

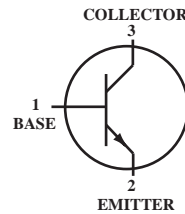
General Purpose Transistor

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 ($I_C = 10\text{mA}$)	V(BR)CEO	45	-	-	V
Collector-Emitter Breakdown Voltage ($I_C = 10\ \mu\text{A}$, $V_{EB} = 0$)	V(BR)CES	50	-	-	V
Collector-Base Breakdown Voltage ($I_C = 10\ \mu\text{A}$)	V(BR)CBO	50	-	-	V
Emitter-Base Breakdown Voltage ($I_E = 1.0\ \mu\text{A}$)	V(BR)EBO	6.0	-	-	V
Collector Cutoff Current ($V_{CB} = 30\text{V}$) ($V_{CB} = 30\text{V}$, $T_A = 150^\circ\text{C}$)	ICBO	-	-	15 5.0	nA mA

On Characteristics

DC Current Gain ($I_C = 10\ \mu\text{A}$, $V_{CE} = 5.0\text{V}$) ($I_C = 2.0\text{mA}$, $V_{CE} = 5.0\text{V}$)	hFE	- 200	150 290	- 450	-
Collector-Emitter Saturation Voltage ($I_C = 10\text{mA}$, $I_B = 0.5\text{mA}$) ($I_C = 100\text{mA}$, $I_B = 5.0\text{mA}$)	VCE(sat)	- -	- -	0.25 0.6	V
Base-Emitter Saturation Voltage ($I_C = 10\text{mA}$, $I_B = 0.5\text{mA}$) ($I_C = 100\text{mA}$, $I_B = 5.0\text{mA}$)	VBE(sat)	- -	-0.7 -0.9	- -	V
Base-Emitter On Voltage ($I_C = 2.0\text{mA}$, $V_{CE} = 5.0\text{V}$) ($I_C = 10\text{mA}$, $V_{CE} = 5.0\text{V}$)	VBE(on)	580 -	660 -	700 770	V

Small-signal Characteristics

Current-Gain-Bandwidth Product ($I_C = 10\text{mA}$, $V_{CE} = 5.0\text{Vdc}$, $f = 100\text{MHz}$)	f_T	100	-	-	MHz
Output Capacitance ($V_{CB} = 10\text{V}$, $f = 1.0\text{MHz}$)	C_{obo}	-	-	4.5	pF
Noise Figure ($I_C = 0.2\text{mA}$, $V_{CE} = 5.0\text{Vdc}$, $R_s = 2.0\ \text{k}\Omega$, $f = 1.0\ \text{kHz}$, $BW = 200\text{Hz}$)	NF	-	-	10	dB

