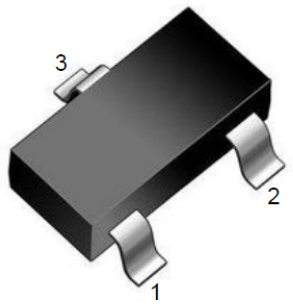
NPN General Purpose Amplifier

SOT-23



1、Base
2、Emitter
3、Collector

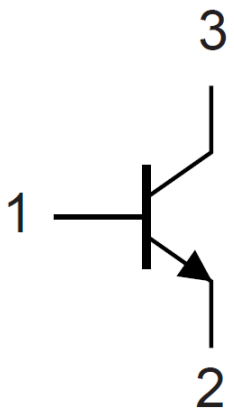
Features

- We declare that the material of product compliance with RoHS requirements and Halogen Free
- Surface mount package ideally suited for automatic insertion
- Moisture Sensitivity Level 1
- Low equivalent on-resisitance

Mechanical Data

- Package: SOT-23
- Terminals: Tin plated leads, solderable per J-STD-002 and JESD22-B102
- Marking: 491

■ Equivalent Circuit



■ Maximum Ratings (Ta=25℃ Unless otherwise specified)

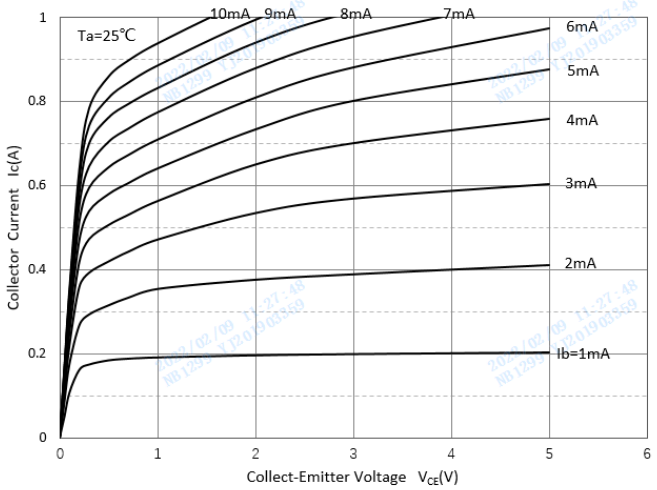
Item	Symbol	Unit	Conditions	Value
Collector-Base Voltage	V_{CBO}	V	IC=100μA,IE=0	80
Collector-Emitter Voltage	V_{CEO}	V	IC =10mA,IB=0	60
Emitter-Base Voltage	V_{EBO}	V	IE=100μA,IC=0	5
Collector Current	I_C	A		1
Collector Power Dissipation	P_C	mW		300
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$			417
Operation Junction Temperature	T_J	℃		150
Storage Temperature	T_{STG}	℃		-55 to +150

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

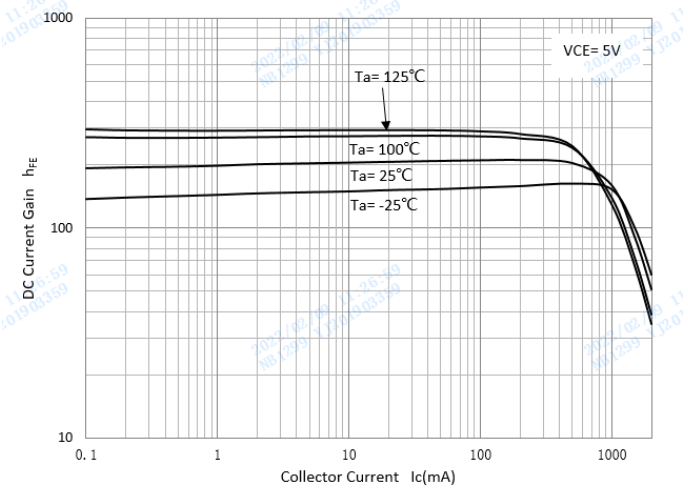
Item	Symbol	Unit	Conditions	Min	Type	Max
Collector-base breakdown voltage	$V_{(BR)CBO}$	V	IC=100μA,IE=0	80		
Collector-emitter breakdown voltage	$V_{(BR)CEO}$	V	IC =10mA,IB=0	60		
Emitter-base breakdown voltage	$V_{(BR)EBO}$	V	IE=100μA,IC=0	5		
Collector-Base cut-off current	I_{CBO}	uA	V_{CB}=60 V ,IE=0			0.1
Emitter-Base cut-off current	I_{EBO}	uA	V_{EB}=4 V , IC=0			0.1
DC current gain	$h_{FE}1$		VCE=5V,IC=1mA	100		
	$h_{FE}2$		VCE=5V,IC=500mA	100		300
	$h_{FE}3$		VCE=5V,IC=1A	80		
	$h_{FE}4$		VCE=5V,IC=2A	30		
Collector-emitter saturation voltage	$V_{CE(sat)}$	V	IC=500mA,IB=50mA			0.25
		V	IC=1A,IB=100mA			0.5
Base-emitter saturation voltage	$V_{BE(sat)}$	V	IC=1A,IB=100mA			1.1
Base-emitter voltage	V_{BE}	V	VCE=5V,IC=1A			1
Transition frequency	f_T	MHz	VCE=10V, IC=50mA,f=100MHz	150		
Collector-Base Output Capacitance	Cob	pF	V_{CB}=10V ,IE=0, f=1MHz			10

