



BC846-AU,BC847-AU,BC848-AU,BC849-AU,BC850-AU SERIES

NPN GENERAL PURPOSE TRANSISTORS

VOLTAGE 30/45/65 Volts **POWER** 330 mWatts

SOT-23

Unit : inch(mm)

FEATURES

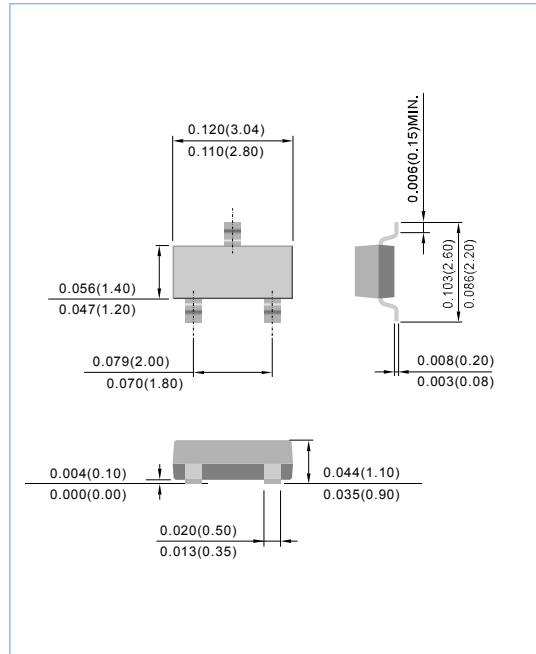
- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current IC = 100mA
- Lead free in comply with EU RoHS 2002/95/EC directives.
- Green molding compound as per IEC61249 Std. . (Halogen Free)

MECHANICAL DATA

Case: SOT-23, Plastic

Terminals: Solderable per MIL-STD-750, Method 2026

Approx. Weight: 0.008 gram



Device Marking:				
BC846A-AU=46A	BC847A-AU=47A	BC848A-AU=48A		
BC846B-AU=46B	BC847B-AU=47B	BC848B-AU=48B	BC849B-AU=49B	BC850B-AU=50B
	BC847C-AU=47C	BC848C-AU=48C	BC849C-AU=49C	BC850C-AU=50C

ABSOLUTE RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	V_{CE0}	65 45 30	V
Collector - Base Voltage	V_{CB0}	80 50 30	V
Emitter - Base Voltage	V_{EB0}	6.0 6.0 5.0	V
Collector Current - Continuous	I_C	100	mA

THERMAL CHARACTERISTICS

PARAMETER	Symbol	Value	Units
Max Power Dissipation (Note 1)	P_{TOT}	330	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	375	$^{\circ}C/W$
Operating Junction Temperature and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^{\circ}C$

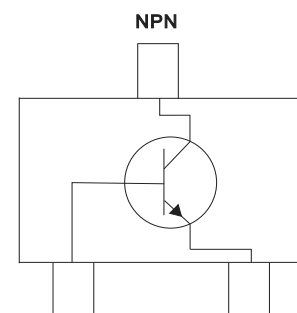
Note 1: Transistor mounted on FR-4 board 8 cm².



