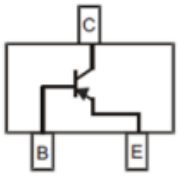
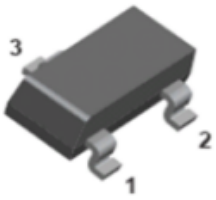
PNP General Purpose Amplifier





SOT-23

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-23
- **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				2F
Collector-base voltage	V_{CBO}	V	I_C=-10μA,I_E=0	-60
Collector-emitter voltage	V_{CEO}	V	I_C =-10mA,I_B=0	-60
Emitter-base voltage	V_{EBO}	V	I_E=-10μA,I_C=0	-5
Collector current	I_C	A		-0.6
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	I_C=-10μA,I_E=0	-60		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	I_C =-10mA,I_B=0	-60		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	I_E=-10μA,I_C=0	-5		
Collector-base cut-off current	I_{CBO}	uA	V_{CB}=-50V			-0.1
Collector-emitter cut-off current	I_{CEX}	uA	V_{CE}=-30Vdc,V_{EB}=-0.5V			-0.05
DC current gain	h_{FE1}		V_{CE}=-10V,I_C=-0.1mA	75		
	h_{FE2}		V_{CE}=-10V,I_C=-1mA	100		
	h_{FE3}		V_{CE}=-10V,I_C=-10mA	100		
	h_{FE4}		V_{CE}=-10V,I_C=-150mA	100		300
	h_{FE5}		V_{CE}=-10V,I_C=-500mA	50		
Collector-emitter saturation voltage	$V_{CE(sat)1}$	V	I_C=-150mA,I_B=-15mA			-0.4
	$V_{CE(sat)2}$	V	I_C=-500mA,I_B=-50mA			-1.6
Base-emitter saturation voltage	$V_{BE(sat)1}$	V	I_C=-150mA,I_B=-15mA			-1.3
	$V_{BE(sat)2}$	V	I_C=-500mA,I_B=-50mA			-2.6
Transition frequency	f_T	MHz	V_{CE}=-20V,I_C=-50mA,f=100MHz	200		
Delay time	td	ns	V_{CC}=-30V, I_C=-150mA, I_{B1}=-15mA			10
Rise time	tr	ns				25
Storage time	ts	ns	V_{CC}=-6V, I_C=-150mA, I_{B1}=-I_{B2}=-15mA			225
Fall time	tf	ns				60

■ Thermal Characteristics

Parameter	Symbol	Unit	Value
Thermal resistance, junction-to-ambient	$R_{\theta J-A}$(1)	℃/W	417
Thermal resistance, junction-to-case	$R_{\theta J-C}$(1)	℃/W	334

Note:

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

■Characteristics

Fig 1：Static Characteristics

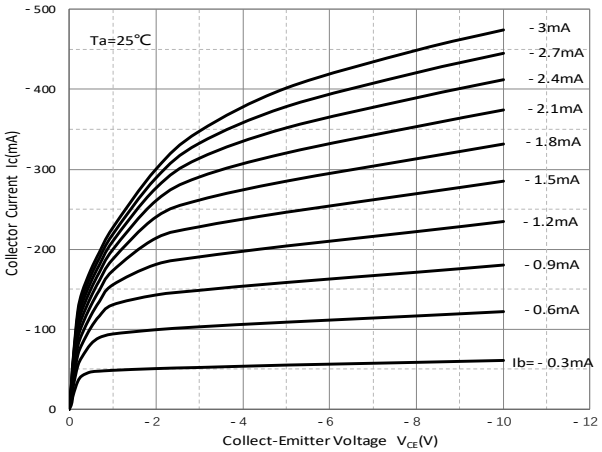


Fig 2：DC Current Gain

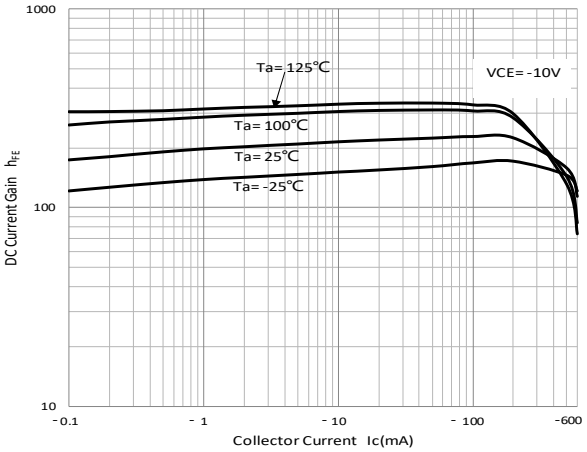


Fig 3：Collector-Emitter Saturation Voltage

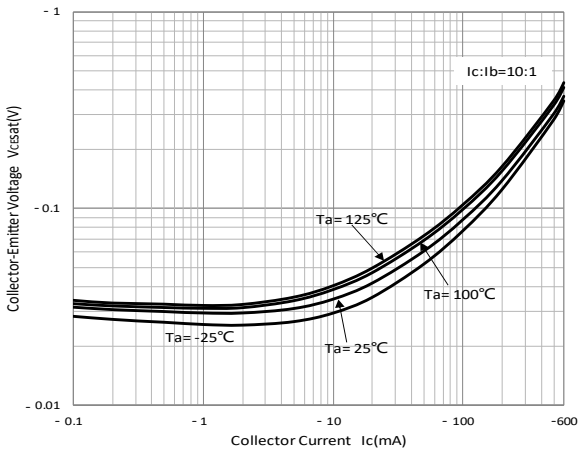


Fig 4：Base-Emitter Saturation Voltage

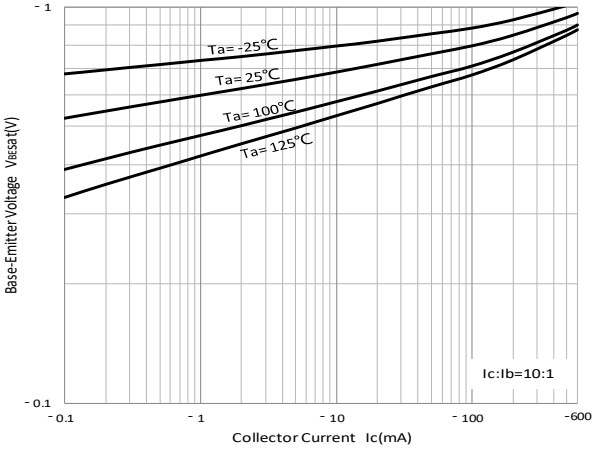


Fig 5：Base-Emitter On Voltage

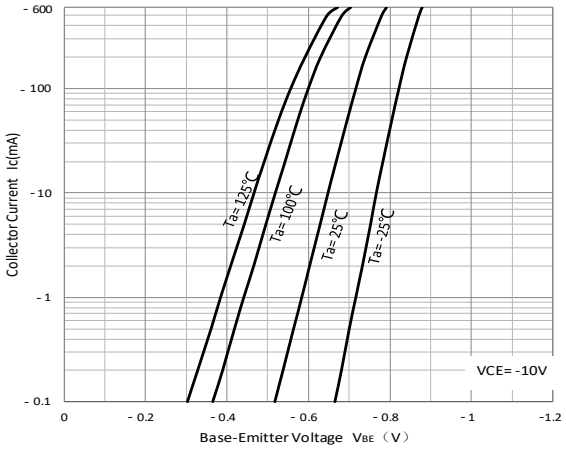


Fig 6：Cob/Cib-V_{CB}/V_{EB}

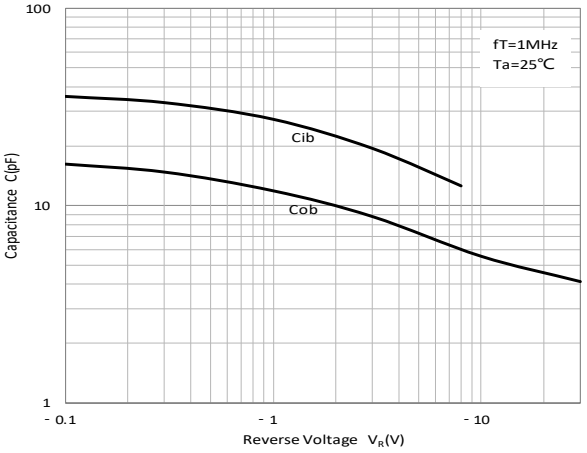
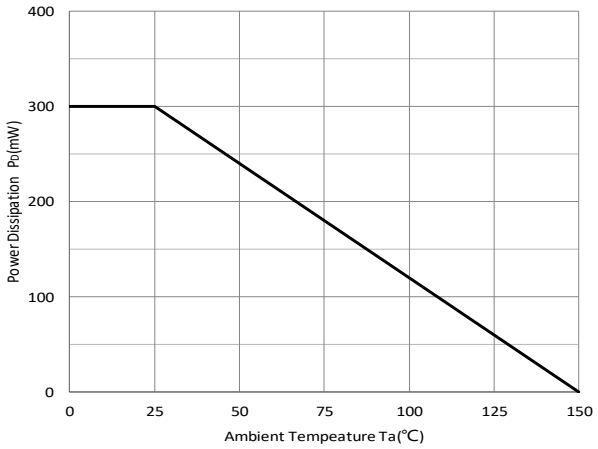


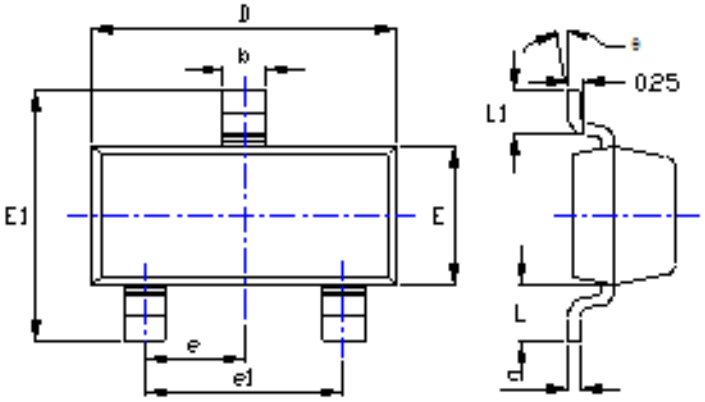
Fig 7：P_D-Ta Curve