■ Electrical Characteristics (Typical)

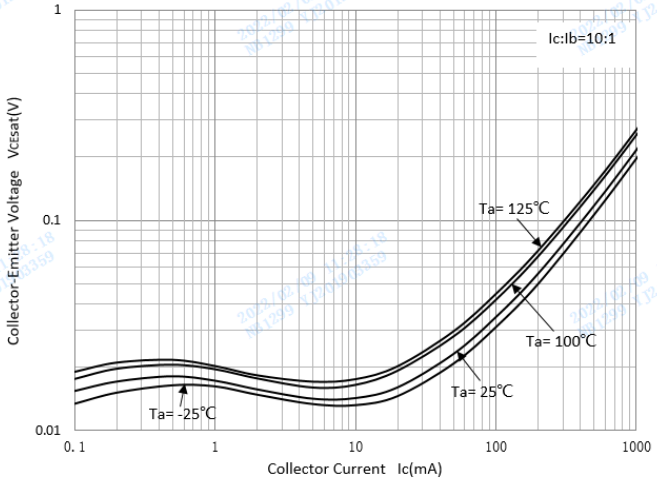
Static Characteristic



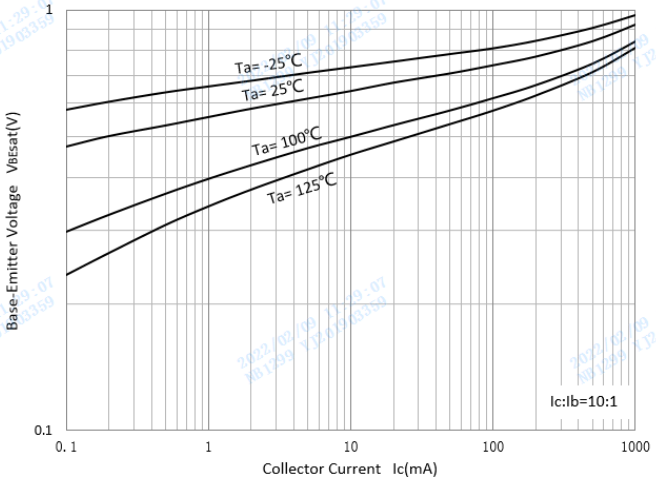
DC Current Gain



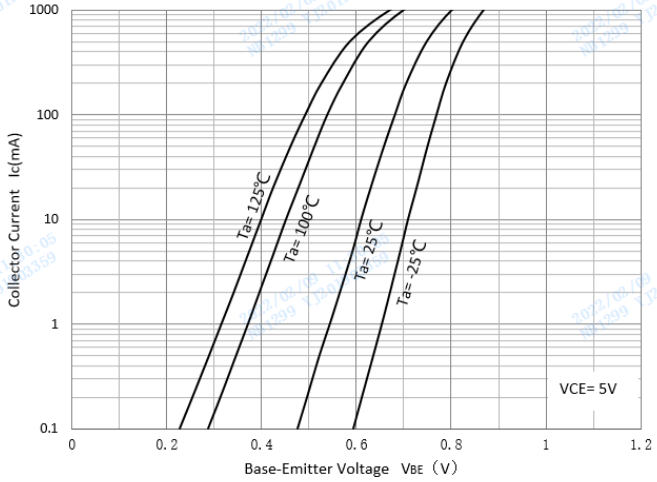
Collector-Emitter Saturation Voltage



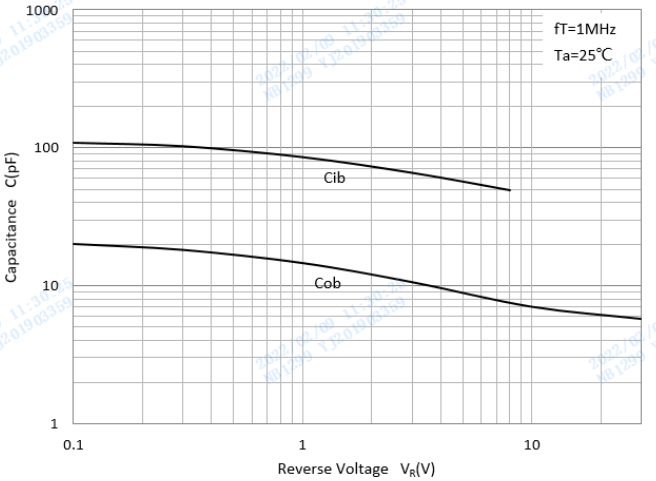
Base-Emitter Saturation Voltage

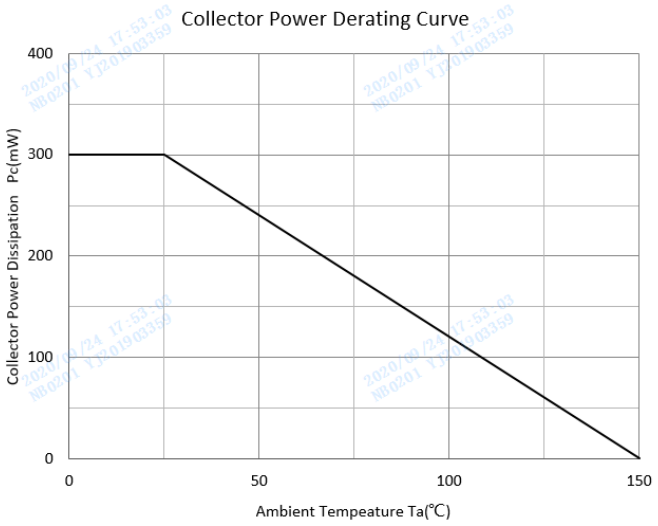


Base-Emitter On Voltage



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

