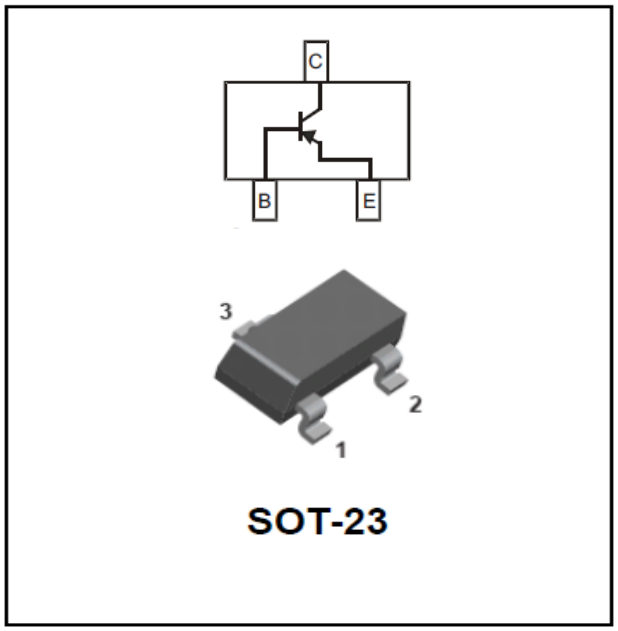
PNP General Purpose Amplifier



Features

●Epoxy meets UL-94 V-0 flammability rating
●Halogen free available upon request by adding suffix ”HF”
●Moisture Sensitivity Level 1
●High Conductance
●Surface mount package ideally Suited for Automatic Insertion

Mechanical Data

● **Package**: SOT-23
Molding compound meets UL 94 V-0 flammability rating, RoHS-compliant, halogen-free
● **Terminals:** Tin plated leads, solderable per J-STD-002 and JESD22-B102
● **Marking**: M2B

■Maximum Rantings (Ta=25℃ unless otherwise noted)

Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V		-60
Collector-Emitter Voltage	V_{CEO}	V		-40
Emitter-Base Voltage	V_{EBO}	V		-5
Collector Current	I_C	A		-0.6
Collector Power Dissipation	P_C	W		0.25
Junction Temperature	T_j	℃		-55 to +150
Storage Temperature	T_{stg}	℃		-55 to +150

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

Item	Symbol	Unit	Conditions	Min	Max
Collector-base breakdown voltage	V_{CBO}	V	IC=-10μA,IE=0	-60	
Collector-emitter breakdown voltage	V_{CEO}	V	IC =-10mA,IB=0	-40	
Emitter-base breakdown voltage	V_{EBO}	V	IE=-10μA,IC=0	-5	
Collector-base cut-off current	I_{CBO}	nA	VCB=-50V,IE=0		-20
Base cut-off current	I_{EBO}	nA	VCE=-3V, IC =0		-10
Collector-emitter cut-off current	I_{CEX}	nA	VCE=-30V, VBE=-0.5V		-50
DC current gain	h_{FE}		VCE=-10V,IC=-0.1mA	52	
	h_{FE}		VCE=-10V,IC=-150mA	100	300
	h_{FE}		VCE=-10V,IC=-500mA	32	
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	IC=-150mA,IB=-15mA		-0.4
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	IC=-500mA,IB=-50mA		-0.67
Base-emitter saturation voltage	$V_{BE(sat)*}$	V	IC=-150mA,IB=-15mA		-1
Base-emitter saturation voltage	$V_{BE(sat)*}$	V	IC=-500mA,IB=-50mA		-1.2
Transition frequency	Ft	MHz	VCE=-20V,IC=-50mA,f=100MHz	200	
Delay time	td	ns	VCC=-30V,IC=-150mA, IB1=-15mA		10
Rise time	tr	ns			25
Storage time	ts	ns	VCC=-6V,IC=-150mA, IB1= IB2=-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

■Ordering Information (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
MMBT2907	F2	Approximate 0.008	3000	30000	120000	7” reel
MMBT2907	F4	Approximate 0.008	10000	/	210000	13” reel

■Characteristics(Typical)

