BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

NPN GENERAL PURPOSE TRANSISTORS

VOLTAGE 30/45/65 Volt **POWER** 330 mWatt

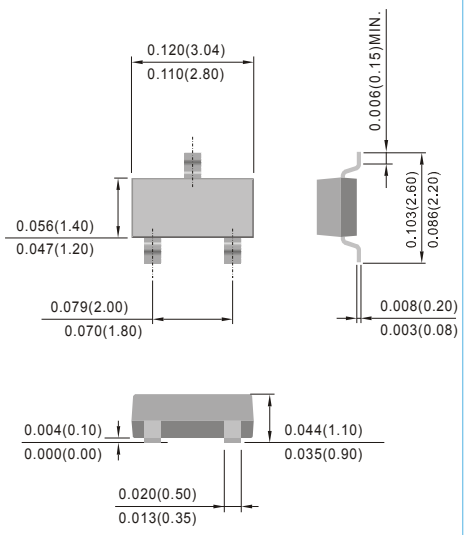
FEATURES

- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current IC = 100mA
- AEC-Q101 qualified
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard

MECHANICAL DATA

- Case: SOT-23, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0084 grams

SOT-23 Unit : inch(mm)



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	Unit
Collector - Emitter 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_{CEO}	65 45 30	V
Collector - Base 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_{CBO}	80 50 30	V
Emitter - Base 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_{EBO}	6 6 5	V
Collector Current - Continuous		I_C	100	mA
Peak Collector Current		I_{CM}	200	mA

THERMAL CHARACTERISTICS

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

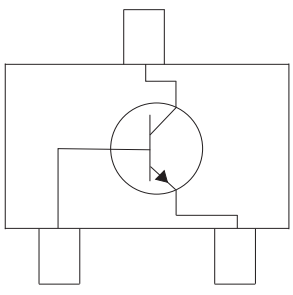
Note 1: Mounted on a FR4 PCB, single-sided copper, standard footprint

BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

ELECTRICAL CHARACTERISTICS

Parameter		Symbol	Test Condition	MIN.	TYP.	MAX.	Unit
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	$V_{(BR)CEO}$	IC=10mA, IB=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	$V_{(BR)CBO}$	IC=10uA, IE=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	$V_{(BR)EBO}$	IE=1uA, IC=0	6 6 5	-	-	V
Emitter-Base Cutoff Current		I_{EBO}	VEB=5	-	-	100	nA
Collector-Base Cutoff Current		I_{CBO}	VCB=30V, IE=0 VCB=30V, IE=0,T_J=150°C	-	-	15 5	nA µA
DC Current Gain	BC846-AU~BC848-AU Suffix "A" BC846-AU~BC850-AU Suffix "B" BC847-AU~BC850-AU Suffix "C"	h_{FE}	IC=10uA, VCE=5V	-	90 150 270	-	-
DC Current Gain	BC846-AU~BC848-AU Suffix "A" BC846-AU~BC850-AU Suffix "B" BC847-AU~BC850-AU Suffix "C"	h_{FE}	IC=2mA, VCE=5V	110 200 420	180 290 520	220 450 800	-
Collector - Emitter Saturation Voltage		$V_{CE(SAT)}$	IC=10mA, IB=0.5mA IC=100mA, IB=5mA	-	-	0.25 0.6	V
Base - Emitter Saturation Voltage		$V_{BE(SAT)}$	IC=10mA, IB=0.5mA IC=100mA, IB=5mA	-	0.7 0.9	-	V
Base - Emitter Voltage		$V_{BE(ON)}$	IC=2mA, VCE=5V IC=10mA, VCE=5V	0.58 -	0.66 -	0.70 0.77	V
Collector - Base Capacitance		C_{CBO}	VCB=10V, IE=0, f=1MHz	-	-	4.5	pF

