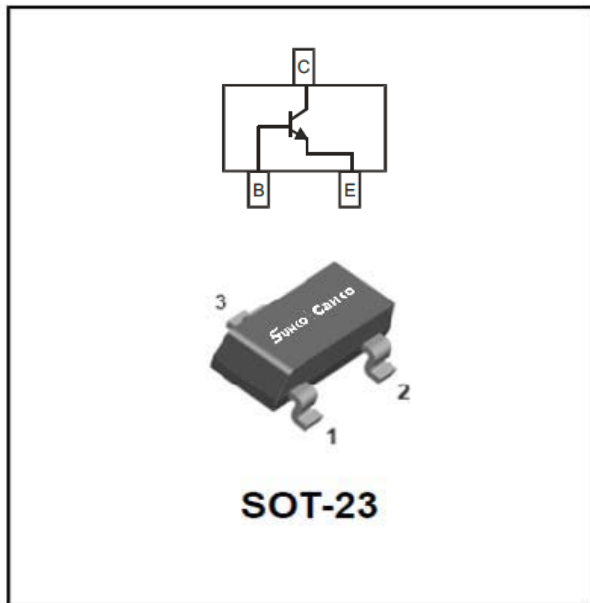


NPN General Purpose Amplifier



Features

- Low collector-emitter saturation voltage
- High current capability
- Improved device reliability due to reduced heat generation
- Epoxy meets UL94 V0 flammability rating
- Halogen free available upon request by adding suffix "HF"
- Moisture Sensitivity Level 1
- Marking: 3B

Applications

- Supply line switching circuits
- Battery management
- DC-DC convertor
- Strobe flash
- Motor and lamp driver

■ Maximum Ratings (Ta=25°C)

Item	Symbol	Unit	Conditions	Value
Collector-Emitter Voltage	V_{CE0}	V	$I_C=1mA, I_B=0$	20
Collector-Base Voltage	V_{CB0}	V	$I_C=100\mu A, I_E=0$	30
Emitter-Base Voltage	V_{EB0}	V	$I_E=100\mu A, I_C=0$	5
Collector Current	I_C	A		1
Collector Power Dissipation	P_C	mW		300
Thermal Resistance From Junction To Ambient	$R_{\theta JA}$	°C/W		417
Operation Junction Temperature	T_j	°C		150
Storage Temperature	T_{stg}	°C		-55 to +150

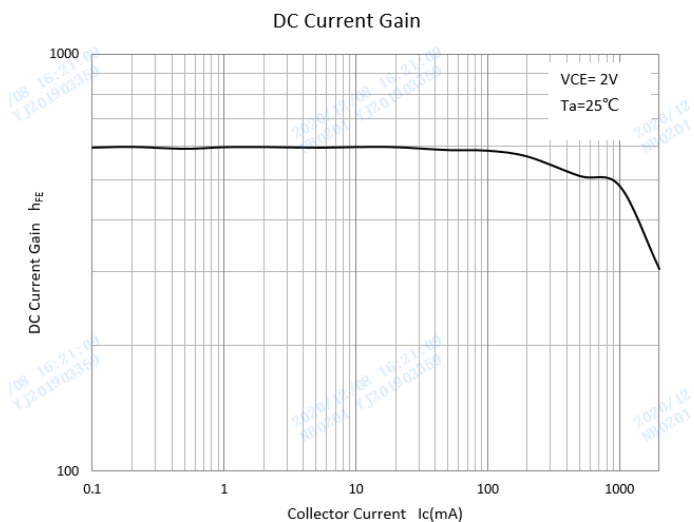
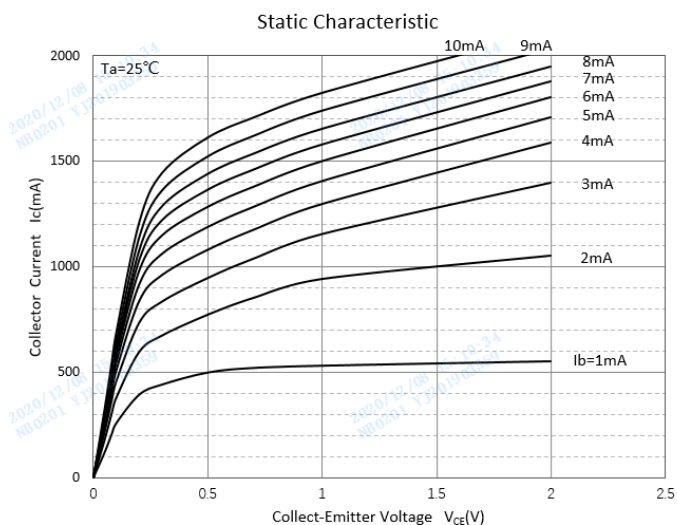
■ Ordering Information (Example)

