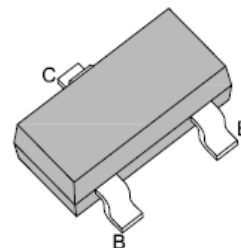


SMD General Purpose Transistor (NPN)

Features

- NPN Silicon Epitaxial Planar Transistor for Switching and Amplifier Applications



Mechanical Data

Case:	SOT-23, Plastic Package
Terminals:	Solderable per MIL-STD-202G, Method 208
Weight:	0.008 gram

SOT-23



Marking Information

	BC846A	BC846B	BC847A	BC847B	BC847C	BC848A	BC848B	BC848C
Marking Code	1A	1B	1E	1F	1G	1J	1K	1L

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

Symbol	Description	BC846	BC847	BC848	Unit	Conditions
V_{CB0}	Collector-Base Voltage	80	50	30	V	
V_{CEO}	Collector-Emitter Voltage	65	45	30	V	
V_{EB0}	Emitter-Base Voltage	6	6	5	V	
I_c	Collector Current	100			mA	
P_{tot}	Power Dissipation	330			mW	Note 1
R_{θJA}	Thermal Resistance, Junction to Ambient	375			° C/W	Note 1
T_J	Junction Temperature	-55 to +150			° C	
T_{STG}	Storage Temperature Range	-55 to +150			° C	

Note: 1. Transistor mounted on FR-4 board 8cm².

SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Electrical Characteristics ($T_{Ambient}=25^{\circ}\text{C}$ unless noted otherwise)

Symbol	Description		Min.	Typ.	Max.	Unit	Conditions
ICBO	Collector-Base Cut-off Current		-	-	15	nA	$V_{CB}=30\text{V}, I_E=0$
			-	-	5.0	μA	$V_{CB}=30\text{V}, I_E=0, T_J=150^{\circ}\text{C}$
hFE	D.C. Current Gain	BC846/7/8, Suffix 'A'	-	90	-		$V_{CE}=5\text{V}, I_C=10\mu\text{A}$
		BC846/7/8, Suffix 'B'	-	150	-		
		BC847/8, Suffix 'C'	-	270	-		
		BC846/7/8, Suffix 'A'	110	180	220		$V_{CE}=5\text{V}, I_C=2\text{mA}$
		BC846/7/8, Suffix 'B'	200	290	450		
		BC847/8, Suffix 'C'	420	520	800		
VCE(sat)	Collector-Emitter Saturation Voltage		-	-	0.25	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$
			-	-	0.6		$I_C=100\text{mA}, I_B=5\text{mA}$
VBE(sat)	Base-Emitter Saturation Voltage		-	0.7	-	V	$I_C=10\text{mA}, I_B=0.5\text{mA}$
			-	0.9	-		$I_C=100\text{mA}, I_B=5\text{mA}$
VBE(on)	Base-Emitter On Voltage		0.58	0.66	0.7	V	$V_{CE}=5\text{V}, I_C=2\text{mA}$
			-	-	0.77		$V_{CE}=5\text{V}, I_C=10\text{mA}$
fT	Current Gain-Bandwidth Product		100	-	-	MHz	$V_{CE}=5\text{V}, I_C=10\text{mA}, f=100\text{MHz}$
Cob	Collector Output Capacitance		-	-	4.5	pF	$V_{CB}=10\text{V}, I_E=0, f=1\text{MHz}$
NF	Noise Figure		-	-	10	dB	$V_{CE}=5\text{V}, I_C=0.2\text{mA}, R_G=2\text{K}\Omega, f=1\text{KHz}$

SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Typical Characteristics Curves