NPN



BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

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

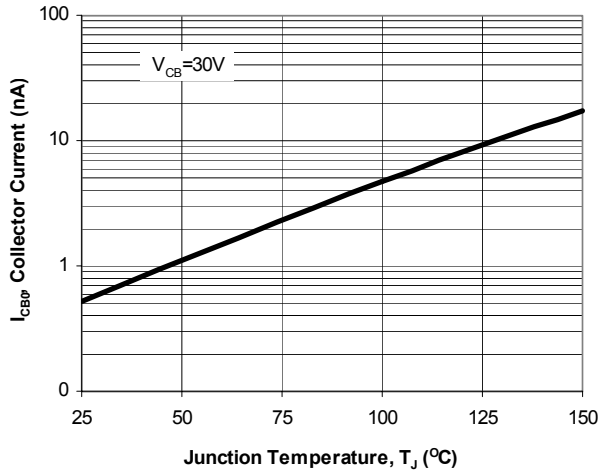


Fig. 1. Typical I_{CB0} vs. Junction Temperature

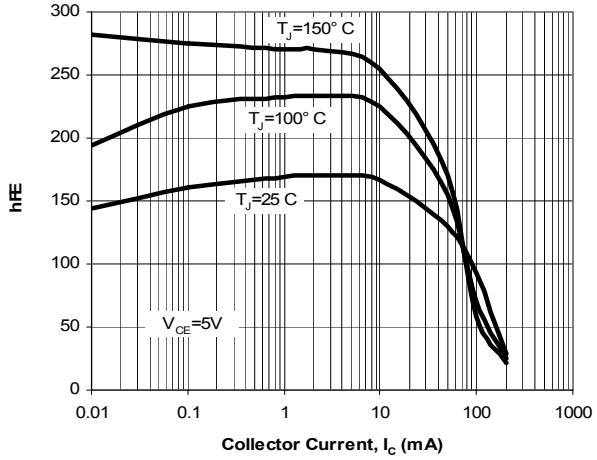


Fig. 2. Typical h_{FE} vs. Collector Current

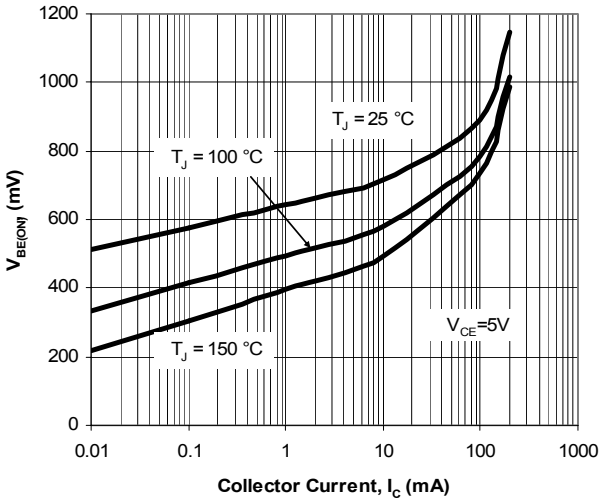


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