BC846!5I ,BC847!5I ,BC848!5I ,BC849!5I ,BC850!5I SERIES

ELECTRICAL CHARACTERISTICS

PARAMETER		Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	BC846A-AU/B-AU BC847A-AU/B-AU/C-AU,BC850B-AU/C-AU BC848A-AU/B-AU/C-AU,BC849B-AU/C-AU	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	65 45 30	-	-	V
Collector - Base Breakdown Voltage	BC846A-AU/B-AU BC847A-AU/B-AU/C-AU,BC850B-AU/C-AU BC848A-AU/B-AU/C-AU,BC849B-AU/C-AU	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	80 50 30	-	-	V
Emitter - Base Breakdown Voltage	BC846A-AU/B-AU BC847A-AU/B-AU/C-AU,BC850B-AU/C-AU BC848A-AU/B-AU/C-AU,BC849B-AU/C-AU	$V_{(BR)EBO}$	$I_E=10\mu A, I_C=0$	6.0 6.0 5.0	-	-	V
Emitter-Base Cutoff Current		I_{EBO}	$V_{EB}=5$	-	-	100	nA
Collector-Base Cutoff Current		I_{CBO}	$V_{CB}=30V, I_E=0$ $V_{CB}=30V, I_E=0, T_J=150^{\circ}C$	-	-	15 5.0	nA uA
DC Current Gain	BC846-BC848 Suffix "A-AU" BC846-BC850 Suffix "B-AU" BC847-BC850 Suffix "C-AU"	h_{FE}	$I_C=10\mu A, V_{CE}=5V$	-	90 150 270	-	-
DC Current Gain	BC846-BC848 Suffix "A-AU" BC846-BC850 Suffix "B-AU" BC847-BC850 Suffix "C-AU"	h_{FE}	$I_C=2.0mA, V_{CE}=5V$	110 200 420	180 290 520	220 450 800	-
Collector - Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$	-	-	0.25 0.6	V
Base - Emitter Saturation Voltage		$V_{CE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$	-	0.7 0.9	-	V
Base - Emitter Voltage		$V_{CE(SAT)}$	$I_C=2mA, V_{CE}=5.0V$ $I_C=10mA, V_{CE}=5.0V$	0.58 -	0.66 -	0.70 0.77	V
Collector - Base Capacitance		C_{CBO}	$V_{CB}=10V, I_E=0, f=1MH$	-	-	4.5	pF





BC846-AU, BC847-AU, BC848-AU, BC849-AU, BC850-AU SERIES

ELECTRICAL CHARACTERISTICS CURVE (BC846A-AU, BC847A-AU, BC848A-AU)