1. BC846A, BC847A, BC848A

Fig.1-Collector Cut-off Current vs. Junction Temperature

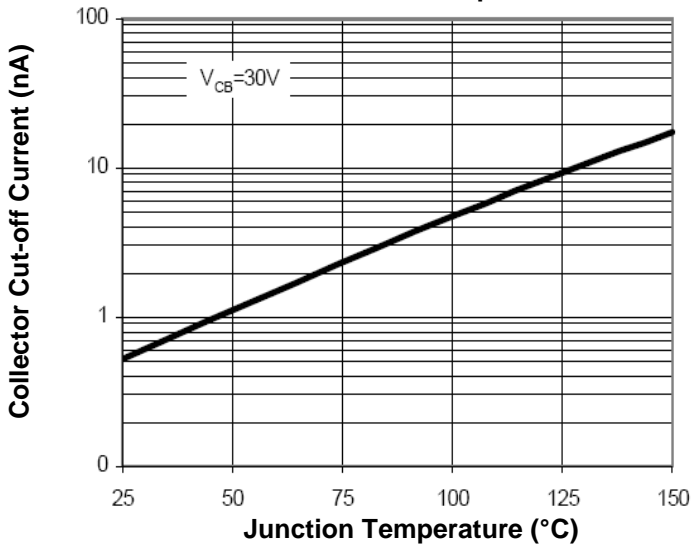


Fig.2- DC Current Gain vs. Collector Current

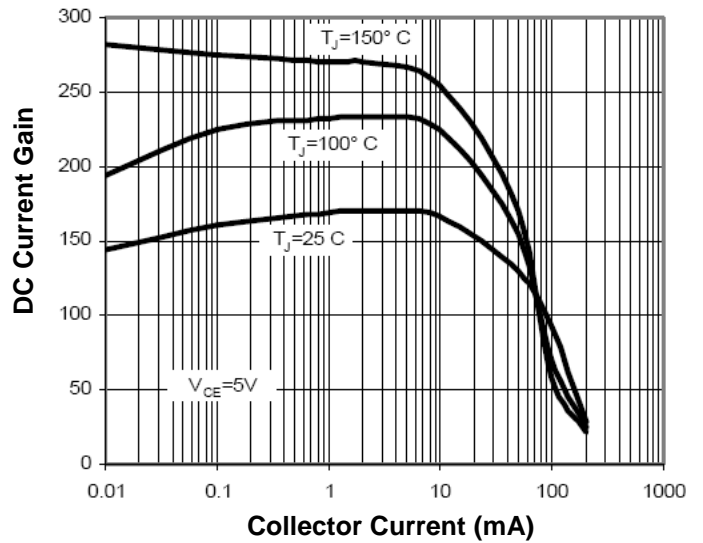


Fig.3-Base-Emitter On Voltage vs. Collector Current

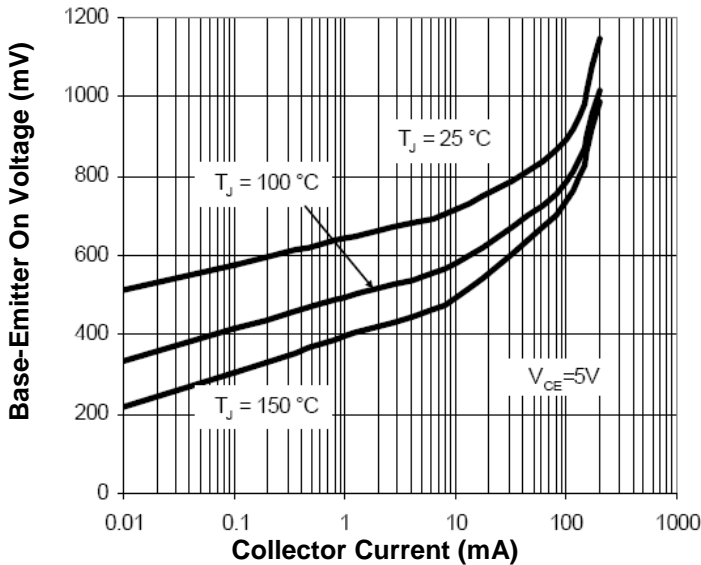
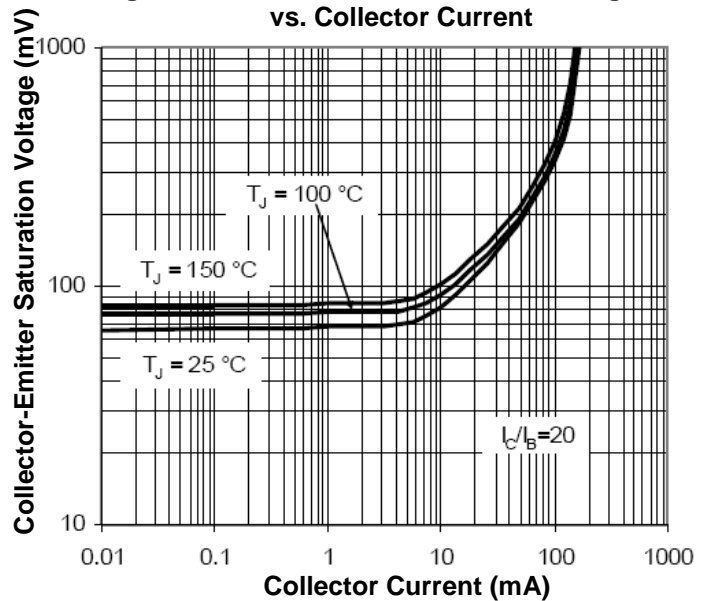


