PANJIT SEMI CONDUCTOR

BC846AW ~ BC850CW

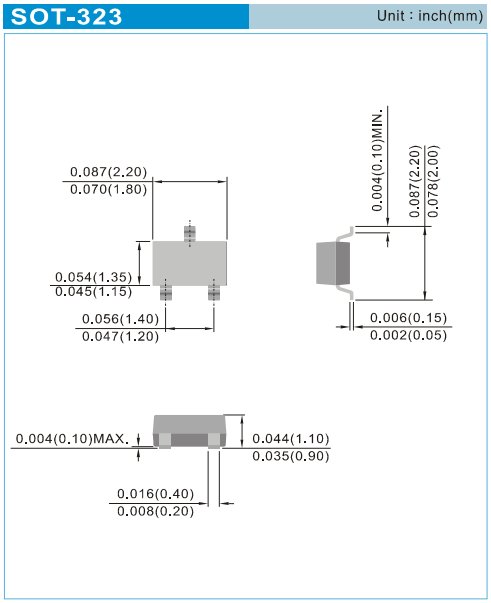
NPN GENERAL PURPOSE TRANSISTORS

VOLTAGE 30/45/65 Volt **POWER** 250 mWatt

FEATURES

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

SOT-323 Unit : inch(mm)



MECHANICAL DATA

- Case: SOT-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0001 ounce, 0.005 gram

Device Marking:				
BC846AW=46A	BC847AW=47A	BC848AW=48A		
BC846BW=46B	BC847BW=47B	BC848BW=48B	BC849BW=49B	BC850BW=50B
	BC847CW=47C	BC848CW=48C	BC849CW=49C	BC850CW=50C

ABSOLUTE RATINGS

Parameter		Symbol	Value	Units
Collector - Emitter Voltage	BC846W BC847W, BC850W BC848W, BC849W	V_{CEO}	65 45 30	V
Collector - Base Voltage	BC846W BC847W, BC850W BC848W, BC849W	V_{CBO}	80 50 30	V
Emitter - Base Voltage	BC846W BC847W, BC850W BC848W, BC849W	V_{EBO}	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}	250	mW
Typical thermal Resistance	$R_{\theta JA}$ $R_{\theta JC}$	500 100	°C/W
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

Note 1: Transistor mounted on FR-5 board 1.0 x 0.75 x 0.062 in.

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ELECTRICAL CHARACTERISTICS

PARAMETER		Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	BC846AW,BW BC847AW/BW/CW,BC850BW/CW BC848AW/BW/CW,BC849BW/CW	$V_{(BR)CEO}$	IC=10mA, IB=0	65 45 30	-	-	V
Collector - Base Breakdown Voltage	BC846AW,BW BC847AW/BW/CW,BC850BW/CW BC848AW/BW/CW,BC849BW/CW	$V_{(BR)CBO}$	IC=10μA, IE=0	80 50 30	-	-	V
Emitter - Base Breakdown Voltage	BC846AW,BW BC847AW/BW/CW,BC850BW/CW BC848AW/BW/CW,BC849BW/CW	$V_{(BR)EBO}$	IE=1μA, 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~BC848 Suffix "AW" BC846~BC850 Suffix "BW" BC847~BC850 Suffix "CW"	h_{FE}	IC=10μA, VCE=5V	-	90 150 270	-	-
DC Current Gain	BC846~BC848 Suffix "AW" BC846~BC850 Suffix "BW" BC847~BC850 Suffix "CW"	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=5.0mA	-	-	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 -	0.7 0.77	V
Collector - Base Capacitance		C_{CBO}	VCB=10V, IE=0, f=1MHz	-	-	4.5	pF

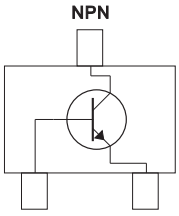


Fig.34

BC846AW ~ BC850CW

ELECTRICAL CHARACTERISTICS CURVE (BC846AW,BAC847AW,BC848AW)