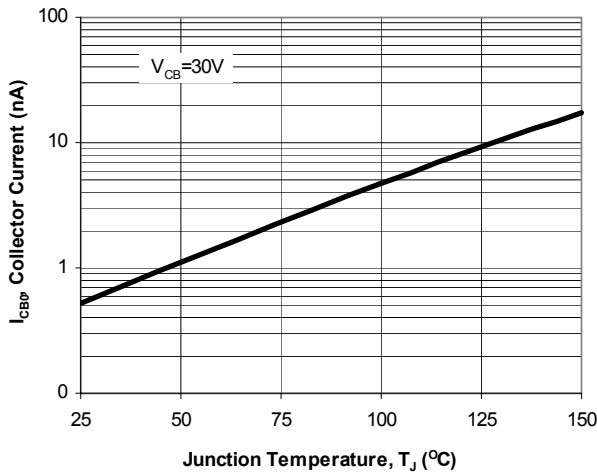


Fig. 1. Typical I_{CB0} vs. Junction Temperature

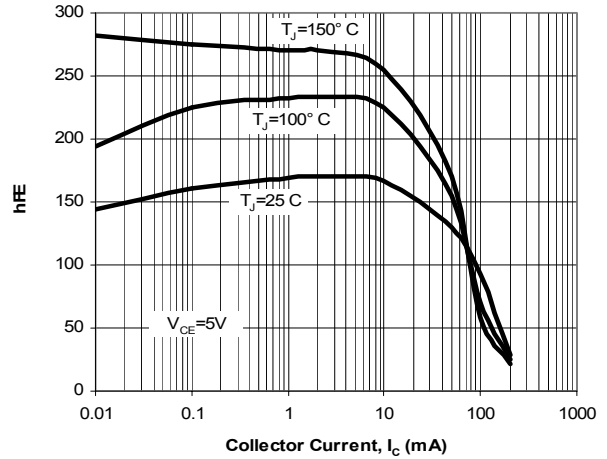


Fig. 2. Typical h_{FE} vs. Collector Current

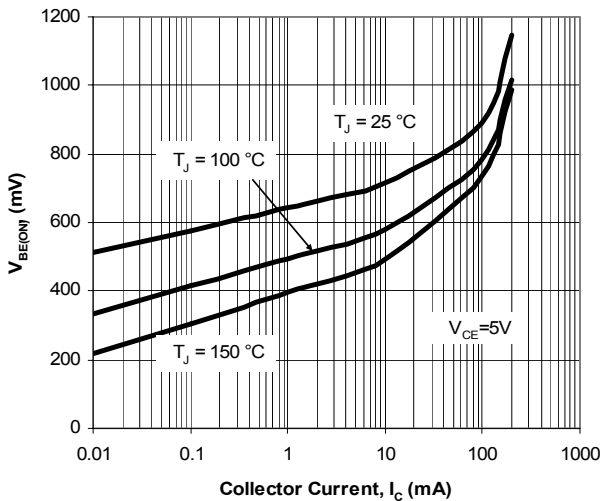


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

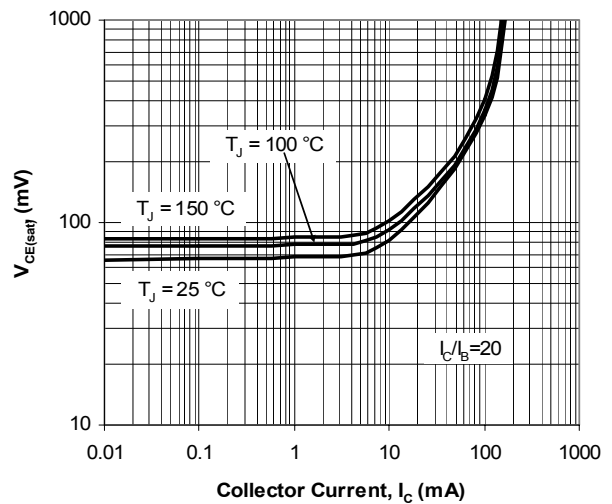


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

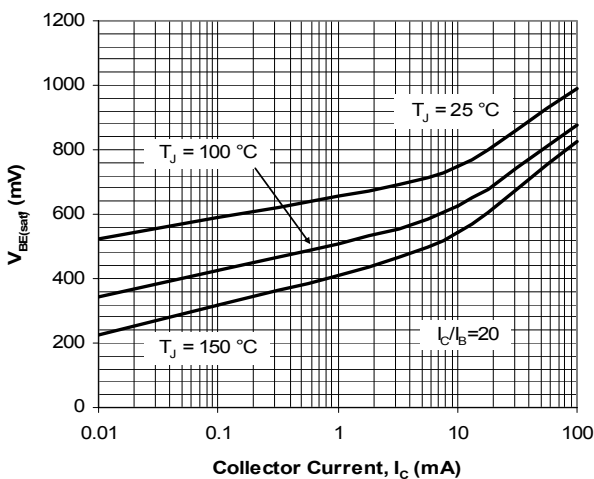


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

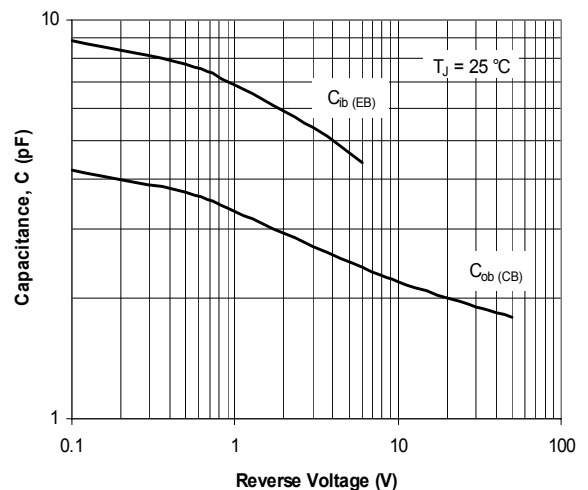


Fig. 6. Typical Capacitances vs. Reverse Voltage



BC846-AU, BC847-AU, BC848-AU, BC849-AU, BC850-AU SERIES

ELECTRICAL CHARACTERISTICS CURVE (BC846B-AU, BC847B-AU, BC848B-AU, BC849B-AU, BC850B-AU)