Fig.4- Collector-Emitter Saturation Voltage vs. Collector Current



SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Fig.5- Base-Emitter Saturation Voltage vs. Collector Current

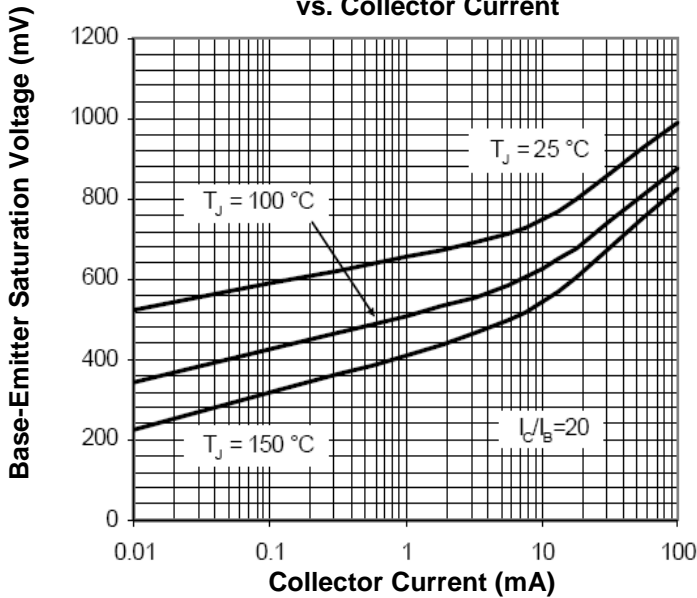
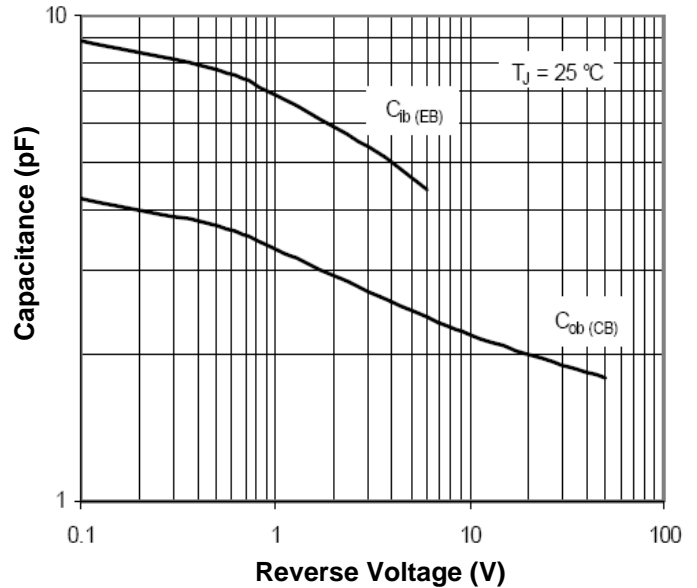


