

PNP Transistor AEC-Q101

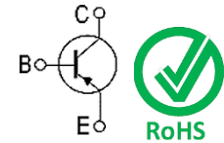
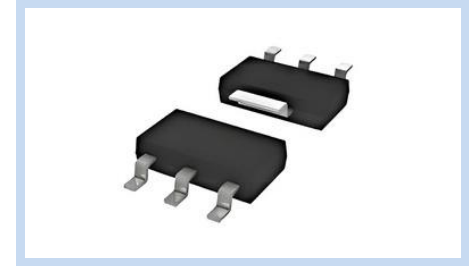
45~80V 1.5W SOT-223

BCP5x-1x-A

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FEATURE

- Low Collector-Emitter Saturation Voltage
- Capable of 1.5W Power Dissipation
- Excellent DC Current Gain Characteristics
- Application: Medium Voltage Load Switch Transistor, Output Stage for Audio Amplifiers Circuits, Automotive Post-Voltage Regulation
- AEC-Q101 Qualified



MECHANICAL DATA

- Case: SOT-223 Package
- Terminals: Solderable per MIL-STD-750, Method 2026

MAXIMUM RATINGS

Parameter	Symbol	BCP-51	BCP-52	BCP-53	Unit
Collector-Base Voltage	V_{CBO}	-45	-60	-100	V
Collector-Emitter Voltage	V_{CEO}	-45	-60	-80	V
Emitter-Base Voltage	V_{EBO}	-5			V
Collector Current	I_C	-1			A
Peak Collector Current	I_{CM}	-2			A
Base Current	I_B	-100			mA
Peak Base Current	I_{BM}	-200			mA
Power Dissipation	P_{tot}	1.5			W
Typical Thermal Resistance-Junction to Ambient	$R_{\theta JA}$	94			°C/W
Operation Junction and Storage Temperature Range	T_J, T_{stg}	-55 ~ +150			°C

ELECTRICAL CHARACTERISTICS

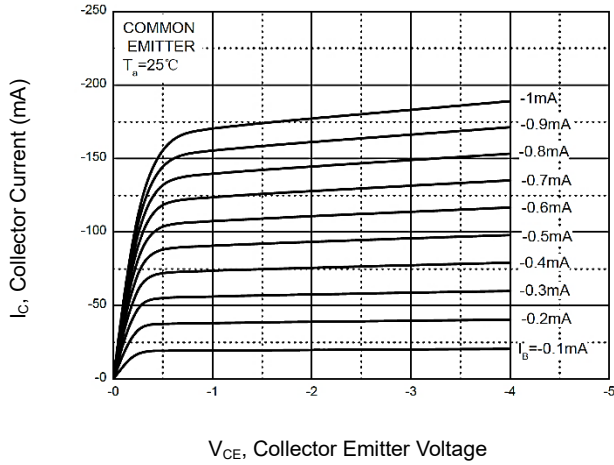
Parameter- ON Characteristic		Conditions	Symbol	Min.	Typ.	Max.	Unit
DC Current Gain	-	V _{CE} =-2V, I _C =-5mA	h _{FE}	25	-	-	-
		V _{CE} =-2V, I _C =-500mA		25	-	-	
	BCP5x-10-A	V _{CE} =-2V, I _C =-150mA		63	-	160	
	BCP5x-16-A			100	-	250	
Collector-Emitter Saturation Voltage		I _C =-500mA, I _B =-50mA	V _{CE(SAT)}	-	-	-500	mV
Base-Emitter Saturation Voltage		V _{CE} =-2V, IC=-0.5A	V _{BE}	-	-	-1.0	V
Parameter- OFF Characteristics		Conditions	Symbol	Min.	Typ.	Max.	Unit
Collector-Base Breakdown Voltage	BCP51-1x-A	I _C =-100μA, I _E =0	V _{(BR)CBO}	-45	-	-	V
	BCP52-1x-A			-60	-	-	
	BCP53-1x-A			-100	-	-	
Collector-Emitter Breakdown Voltage	BCP51-1x-A	I _C =-10mA, I _B =0	V _{(BR)CEO}	-45	-	-	V
	BCP52-1x-A			-60	-	-	
	BCP53-1x-A			-80	-	-	
Emitter-Base Breakdown Voltage		I _E =-10μA, I _C =0	V _{(BR)EBO}	-5	-	-	V
Collector Base Cut-Off Current		V _{CB} =-30V, I _E =0	I _{CBO}	-	-	-100	nA
Emitter Base Cut-Off Current		V _{EB} =-6V, I _C =0	I _{EBO}	-	-	-100	nA
Parameter-Small Signal		Conditions	Symbol	Min.	Typ.	Max.	Unit
Current-Gain – Bandwidth Product		V _{CE} =-10V, I _C =-50mA, f=1MHz	f _T	100	-	-	MHz