PREFERRED P/N	PACKING CODE	UNIT WEIGHT(g)	MINIMUM PACKAGE(pcs)	INNER BOX QUANTITY(pcs)	OUTER CARTON QUANTITY(pcs)	DELIVERY MODE
PBSS4120T	F2	Approximate 0.008	3000	30000	120000	7" reel

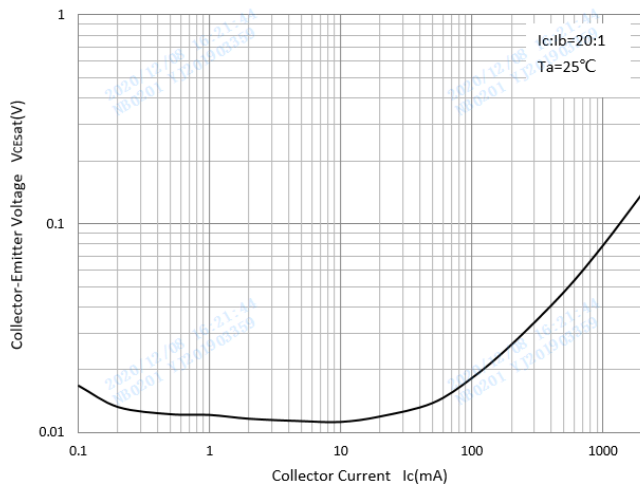
■Electrical Characteristics (T_a=25°C)

Item	Symbol	Unit	Conditions	Min	Max
CollectorEmitter Voltage	V _{CEO}	V	I _C =1mA, I _B =0	20	
CollectorBase Voltage	V _{CBO}	V	I _C =100uA, I _E =0	30	
EmitterBase Voltage	V _{EBO}	V	I _E =100uA, I _C =0	5	
Collectorbase Cutoff Current	I _{CBO}	nA	V _{CB} =30V		100
Baseemitter Cutoff Current	I _{EB0}	nA	V _{EB} =4V		100
DC Current Gain	h _{FE}		I _C =100mA V _{CE} =2V	350	
			I _C =500mA V _{CE} =2V	300	
			I _C =1A V _{CE} =2V	280	
CollectorEmitter Saturation Voltage	V _{CE(sat)1}	mV	I _C =100mA I _B =1mA		80
	V _{CE(sat)2}	mV	I _C =500mA I _B =50mA		110
	V _{CE(sat)3}	mV	I _C =750mA I _B =15mA		200
	V _{CE(sat)4}	mV	I _C =1A I _B =50mA		250
Equivalent OnResistance	R _{CE(sat)}	mΩ	I _C =500mA I _B =50mA		220
BaseEmitter Saturation Voltage	V _{BE(sat)}	V	I _C =1A I _B =100mA		1.1
BaseEmitter TurnOn Voltage	V _{BE(on)}	V	I _C =100mA V _{CE} =2V		0.75
Transition frequency	f _T	MHz	I _C =100mA, V _{CE} =10V, f=100MHz	100	
Collector Capacitance	Cob	pF	V _{CB} =10V, I _E =0, f=1MHz		20

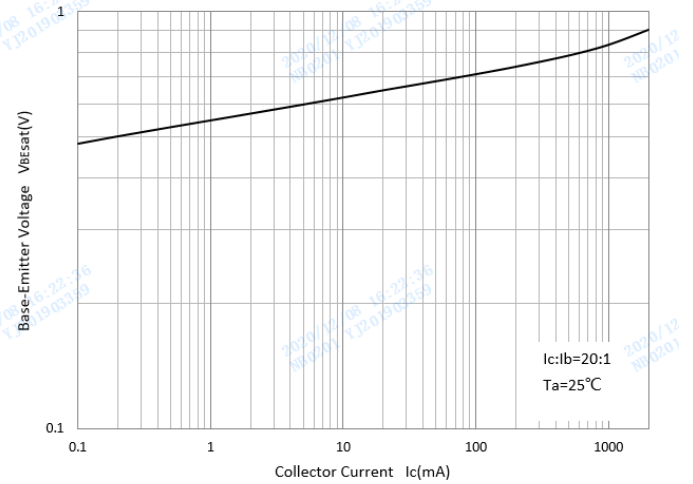
■Characteristics(Typical)



