

General Purpose Transistor

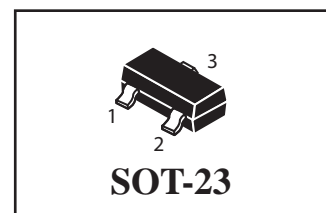
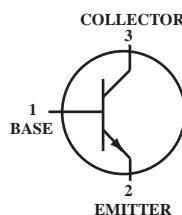
NPN Silicon

 **Lead(Pb)-Free**

*Moisture Sensitivity Level: 1

*ESD Rating - Human Body Model:>4000V

-Machine Model:>400V



Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

Rating	Symbol	Value	Unit
Collector-Emitter Voltage	V_{CEO}	45	Vdc
Collector-Base Voltage	V_{CBO}	50	Vdc
Emitter-Base Voltage	V_{EBO}	6.0	Vdc
Collector Current-Continuous	I_C	100	mAdc

Thermal Characteristics

Characteristics	Symbol	Max	Unit
Total Device Dissipation FR-5 Board (Note 1.) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	225 1.8	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 1.)	$R_{\theta JA}$	556	$^\circ\text{C}/\text{W}$
Total Device Dissipation Alumina Substrate, (Note 2.) $T_A=25^\circ\text{C}$ Derate above 25°C	P_D	300 2.4	mW mW/ $^\circ\text{C}$
Thermal Resistance, Junction to Ambient (Note 2.)	$R_{\theta JA}$	417	$^\circ\text{C}/\text{W}$
Junction and Storage, Temperature Range	T_J, T_{stg}	-55 to +150	$^\circ\text{C}$

Device Marking

BC5347B=1F

1.FR-5=1.0 x 0.75 x 0.062 in.

2.Alumina=0.4 x 0.3 x 0.024 in. 99.5% alumina

Electrical Characteristics (TA=25°C Unless Otherwise noted)

Characteristics	Symbol	Min	Typ	Max	Unit
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Off Characteristics

Collector-Emitter Breakdown Voltage (IC= 10mA)	V(BR)CEO	45	-	-	V
Collector-Emitter Breakdown Voltage (IC=10 μA, VEB=0)	V(BR)CES	50	-	-	V
Collector-Base Breakdown Voltage (IC=10 μA)	V(BR)CBO	50	-	-	V
Emitter-Base Breakdown Voltage (IE=1.0 μA)	V(BR)EBO	6.0	-	-	V
Collector Cutoff Current (VCB=30V) (VCB=30V, TA=150°C)	ICBO	-	-	15 5.0	nA mA

On Characteristics

DC Current Gain (IC= 10μA, VCE=5.0V) (IC= 2.0mA, VCE=5.0V)	hFE	- 200	150 290	- 450	-
Collector-Emitter Saturation Voltage (IC= 10mA, IB=0.5mA) (IC= 100mA, IB=5.0mA)	VCE(sat)	- -	- -	0.25 0.6	V
Base-Emitter Saturation Voltage (IC= 10mA, IB=0.5mA) (IC= 100mA, IB=5.0mA)	VBE(sat)	- -	-0.7 -0.9	- -	V
Base-Emitter On Voltage (IC= 2.0mA, VCE=5.0V) (IC= 10mA, VCE=5.0V)	VBE(on)	580 -	660 -	700 770	V

Small-signal Characteristics

Current-Gain-Bandwidth Product (IC= 10mA, VCE= 5.0Vdc, f=100MHz)	fT	100	-	-	MHz
Output Capacitance (VCB= 10V, f=1.0MHz)	Cobo	-	-	4.5	pF
Noise Figure (IC= 0.2mA, VCE= 5.0Vdc, Rs=2.0 kΩ, f=1.0 kHz, BW=200Hz)	NF	-	-	10	dB