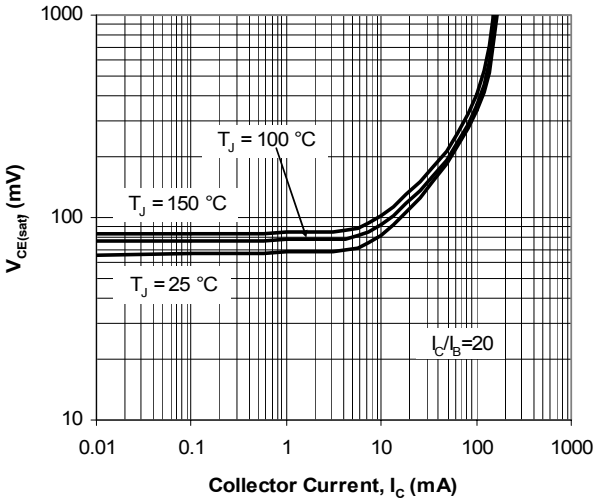


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

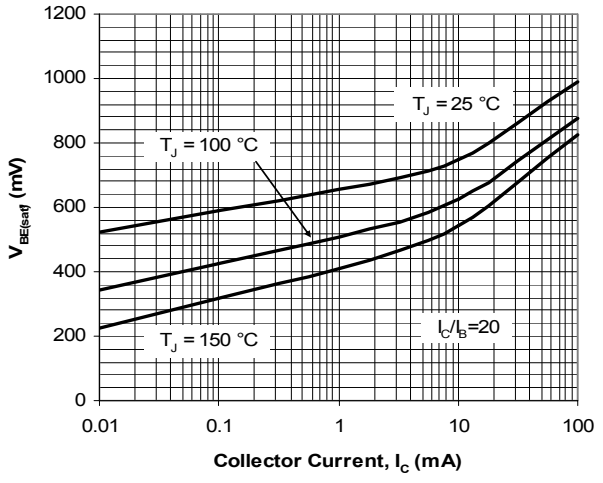


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

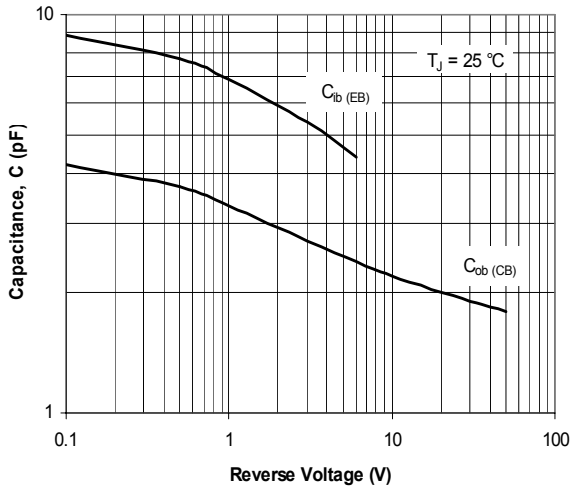


Fig. 6. Typical Capacitances vs. Reverse Voltage

BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

ELECTRICA5L CHARACTERISTICS CURVE (BC846B-AU,BC847B-AU,BC848B-AU,BC849B-AU,BC850B-AU)