Note:

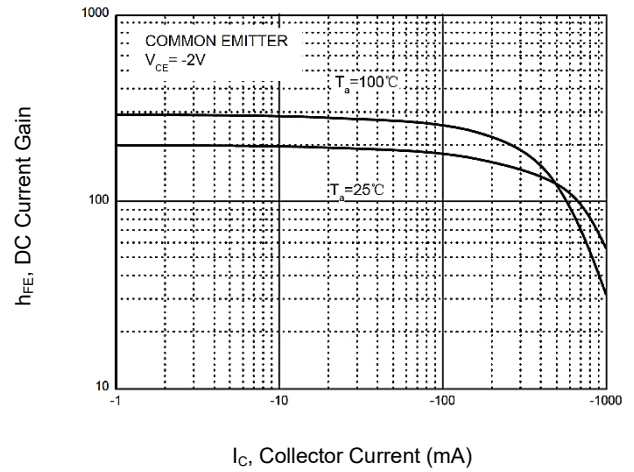
1. $T_A=25^{\circ}C$ unless otherwise noted

CHARACTERISTIC CURVES

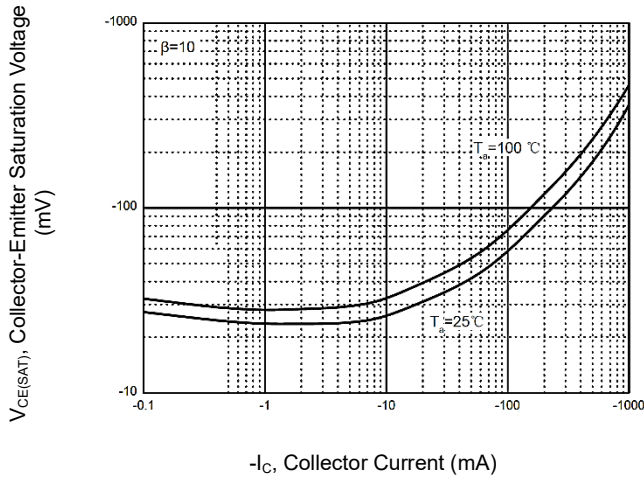
Output Characteristic



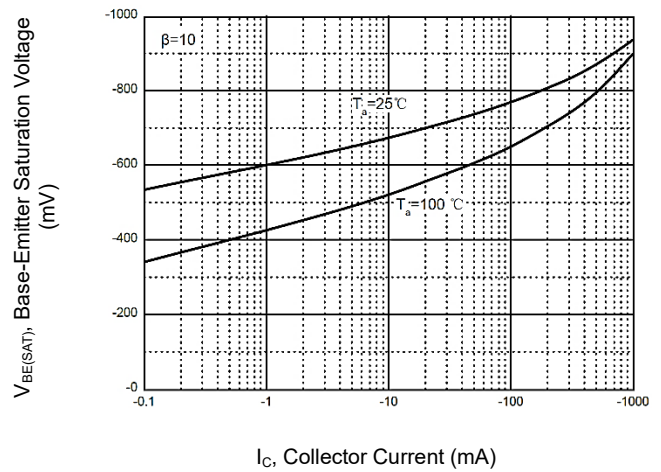
DC Current Gain



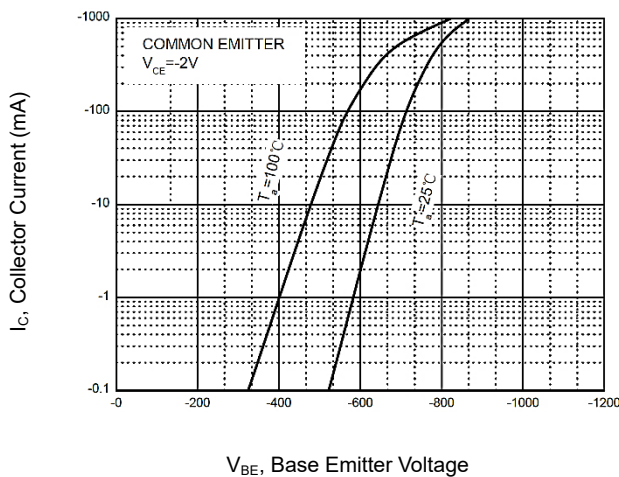
Collector-Emitter Saturation Voltage



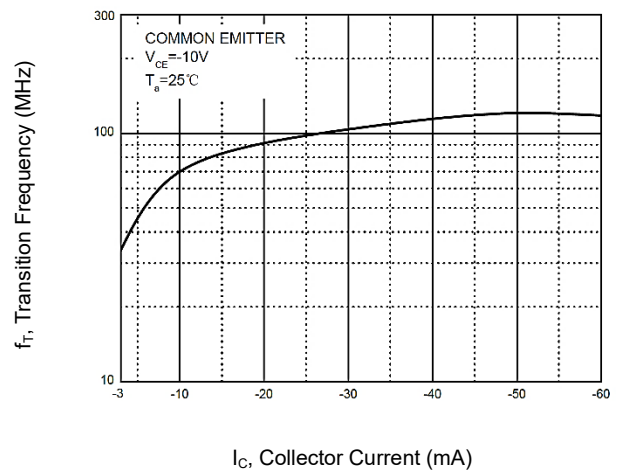
Base-Emitter Saturation Voltage



Base Emitter On Voltage



Transition Frequency