Fig.6- Typical Capacitances vs. Reverse Voltage



2. BC846B, BC847B, BC848B

Fig.1-Collector Cut-off Current vs. Junction Temperature

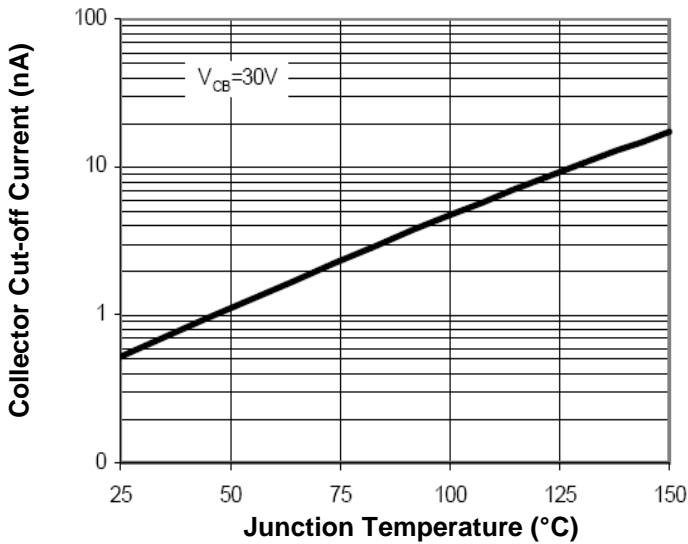
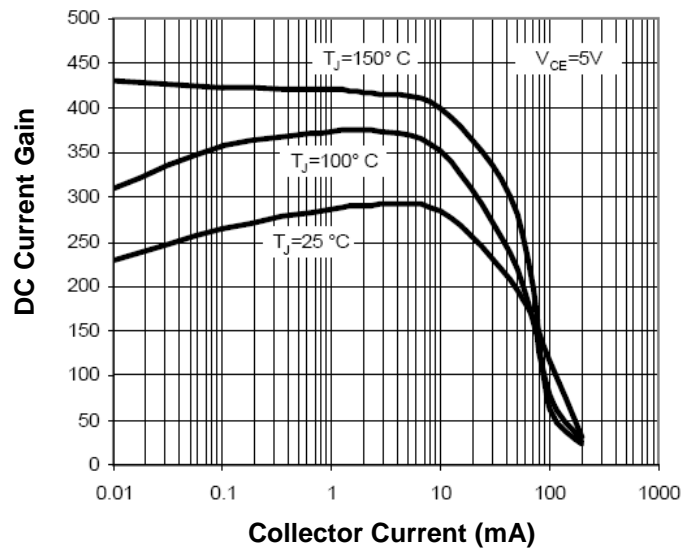


Fig.2- DC Current Gain vs. Collector Current



SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Fig.3-Base-Emitter On Voltage vs. Collector Current

