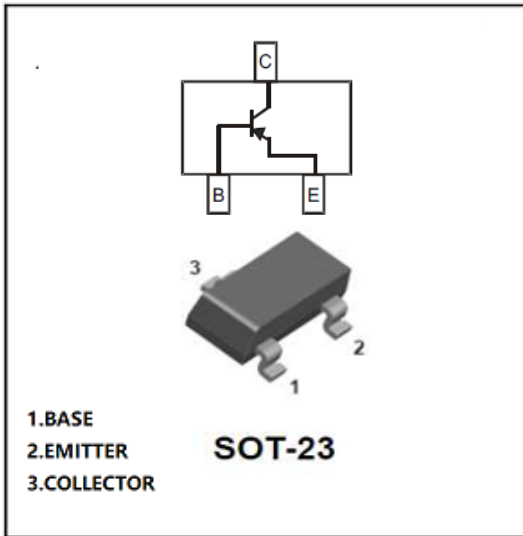


PNP Transistor



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:** 9B

■ Maximum Ratings (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Value
Collector-Base Voltage	V_{CBO}	V	-40
Collector-Emitter Voltage	V_{CEO}	V	-40
Emitter-Base Voltage	V_{EBO}	V	-5
Collector Current	I_C	A	-1
Collector Power Dissipation	P_C	mW	300
Junction Temperature	T_j	°C	150
Storage Temperature	T_{stg}	°C	-55 to +150



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■ Electrical Characteristics (Ta=25°C unless otherwise noted)

Item	Symbol	Unit	Conditions	Min	Typ	Max
Collector-base breakdown voltage	V_{CBO}	V	IC= -10uA,IE=0	-40		
Collector-emitter breakdown voltage	V_{CEO^*}	V	IC= -1mA,IB=0	-40		
Emitter-base breakdown voltage	V_{EBO}	V	IE= -10μA,IC=0	-5		
Collector-emitter cut-off current	I_{CEO}	nA	VCE= -30V, IB =0			-100
Collector-base cut-off current	I_{CBO}	nA	VCB= -30V, IE =0			-100
Emitter-base cut-off current	I_{EBO}	nA	VEB= -5 V, IC =0			-100
DC current gain	h_{FE}		VCE=- 5V,IC= -1mA	300		
	h_{FE}		VCE=- 5V,IC= -100mA	300		800
	h_{FE}		VCE=- 5V,IC= -500mA	250		
	h_{FE}		VCE=- 5V,IC= -1A	160		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	IC= -100mA,IB= -1mA			-0.2
	$V_{CE(sat)}$	V	IC= -500mA,IB= -20mA			-0.35
	$V_{CE(sat)}$	V	IC= -1A,IB= -100mA			-0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	IC= -1A,IB= -50mA			-1.1
Base-emitter voltage	V_{BE}	V	VCE= -5V,IC= -1A			-1
Collector-base output capacitance	Cob	pF	VCB= -10V,f=1MHz			12
Transition frequency	f_T	MHz	VCE= -10V,IC= -50mA,f=100MHz	150		

■ Ordering Information (Example)

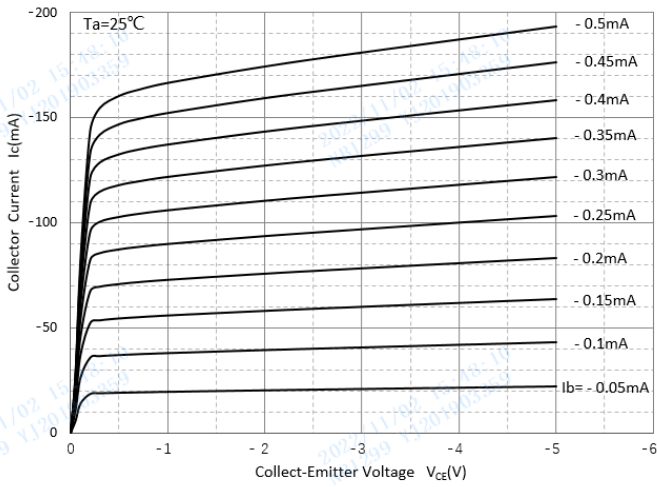
PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PMMT591A	F2	Approximate 0.008	3000	30000	120000	7" reel