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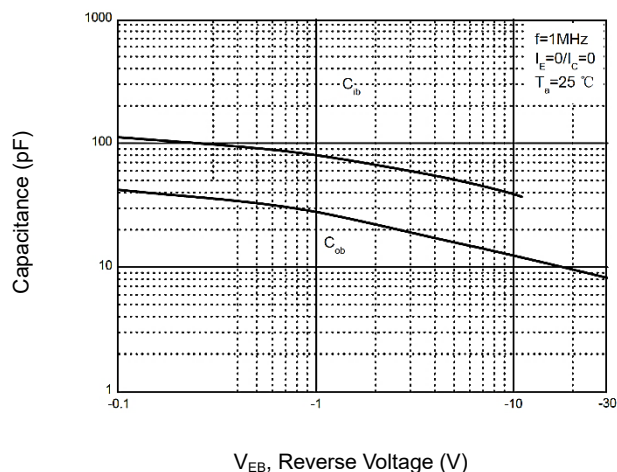
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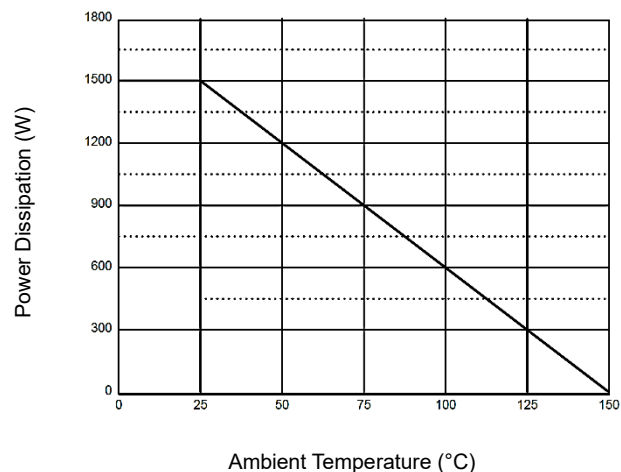
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CHARACTERISTIC CURVES

Typical Capacitance



Power Derating Curves



DIMENSIONS

Item	Min (mm)	Max (mm)
A	1.50	1.80
A1	0.02	0.10
b	0.66	0.84
b1	2.90	3.10
C	0.23	0.35
D	6.30	6.70
e	4.60	
e1	2.30	
E	3.30	3.70
E1	6.70	7.30
L	0.75	--
X	0.75	
X1	3.40	
Y	1.60	
Y1	1.60	
Y2	7.70	
c	2.30	
c1	6.15	