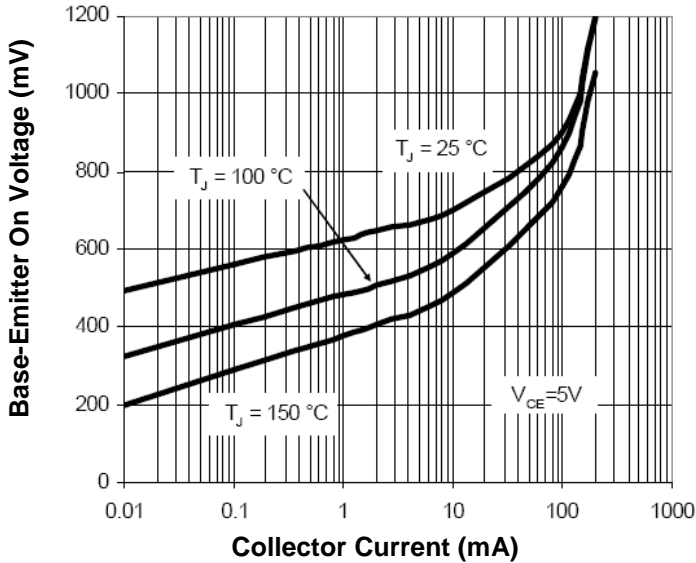


Fig.4- Collector-Emitter Saturation Voltage vs. Collector Current

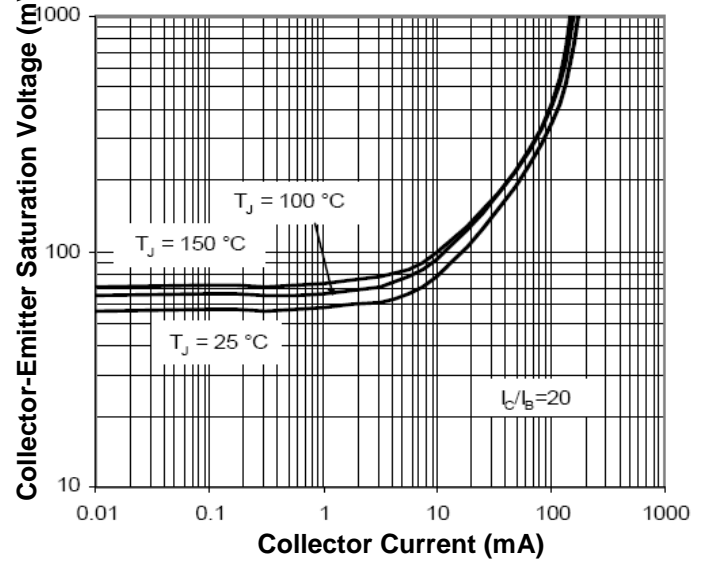


Fig.5- Base-Emitter Saturation Voltage vs. Collector Current

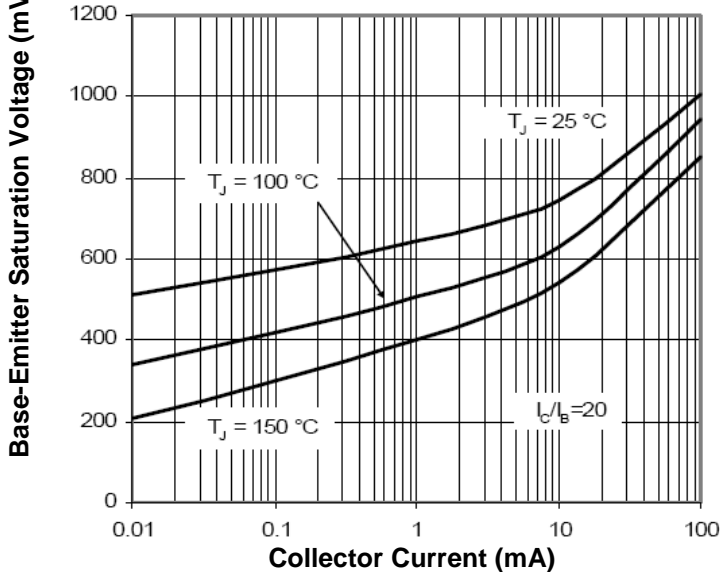
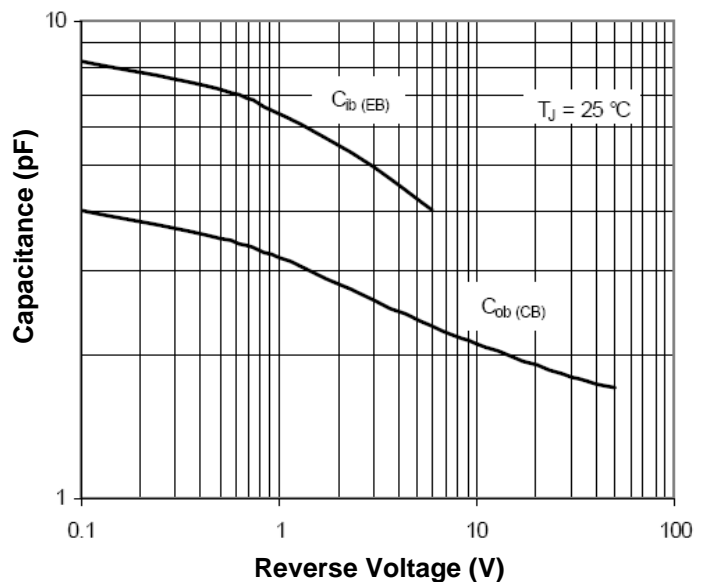