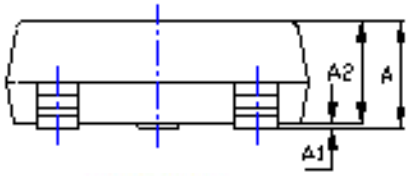


■Ordering Information

Preferred P/N	Packing code	Unit weight(g)	Minimum package(pcs)	Inner box quantity(pcs)	Outer carton quantity(pcs)	Delivery mode
MMBT2907A	F2	Approximate 0.008	3000	30000	120000	7” reel
MMBT2907A	F4	Approximate 0.008	10000	/	210000	13” reel

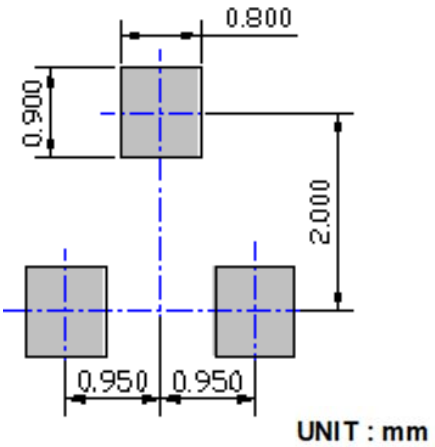
■ Outline Dimensions





DIMENSIONS				
SYMBOL	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071	0.079	1.800	2.000
L	0.022REF		0.550REF	
L1	0.012	0.020	0.300	0.500
θ	0°	8°	0°	8°

■ Suggested Pad Layout



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