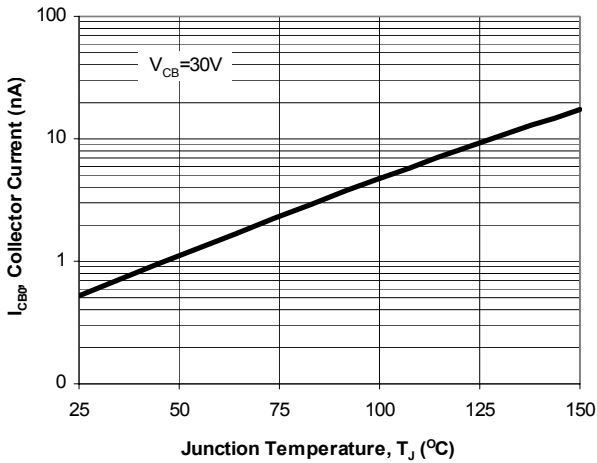


Fig. 1. Typical I_{CB0} vs. Junction Temperature

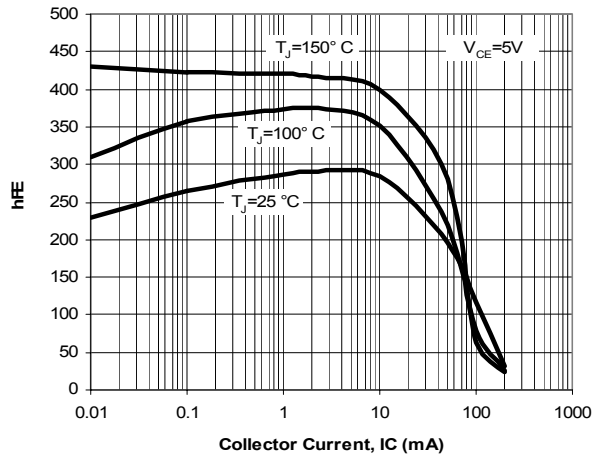


Fig. 2. Typical h_{FE} vs. Collector Current

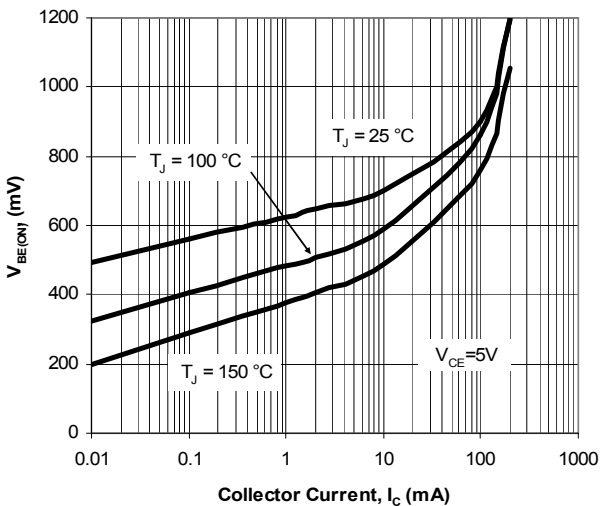


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

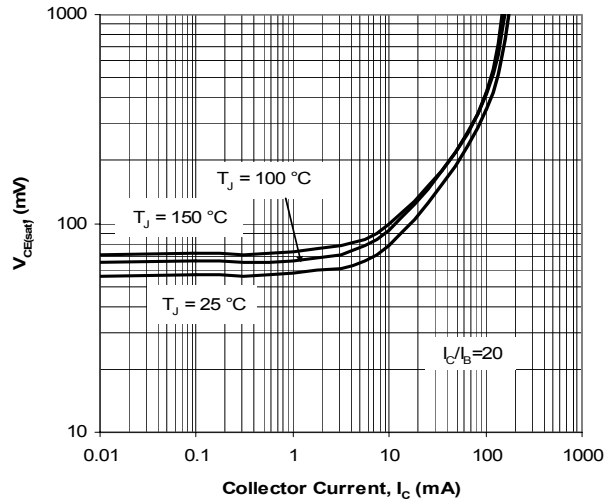


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