Fig.6- Typical Capacitances vs. Reverse Voltage



SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

3. BC847C, BC848C

Fig.1-Collector Cut-off Current vs. Junction Temperature

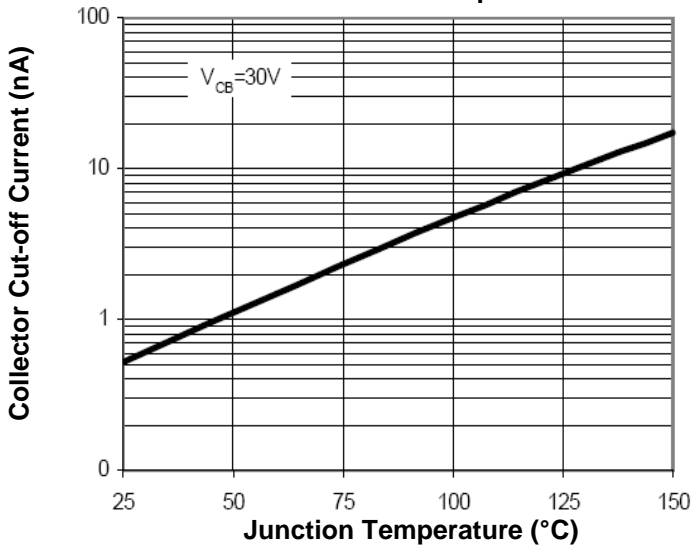