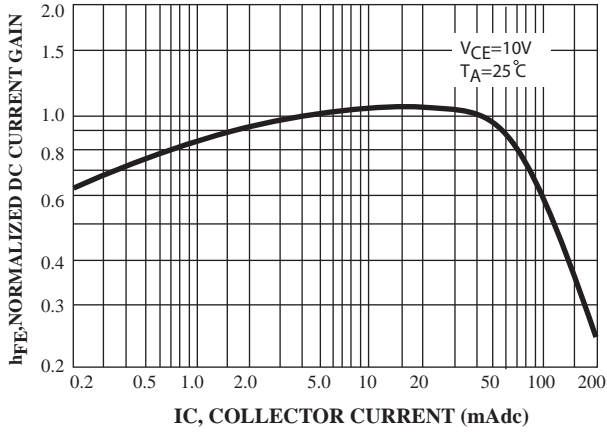


FIG.1 Normalized DC Current Gain

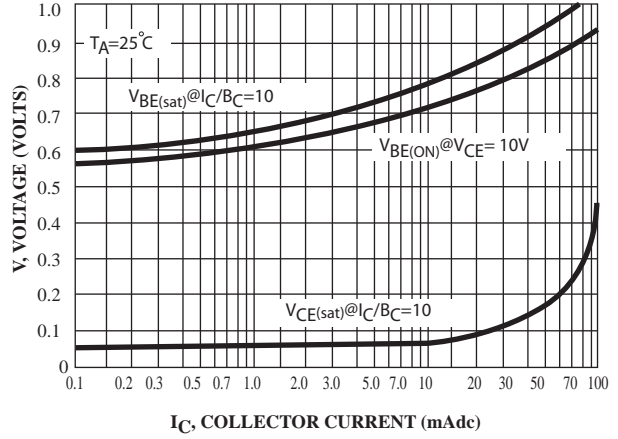


FIG.2 "Saturation" And "On" Voltage

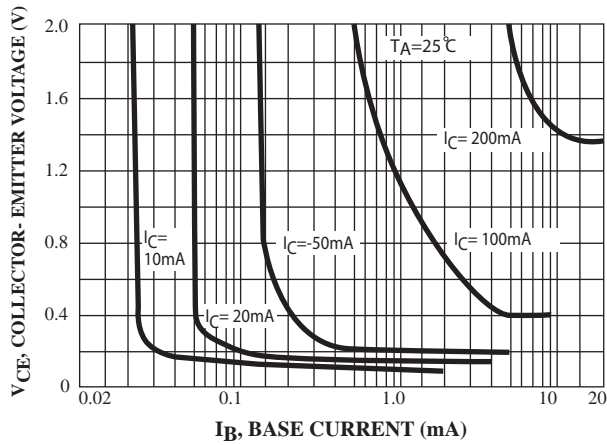


FIG.3 Collector Saturation Region

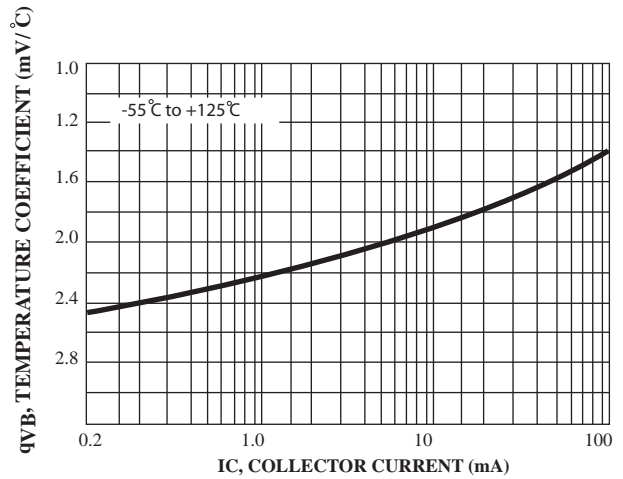


FIG.4 Base-Emitter Temperature Coefficient

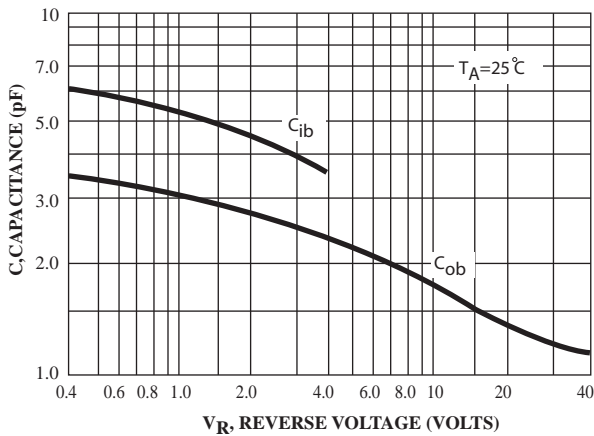


FIG.5 Capacitances

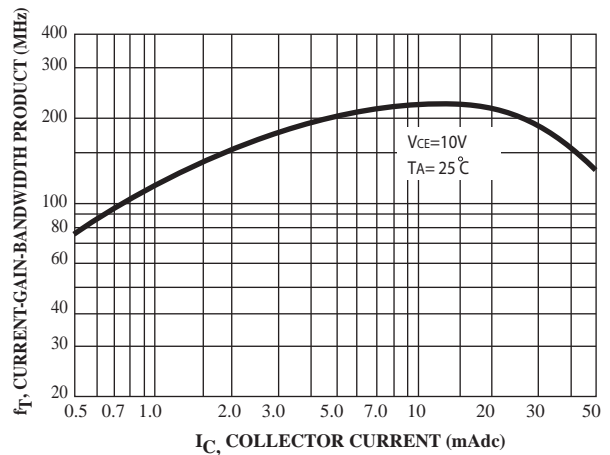
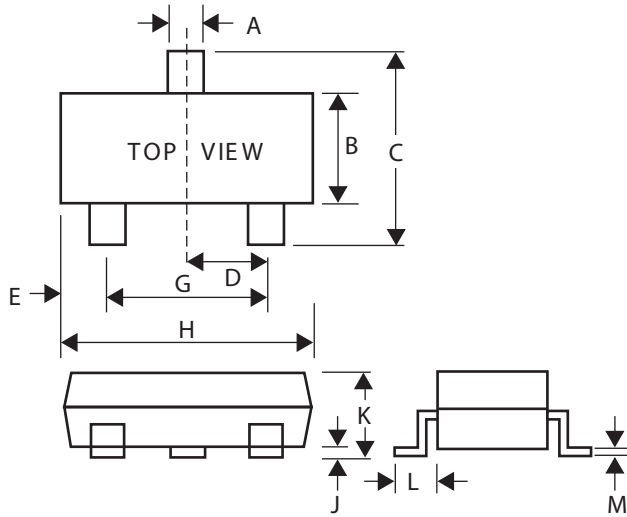


FIG.6 Current-Gain- Bandwidth Product

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