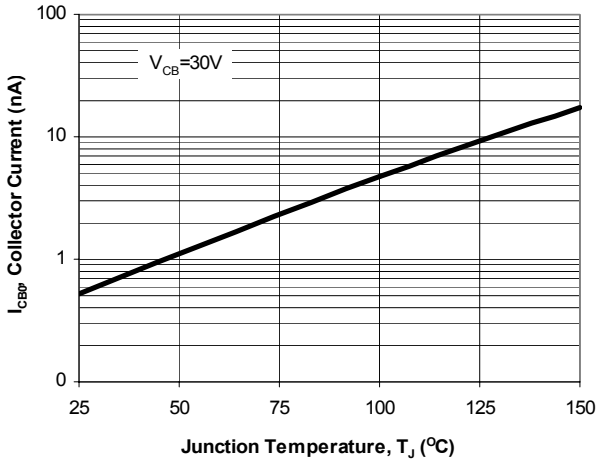


Fig. 1. Typical I_{CB0} vs. Junction Temperature

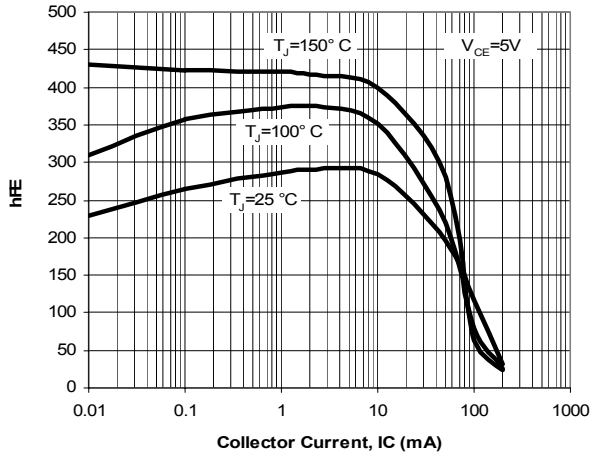


Fig. 2. Typical h_{FE} vs. Collector Current

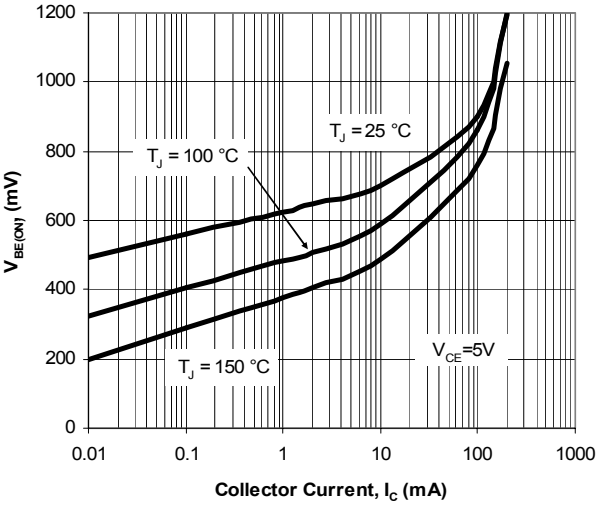


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

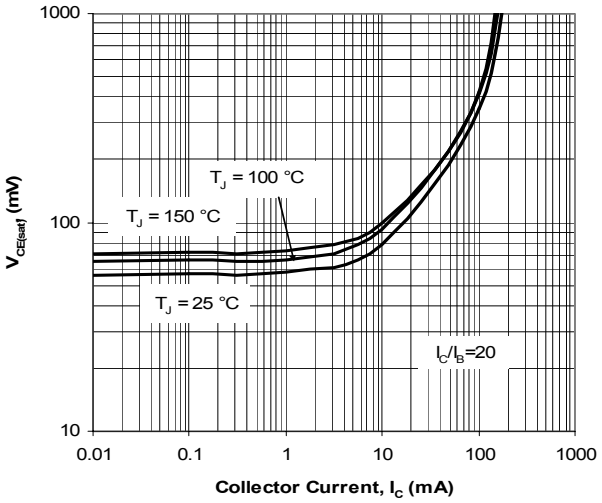


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

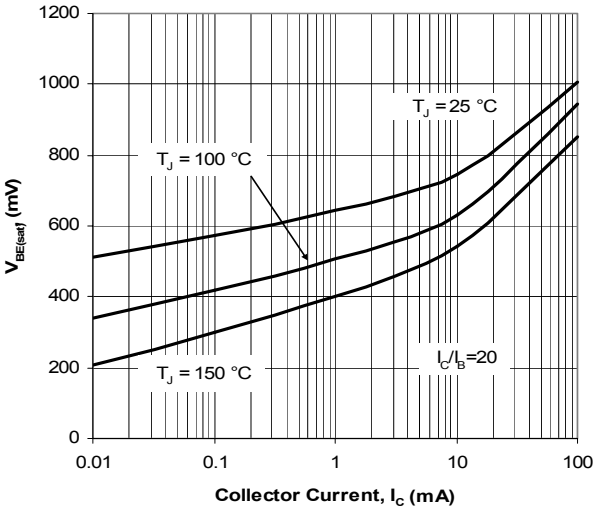


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

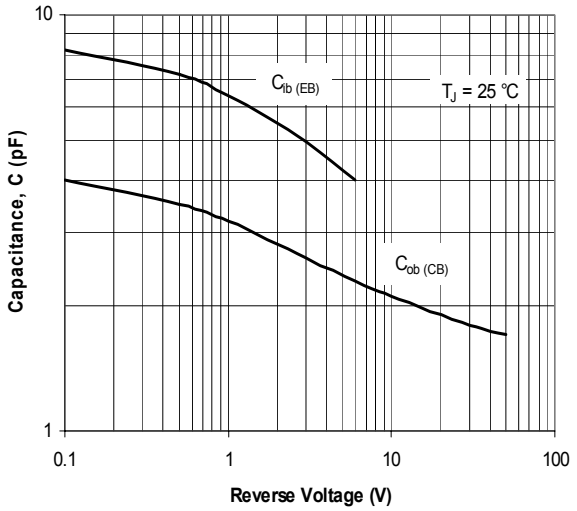