Fig.2- DC Current Gain vs. Collector Current

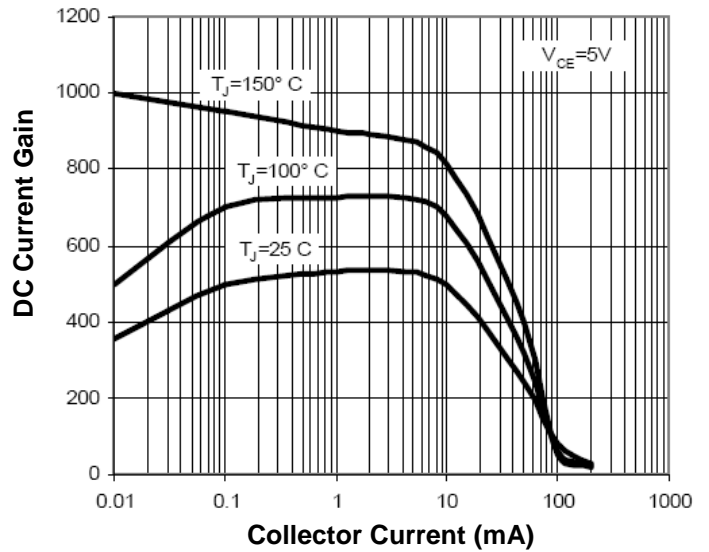


Fig.3-Base-Emitter On Voltage vs. Collector Current

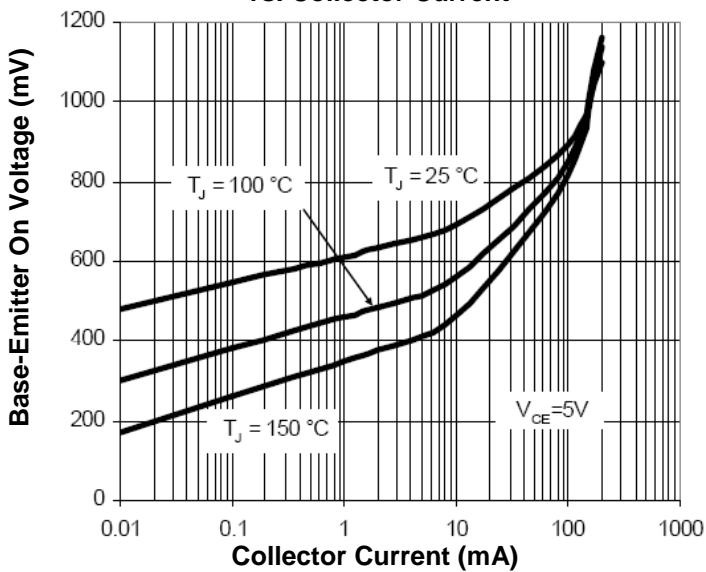
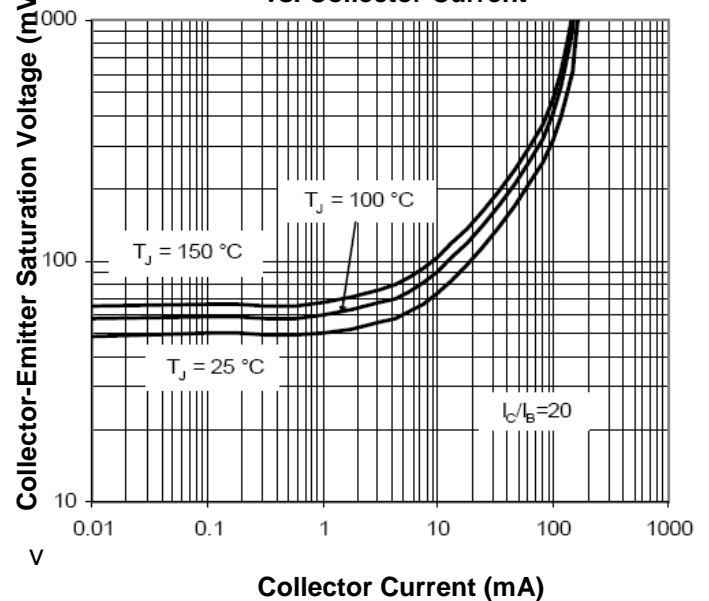