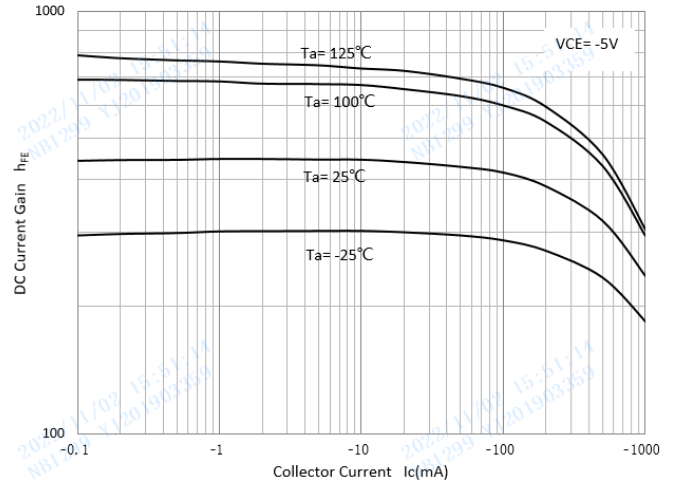
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■ Characteristics (Typical)

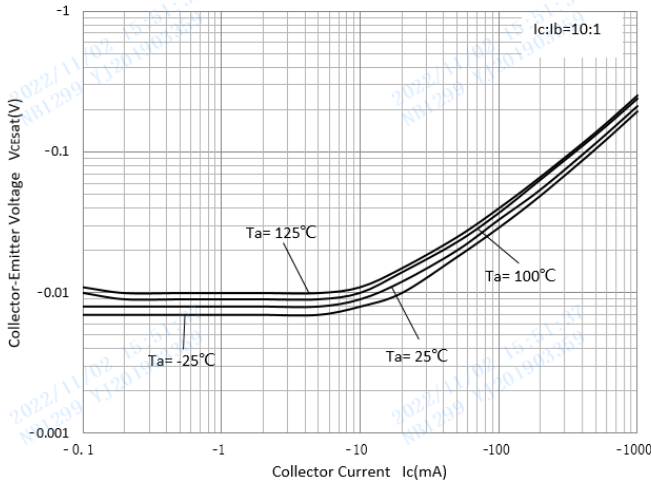
Static Characteristic



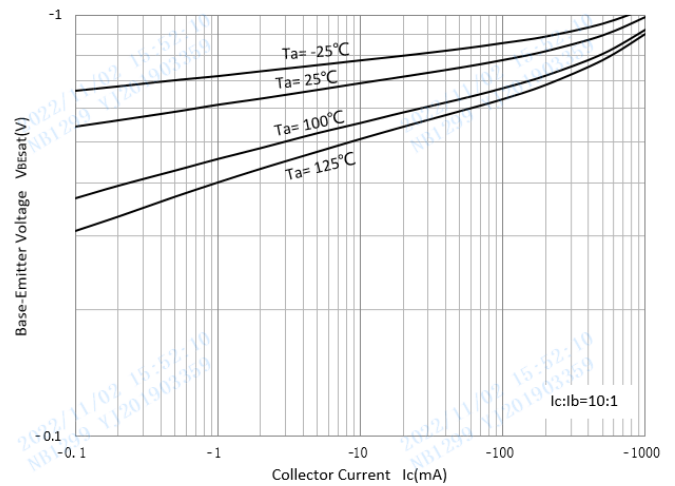
DC Current Gain



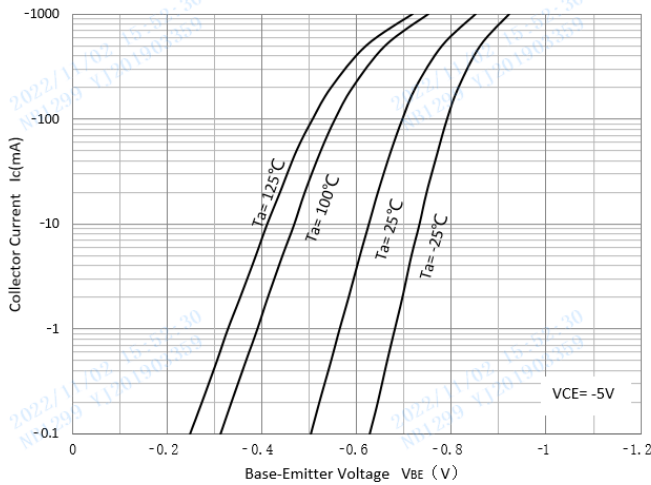
Collector-Emittor Saturation Voltage



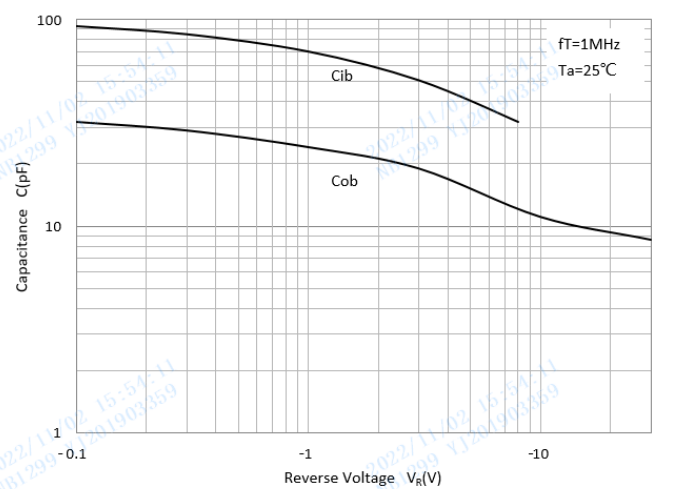
Base-Emittor Saturation Voltage