Fig 1：Static Characteristics

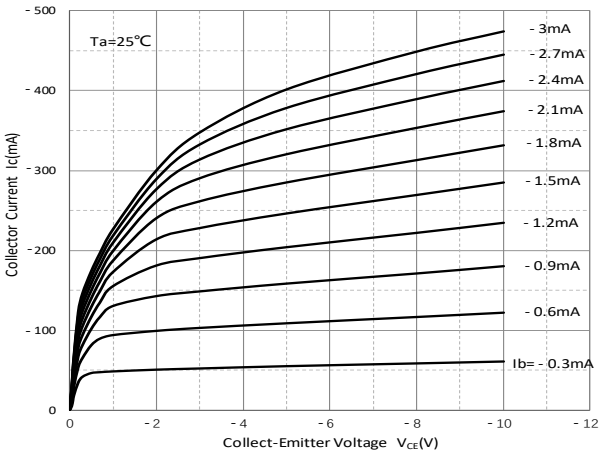


Fig 2：DC Current Gain

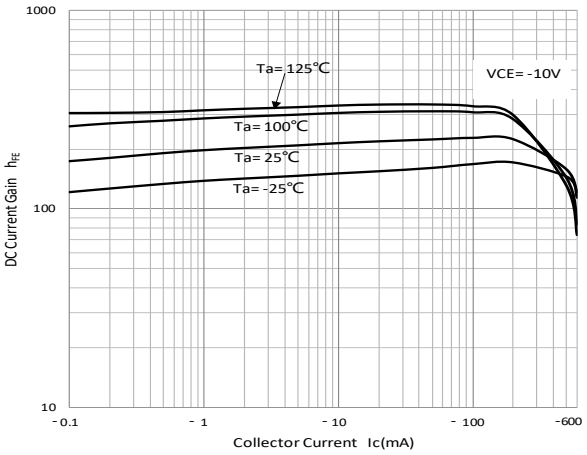


Fig 3：Collector-Emitter Saturation Voltage

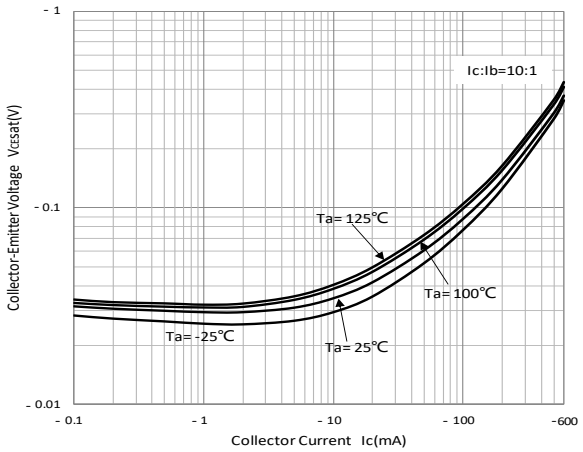


Fig 4：Base-Emitter Saturation Voltage

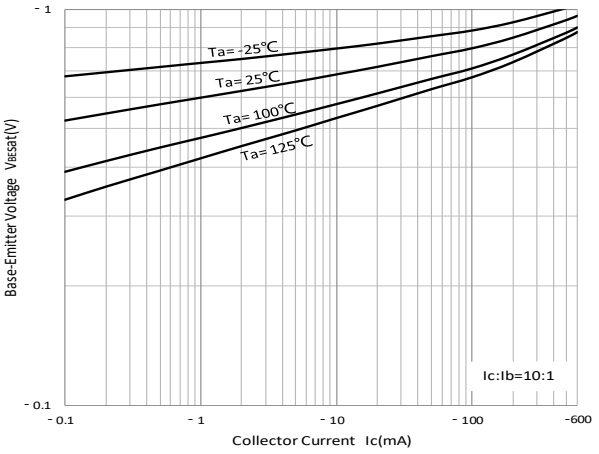


Fig 5：Base-Emitter On Voltage

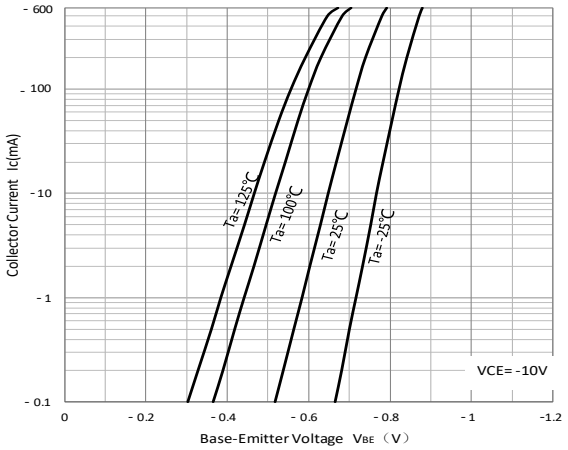


Fig 6：Cob/Cib-V_{CB}/V_{EB}

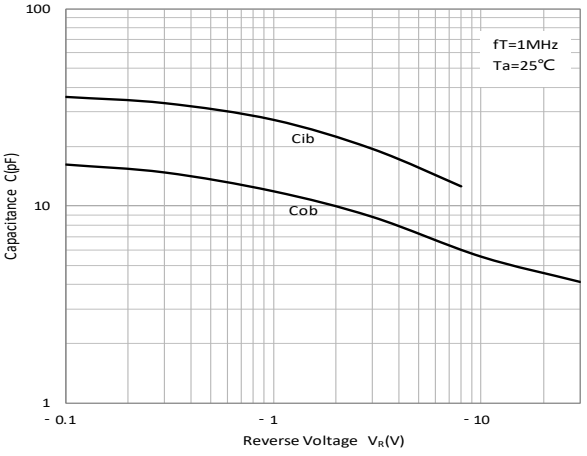
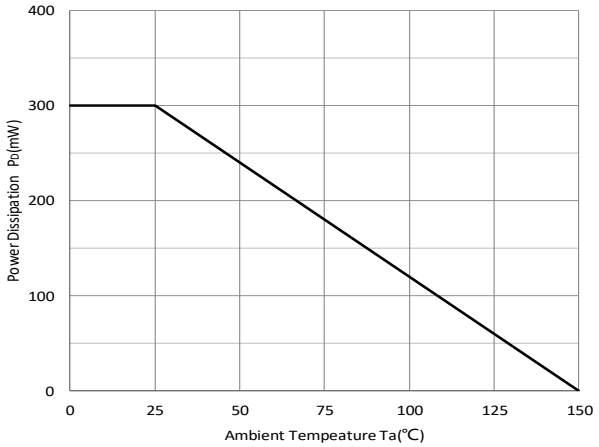
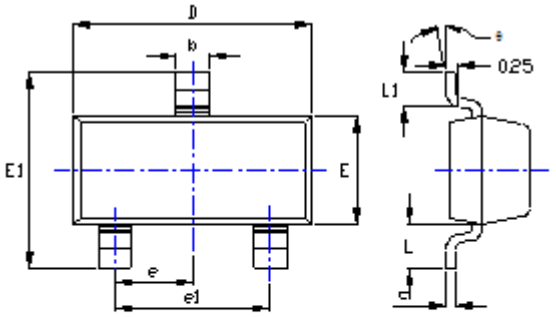
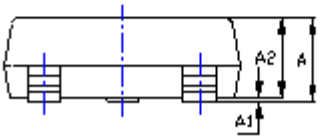


Fig 7：P_D-Ta Curve



■SOT-23 Package Outline Dimensions

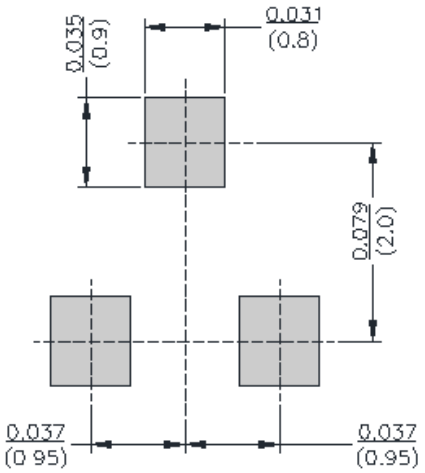




SYMBOL	DIMENSIONS			
	INCHES		Millimeter	
	MIN.	MAX.	MIN.	MAX.
A	0.035	0.045	0.900	1.150
A1	0.000	0.004	0.000	0.100
A2	0.035	0.041	0.900	1.050
b	0.012	0.020	0.300	0.500
c	0.004	0.008	0.100	0.200
D	0.110	0.118	2.800	3.000
E	0.047	0.055	1.200	1.400
E1	0.089	0.100	2.250	2.550
e	0.037TYP		0.950TYP	
e1	0.071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