Fig.4- Collector-Emitter Saturation Voltage vs. Collector Current



SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

Fig.5- Base-Emitter Saturation Voltage vs. Collector Current

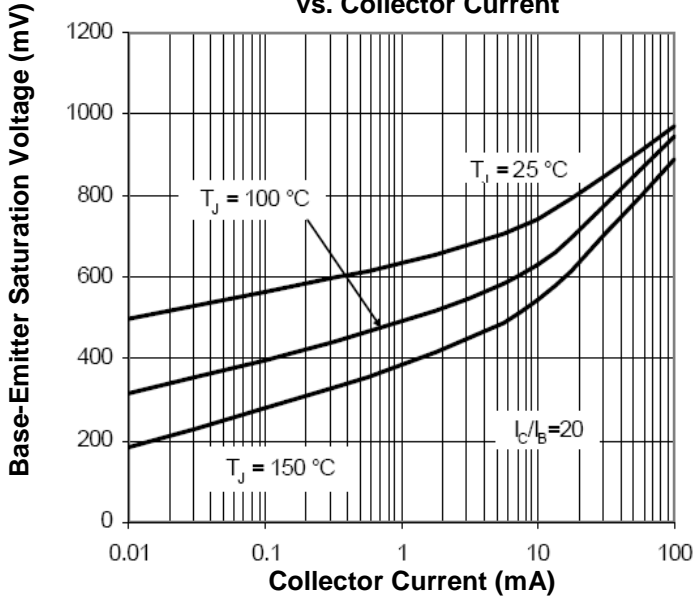
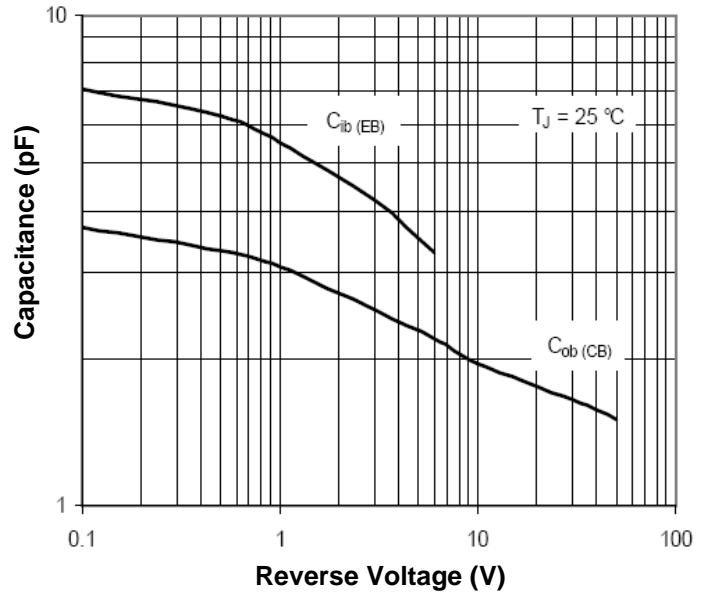


Fig.6- Typical Capacitances vs. Reverse Voltage

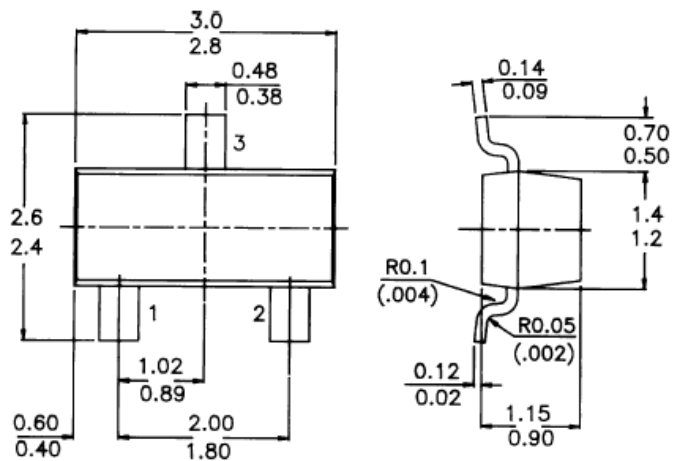
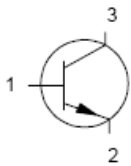


Dimensions in mm

SOT-23

Pin configuration

- 1 = BASE
- 2 = EMITTER
- 3 = COLLECTOR



SMD General Purpose Transistor (NPN)

BC846/BC847/BC848

How to contact us

USA HEADQUARTERS

28040 WEST HARRISON PARKWAY, VALENCIA, CA 91355-4162

Tel: (800)-TAITRON (800)-824-8766 (661)-257-6060

Fax: (800)-TAITFAX (800)-824-8329 (661)-257-6415

Email: taitron@taitroncomponents.com

Http://www.taitroncomponents.com

TAITRON COMPONENTS INCORPORATED TAIWAN BRANCH

6F., NO.190, SEC. 2, ZHONGXING RD., XINDIAN DIST., NEW TAIPEI CITY 23146, TAIWAN R.O.C.

Tel: 886-2-2913-6238

Fax: 886-2-2913-6239

TAITRON COMPONENT TECHNOLOG SHANGHAI CORPORATION

SUITE 1503, METROBANK PLAZA, 1160 WEST YAN'AN ROAD, SHANGHAI, 200052, CHINA

Tel: +86-21-5424-9942

Fax: +86-21-2302-5027