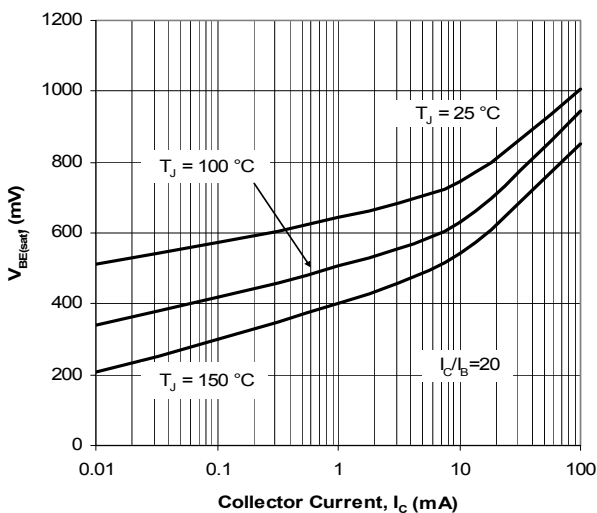


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

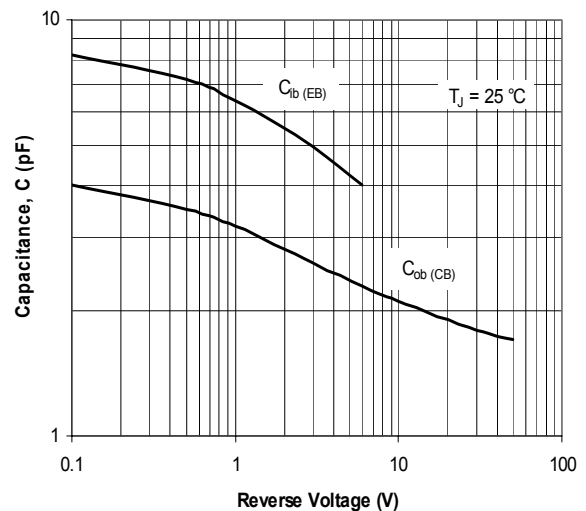


Fig. 6. Typical Capacitances vs. Reverse Voltage



BC846-AU, BC847-AU, BC848-AU, BC849-AU, BC850-AU SERIES

ELECTRICAL CHARACTERISTICS CURVE (BC847C-AU, BC848C-AU, BC849C-AU, BC850C-AU)

