



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 -)

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_{JA}	- /W		417

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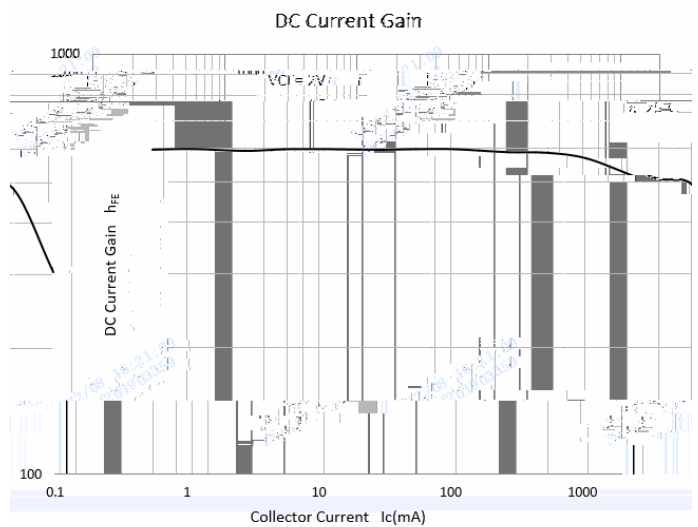
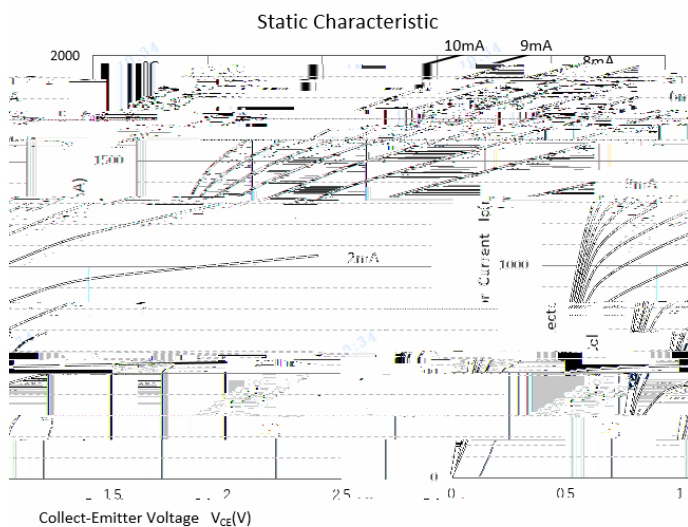


PBSS4120T

Electrical Characteristics $T_a = 25^\circ\text{C}$

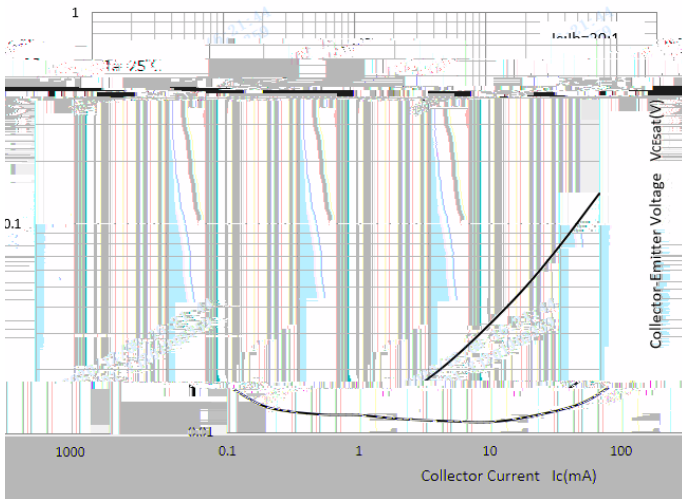
Item	Symbol	Unit	Conditions	Min	Max
Collector-Emitter Voltage	V_{CEO}	V	$I_C = 1\text{mA}$, $I_B = 0$	20	
Collector-Base Voltage	V_{CBO}	V	$I_C = 100\mu\text{A}$, $I_E = 0$	30	
Emitter-Base Voltage	V_{EBO}	V	$I_E = 100\mu\text{A}$, $I_C = 0$	5	
Collector-base Cutoff Current	I_{CBO}	nA	$V_{CB} = 30\text{V}$		100
Base-emitter Cutoff Current	I_{EBO}	nA	$V_{EB} = 4\text{V}$		100
DC Current Gain	h_{FE}		$I_C = 100\text{mA}$, $V_{CE} = 2\text{V}$	350	
			$I_C = 500\text{mA}$, $V_{CE} = 2\text{V}$	300	
			$I_C = 1\text{A}$, $V_{CE} = 2\text{V}$	280	
Collector-Emitter Saturation Voltage	$V_{CE(sat)1}$	mV	$I_C = 100\text{mA}$, $I_B = 1\text{mA}$		80
	$V_{CE(sat)2}$	mV	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		110
	$V_{CE(sat)3}$	mV	$I_C = 750\text{mA}$, $I_B = 15\text{mA}$		200
	$V_{CE(sat)4}$	mV	$I_C = 1\text{A}$, $I_B = 50\text{mA}$		250
Equivalent On-Resistance	$R_{CE(sat)}$	m Ω	$I_C = 500\text{mA}$, $I_B = 50\text{mA}$		220
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	V	$I_C = 1\text{A}$, $I_B = 100\text{mA}$		1.1
Base-Emitter Turn-On Voltage	$V_{BE(on)}$	V	$I_C = 100\text{mA}$, $V_{CE} = 2\text{V}$		0.75
Transition frequency	f_T	MHz	$I_C = 100\text{mA}$, $V_{CE} = 10\text{V}$, $f = 100\text{MHz}$	100	
Collector Capacitance	C_{ob}	pF	$V_{CB} = 10\text{V}$, $I_E = 0$, $f = 1\text{MHz}$		20