Fig. 6. Typical Capacitances vs. Reverse Voltage

BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

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

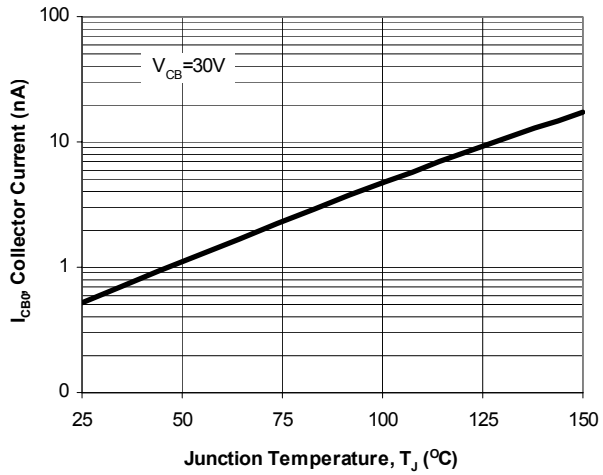


Fig. 1. Typical I_{CB0} vs. Junction Temperature

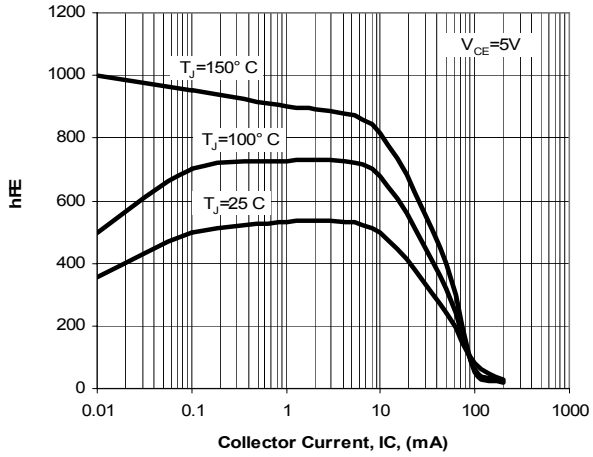


Fig. 2. Typical h_{FE} vs. Collector Current

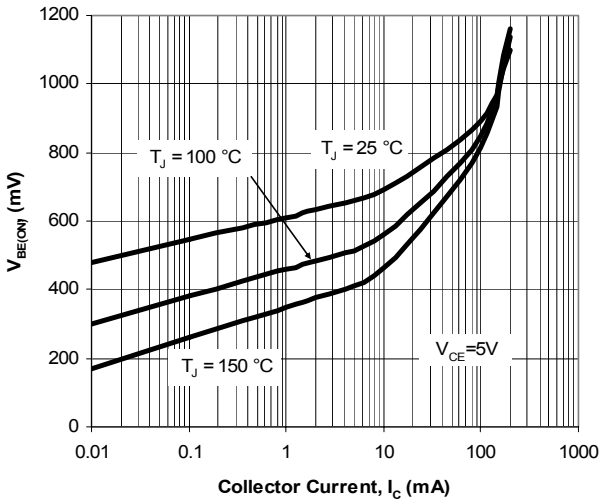


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

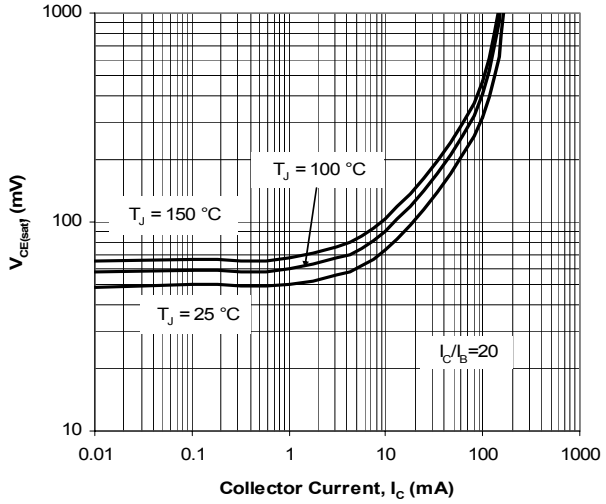


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