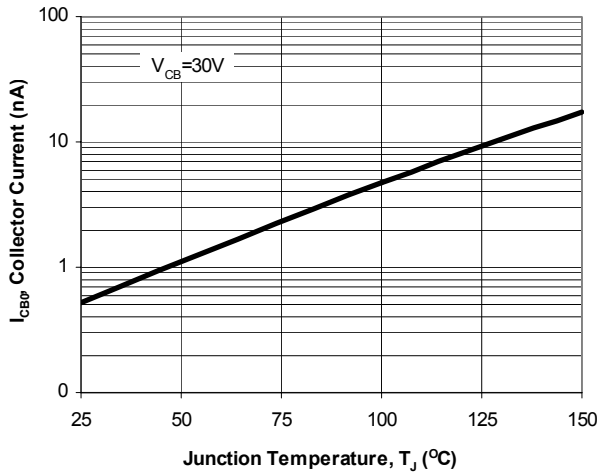


Fig. 1. Typical I_{CB0} vs. Junction Temperature

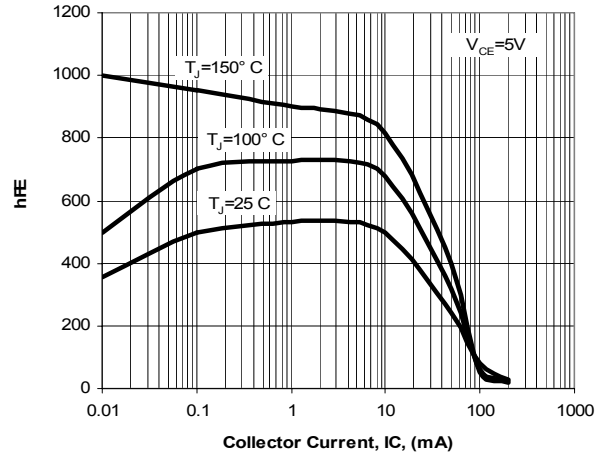


Fig. 2. Typical h_{FE} vs. Collector Current

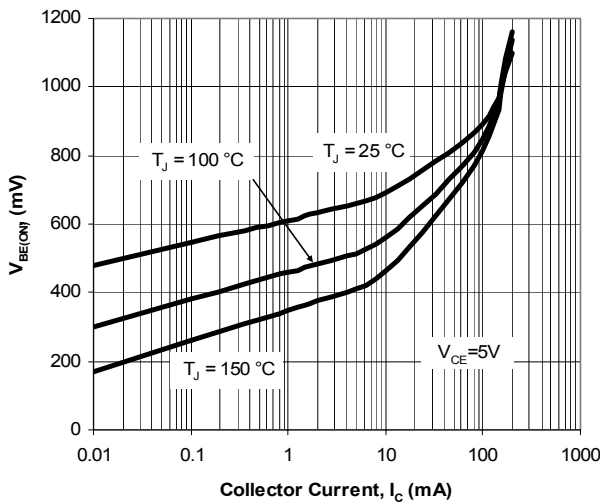


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

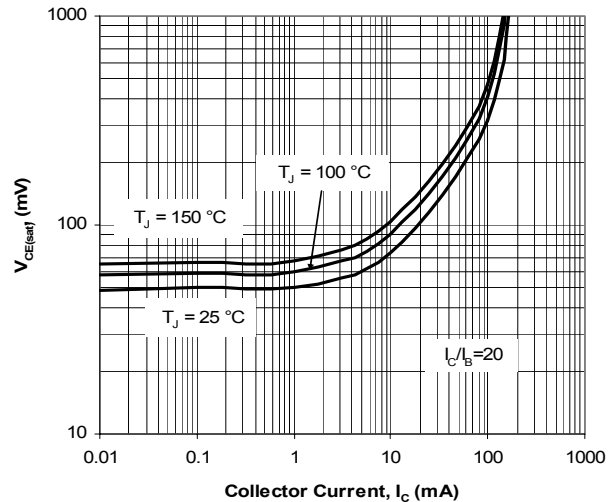


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

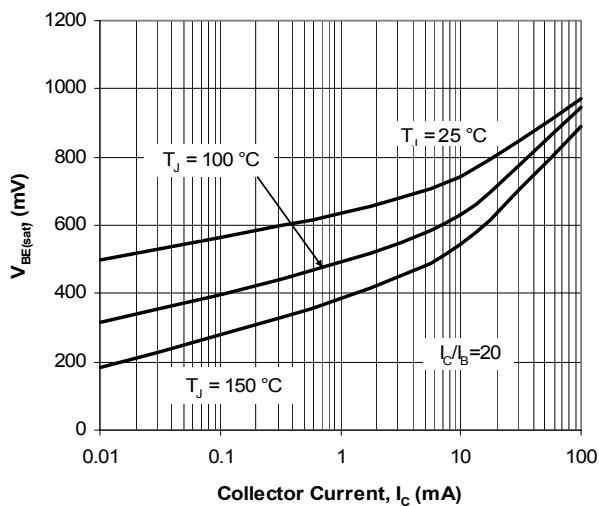


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

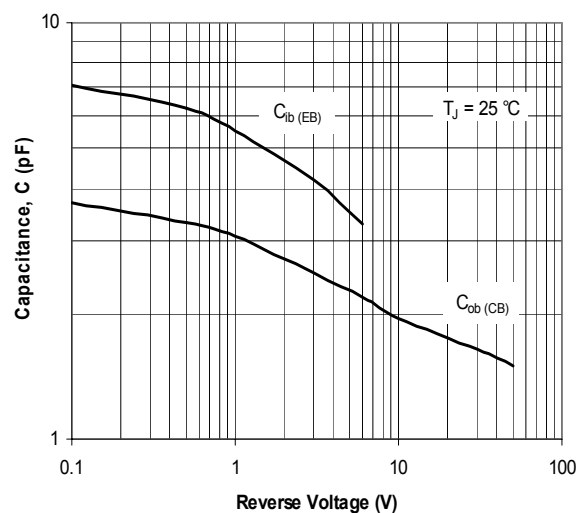
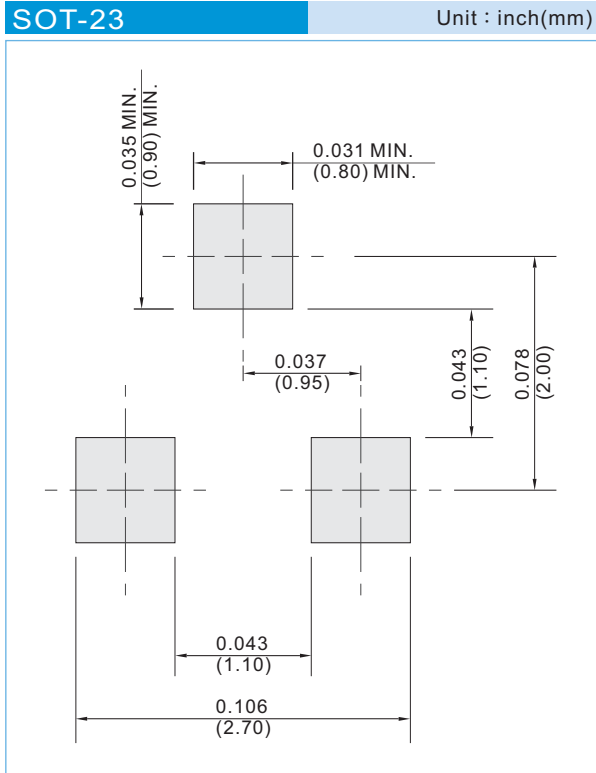


Fig. 6. Typical Capacitances vs. Reverse Voltage



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MOUNTING PAD LAYOUT



ORDER INFORMATION

- Packing information
 - T/R - 12K per 13" plastic Reel
 - T/R - 3K per 7" plastic Reel



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Part No_packing code_Version

BC846_R1_000A1

BC846_R2_000A1

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1 st Code	Packing size code	2 nd Code	HF or RoHS	1 st Code	2 nd ~5 th Code
Tape and Ammunition Box (T/B)	A	N/A	0	HF	0	serial number
Tape and Reel (T/R)	R	7"	1	RoHS	1	serial number
Bulk Packing (B/P)	B	13"	2			
Tube Packing (T/P)	T	26mm	X			
Tape and Reel (Right Oriented) (TRR)	S	52mm	Y			
Tape and Reel (Left Oriented) (TRL)	L	PANASERT T/B CATHODE UP (PBCU)	U			
FORMING	F	PANASERT T/B CATHODE DOWN (PBCD)	D			



BC846!5 I ,BC847!5 I ,BC848!5 I ,BC849!5 I ,BC850!5 I SERIES

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