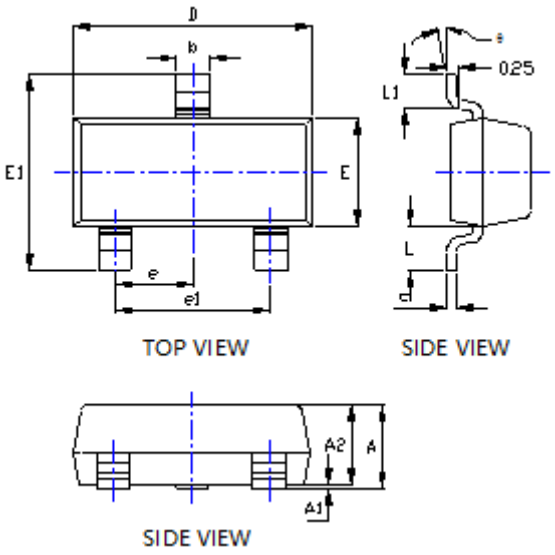




■ **Ordering Information** (Example)

PREFERED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
FMMT491	F2	Approximate 0.008	3000	30000	120000	7” reel

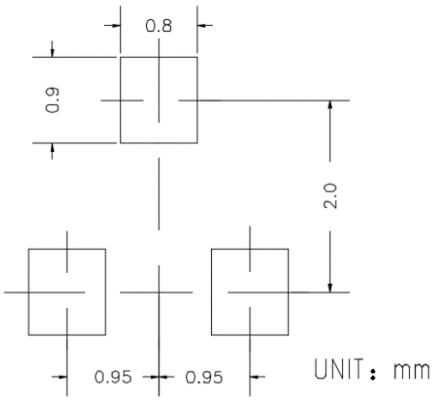
■SOT-23 Package Outline Dimensions



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°

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



SUGGESTED SOLDER PAD LAYOUT

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