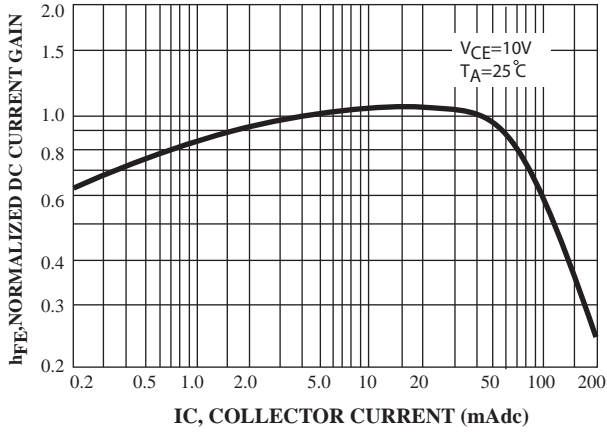


FIG.1 Normalized DC Current Gain

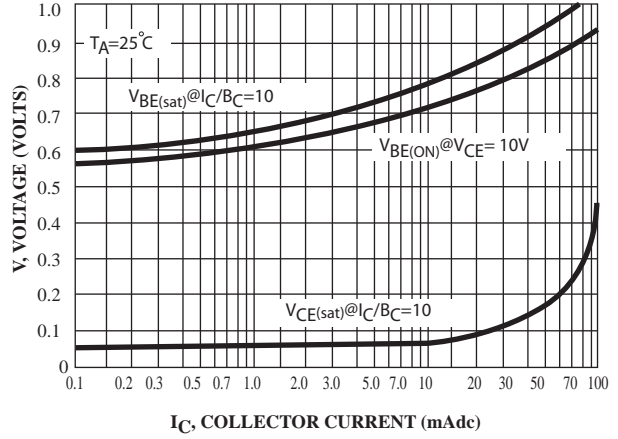


FIG.2 "Saturation" And "On" Voltage

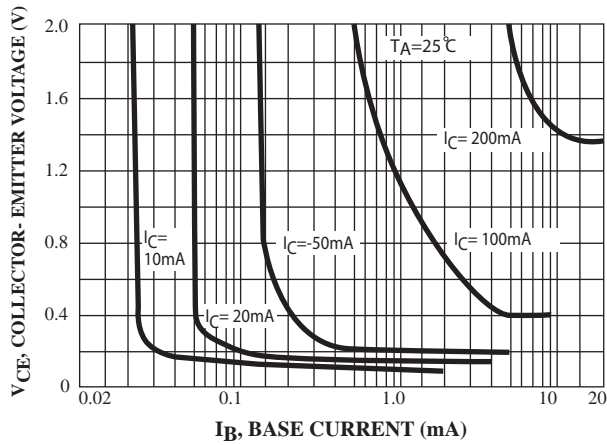


FIG.3 Collector Saturation Region

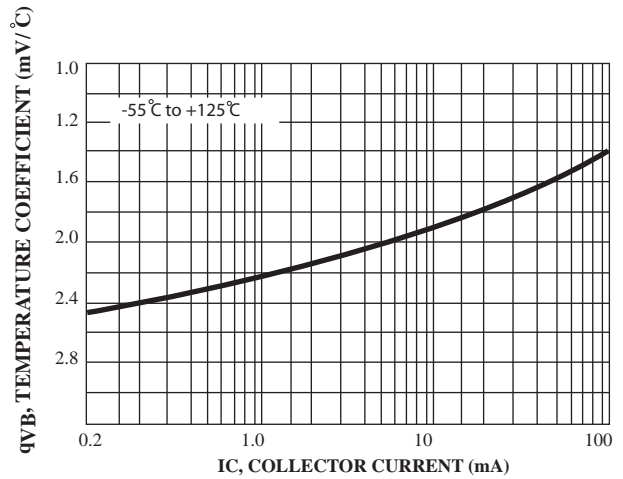


FIG.4 Base-Emitter Temperature Coefficient

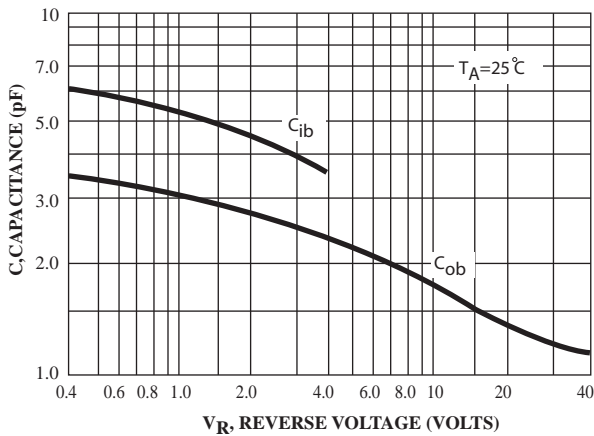


FIG.5 Capacitances

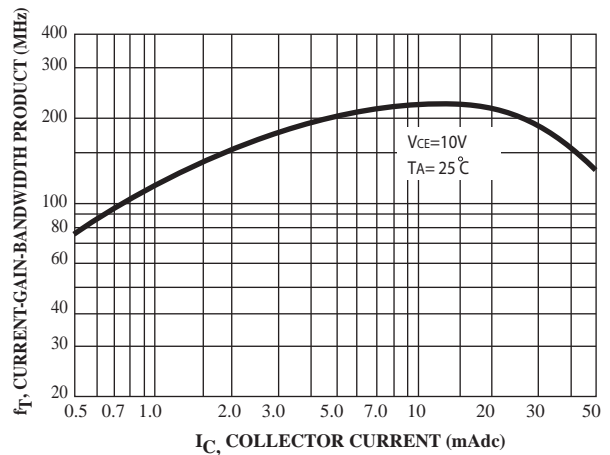
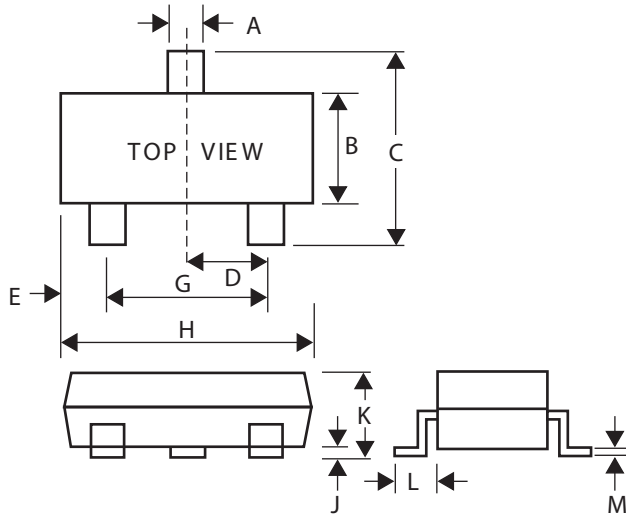


FIG.6 Current-Gain- Bandwidth Product

SOT-23 Package Outline Dimensions

Unit:mm



Dim	Min	Max
A	0.35	0.51
B	1.19	1.40
C	2.10	3.00
D	0.85	1.05
E	0.46	1.00
G	1.70	2.10
H	2.70	3.10
J	0.01	0.13
K	0.89	1.10
L	0.30	0.61
M	0.076	0.25