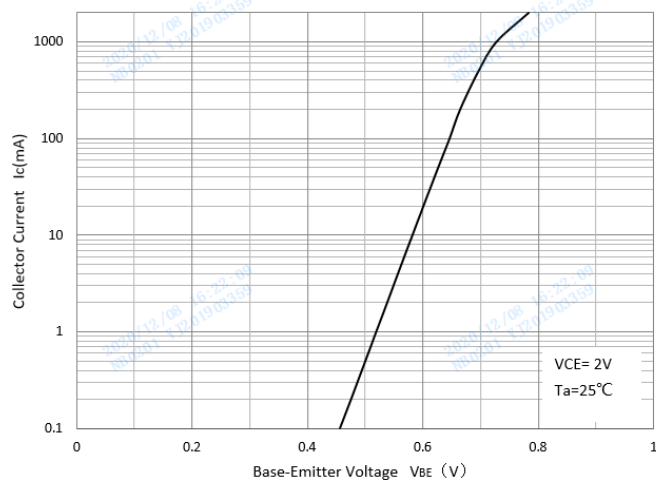
Collector-Emitter Saturation Voltage



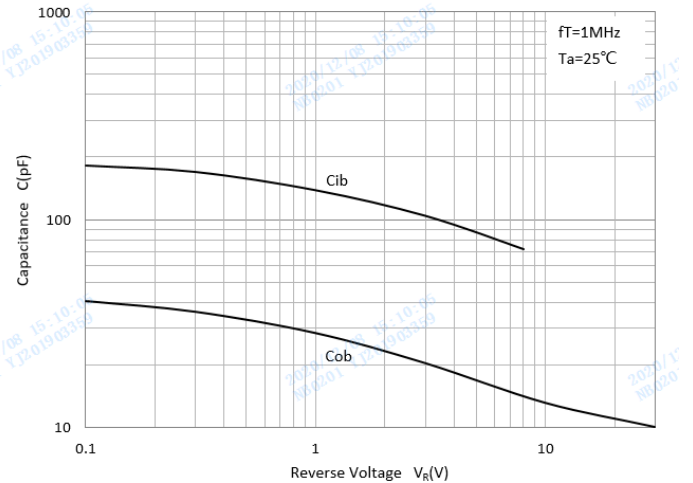
Base-Emitter Saturation Voltage



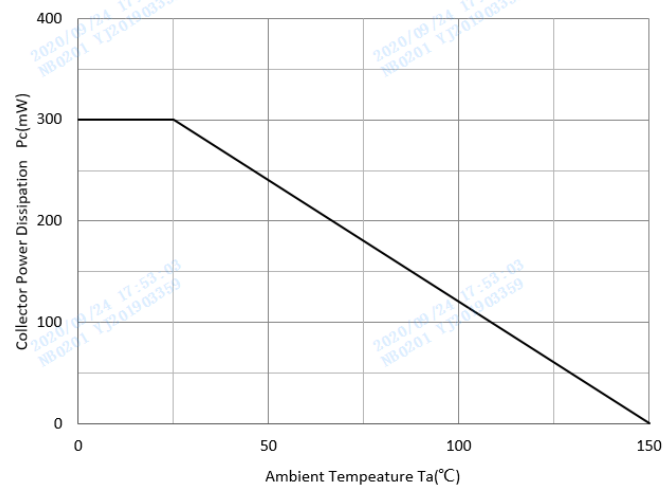
Base-Emitter On Voltage



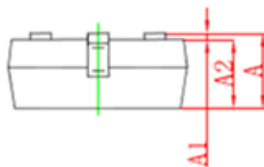
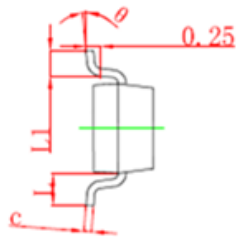
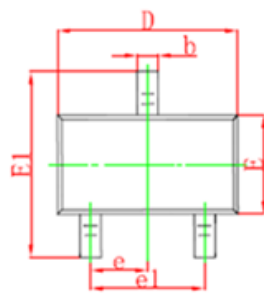
$C_{ob}/C_{ib}-V_{CB}/V_{EB}$



Collector Power Derating Curve

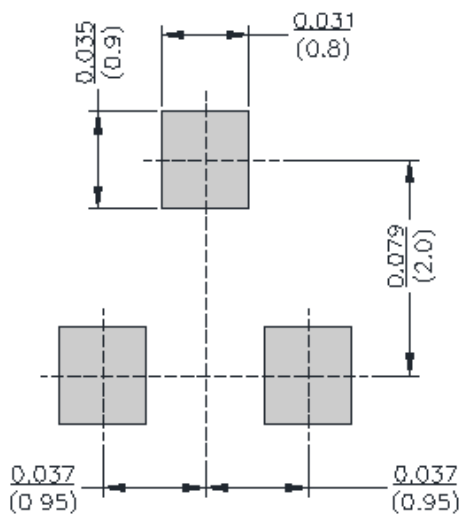


■SOT-23 Package Outline Dimensions



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.150	0.035	0.045
A1	0.000	0.100	0.000	0.004
A2	0.900	1.050	0.035	0.041
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.800	3.000	0.110	0.118
E	1.200	1.400	0.047	0.055
E1	2.250	2.550	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.800	2.000	0.071	0.079
L	0.550REF		0.022REF	
L1	0.300	0.500	0.012	0.020
θ	0°	8°	0°	8°

■SOT-23 Soldering Footprint



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