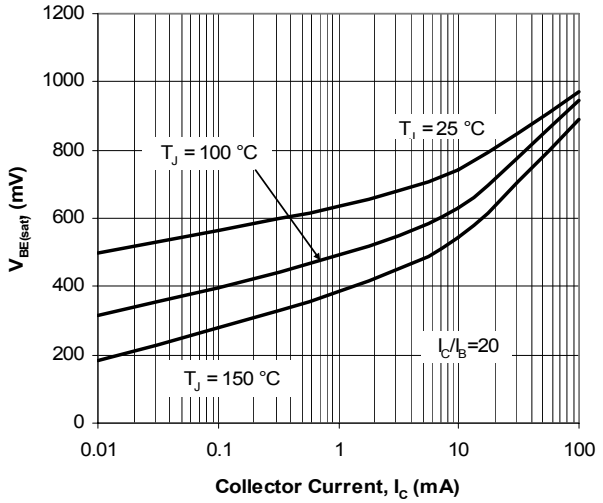


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

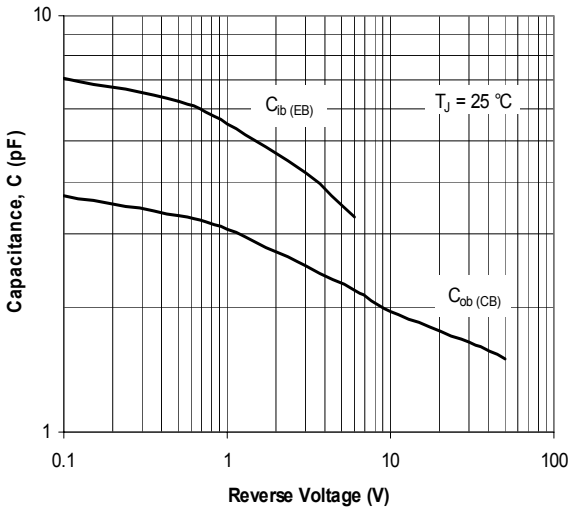


Fig. 6. Typical Capacitances vs. Reverse Voltage

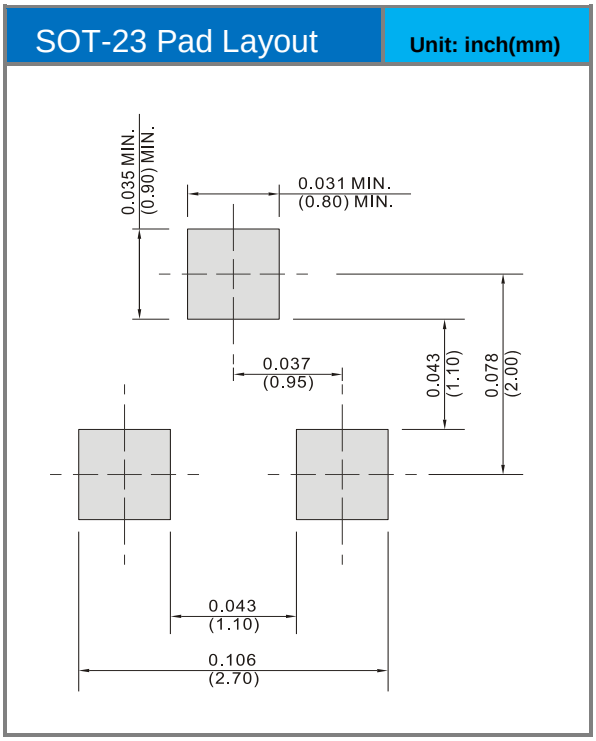
BC846x-AU,BC847x-AU,BC848x-AU,BC849x-AU,BC850x-AU SERIES

Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BC84xx-AU	SOT-23	3K pcs / 7” reel	See Table
BC84xx-AU	SOT-23	12K pcs / 13” reel	See Table

Mounting Pad Layout

SOT-23 Pad Layout — Unit: inch(mm)



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