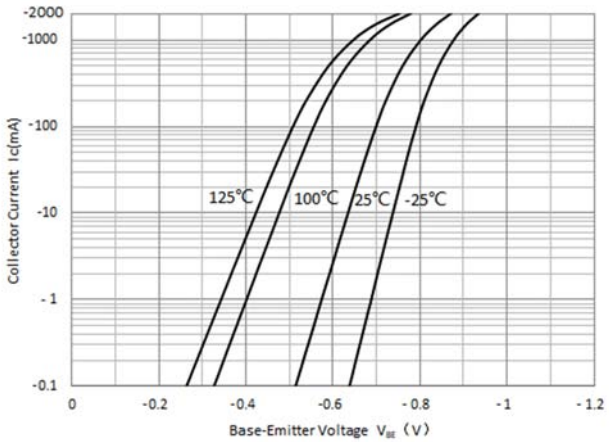


Fig 6：Cob/Cib-V_{CB}/V_{EB}

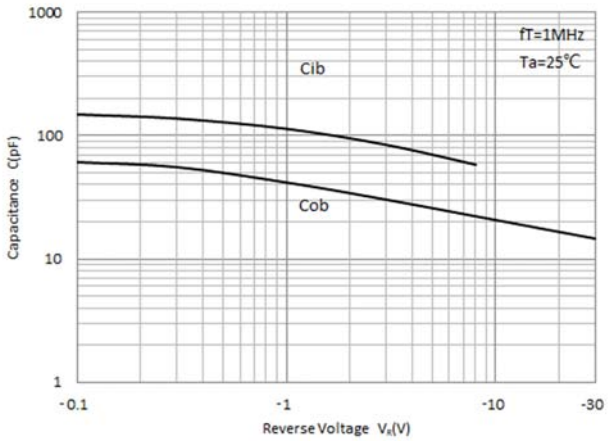


Fig 7：P_D-Ta Curve

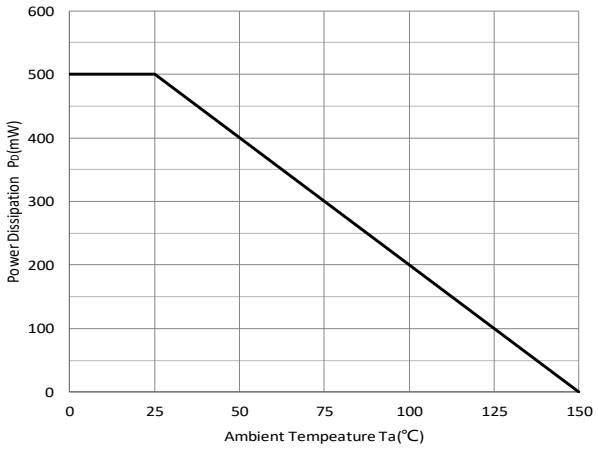
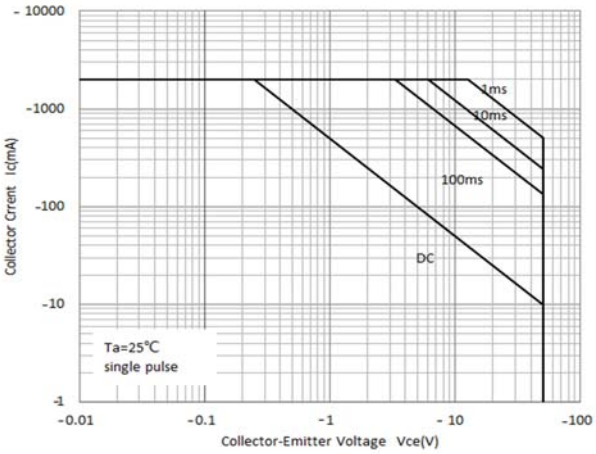


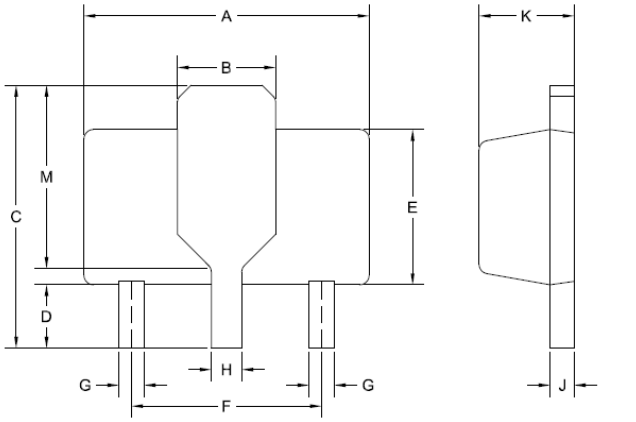
Fig 8：Safe Operating Area



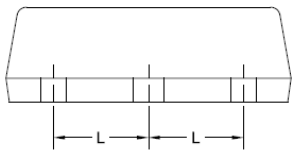
■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
2SA1213	F2	Approximate 0.055	1000	8000	32000	7” reel

■ Outline Dimensions



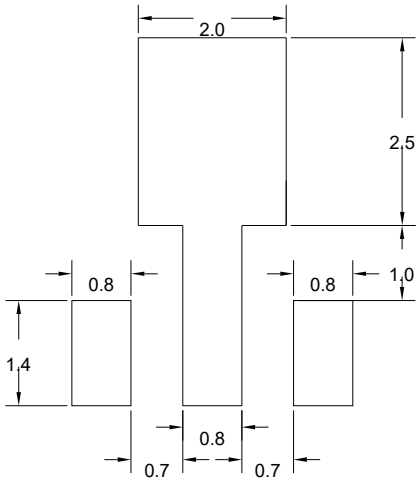
BOTTOM VIEW SIDE VIEW



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

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