Characteristics (Typical)

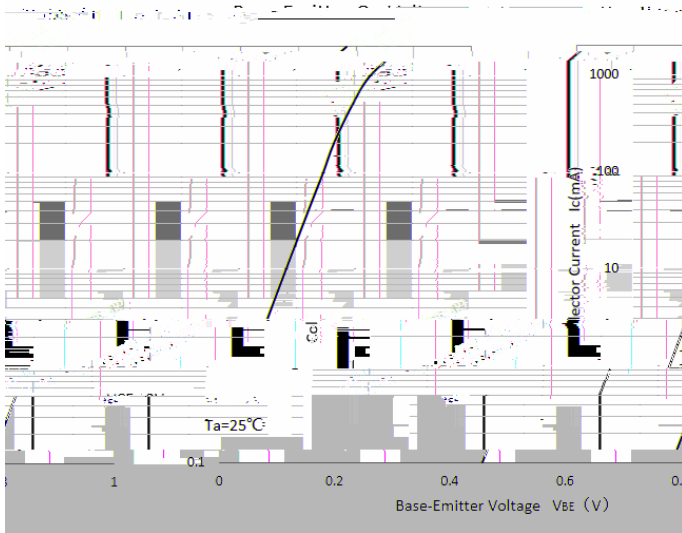
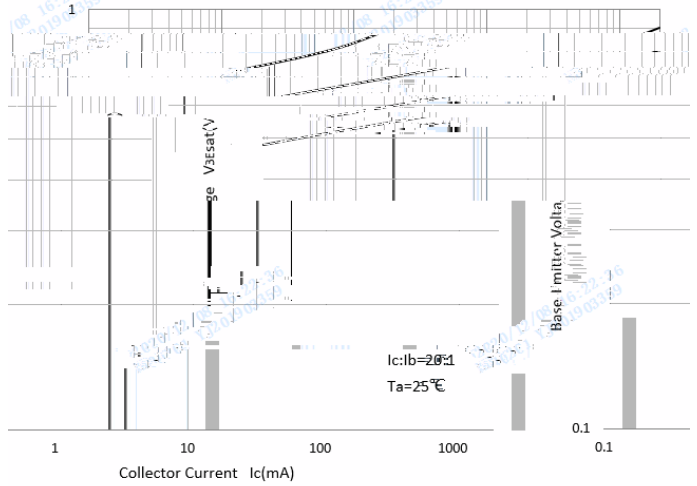




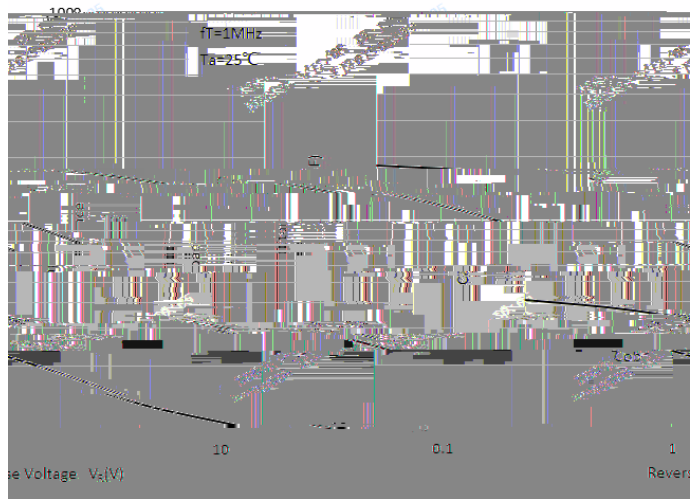
Collector-Emitter Saturation Voltage



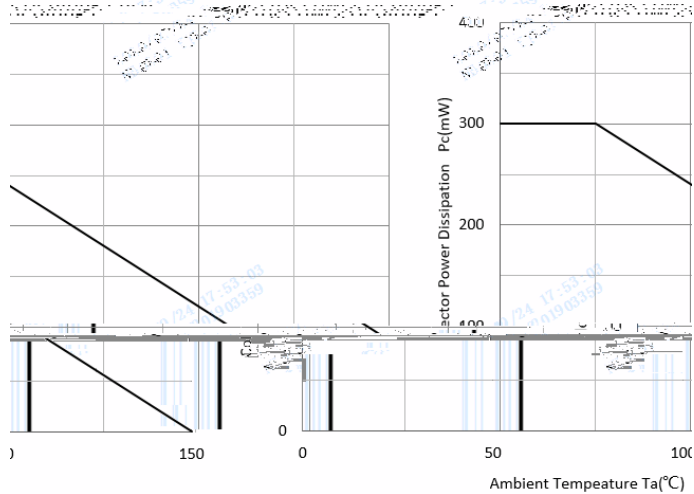
Base-Emitter Saturation Voltage



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



Collector Power Derating Curve



VSOT-23 Package Outline Dimensions

VSOT-23 Soldering Footprint



Disclaimer

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