Base-Emittor On Voltage

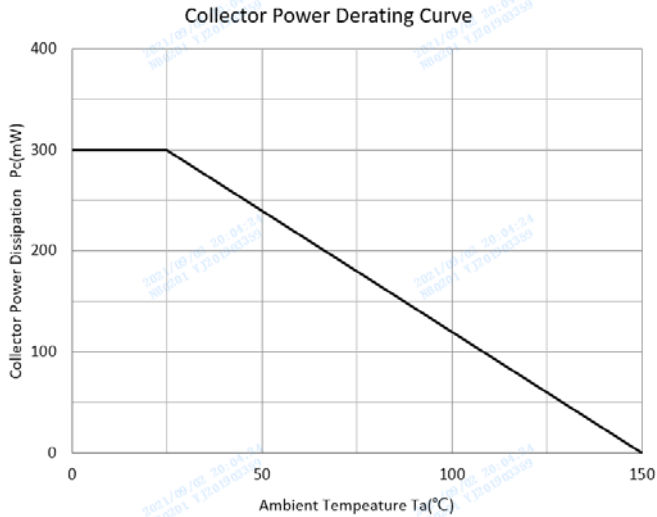


Cob/Cib-V_{CB}/V_{EB}

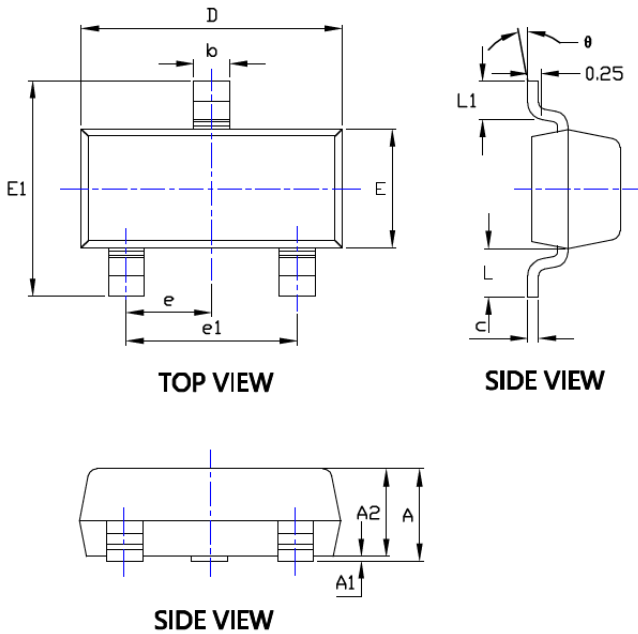




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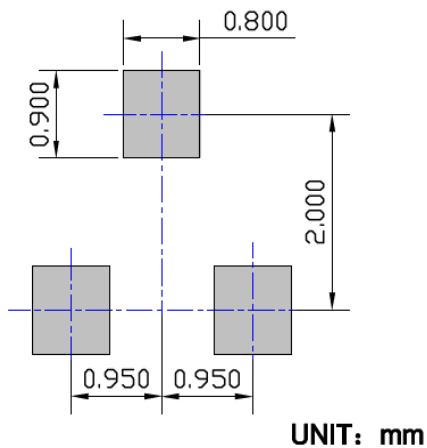


■SOT-23 Package Outline Dimensions



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°

■SOT-23 Soldering Footprint





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