Note:
1. All dimensions are in millimeters (mm) unless otherwise specified.
[所有尺寸均以毫米为单位，除非另有说明]
2. General tolerances: ±0.10mm unless otherwise specified.
[通用公差为±0.10mm，除非另有说明]
3. Dimensions and tolerances per ASME Y14.5M-2018.
[尺寸和公差遵循 ASME Y14.5M-2018 标准]
4.All dimensions shown are exclusive of burrs and gate residues. Burrs and gate vestiges shall not exceed 0.15 mm in maximum.
[所有尺寸均不包括毛刺和浇口残留。毛刺与浇口残留的尺寸最大不得超过 0.15mm]
5.Dimension b does not include dambar protrusion of max 0.100 mm per side.
[尺寸b不包括单边最大0.100 MM的中筋凸出部分]
6.Dimensions D and E are the overall extreme outer dimensions of the mold compound. These dimensions exclude mold flash, lead flash, protrusions and burrs but include the maximum allowable mold mismatch.
[D和E是塑封体的外部极限尺寸，不包括包封溢料、内引线溢料、凸出部分以及胶体毛刺，但是包含了包封错位的最大尺寸]
7.Formed leads shall be planar with respect to one another within a maximum of 0.076 mm relative to the seating plane.
[成型的管脚应为同一平面，共面性最大为0.1mm]

■SOT-23 Soldering Footprint



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