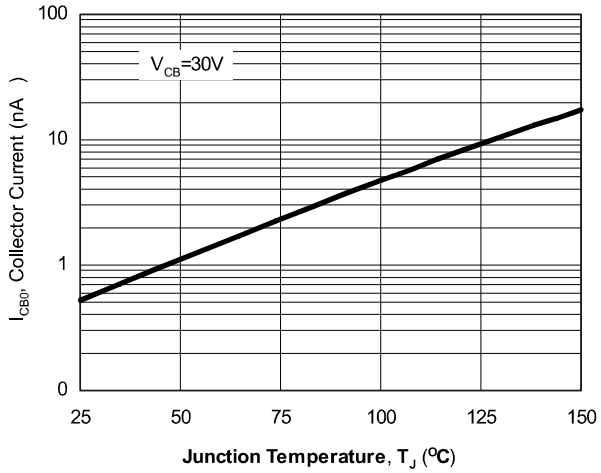


Fig.1 Typical I_{CBO} vs. Junction Temperature

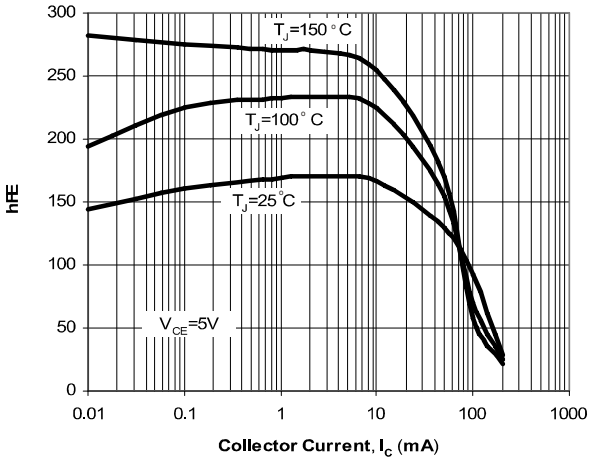


Fig.2 Typical h_{FE} vs. Collector Current

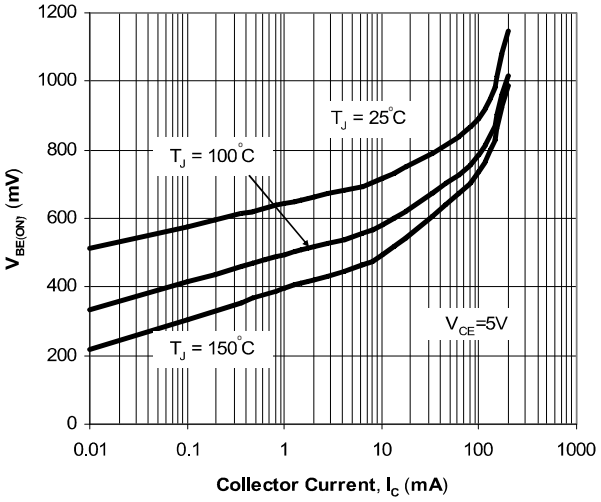


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

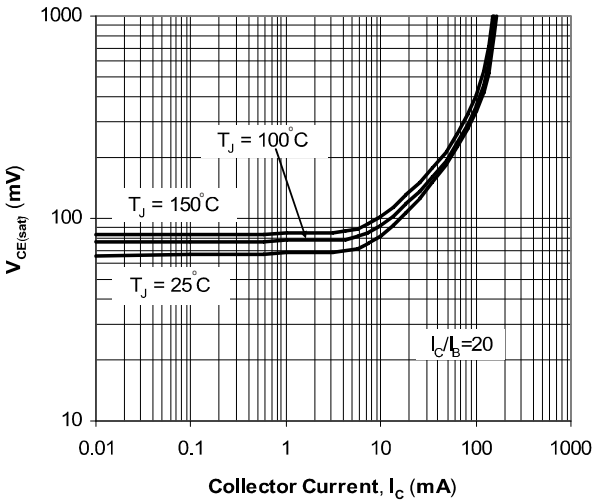


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

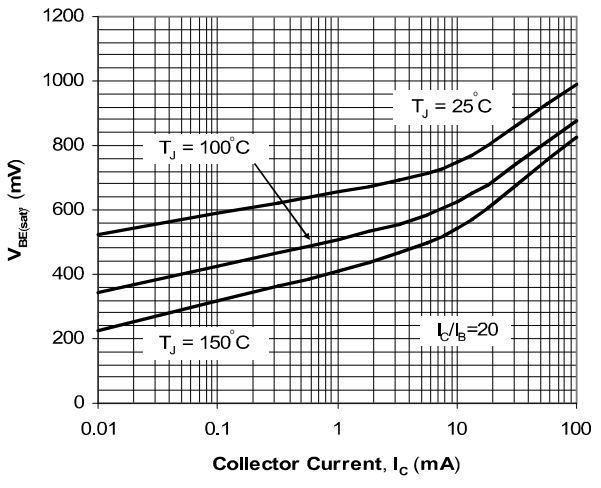


Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

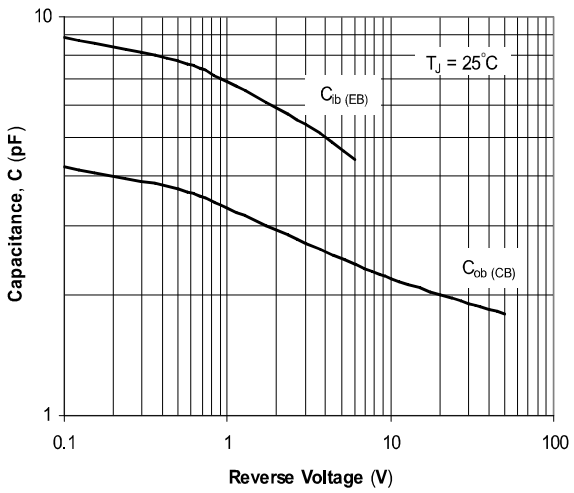


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW ~ BC850CW

ELECTRICAL CHARACTERISTICS CURVE (BC846BW,BAC847BW,BC848BW,BC849BW,BC850BW)

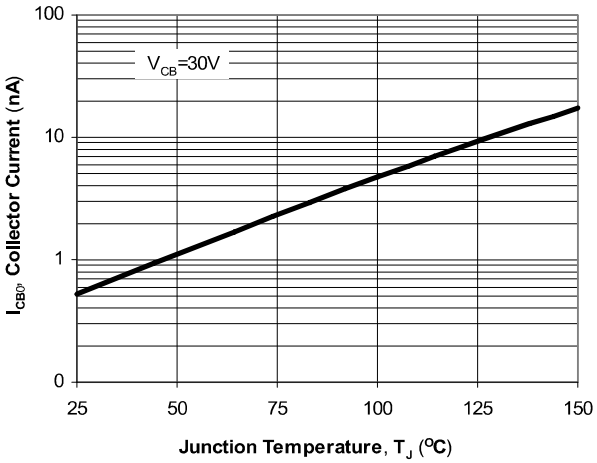


Fig.1 Typical I_{CBO} vs. Junction Temperature

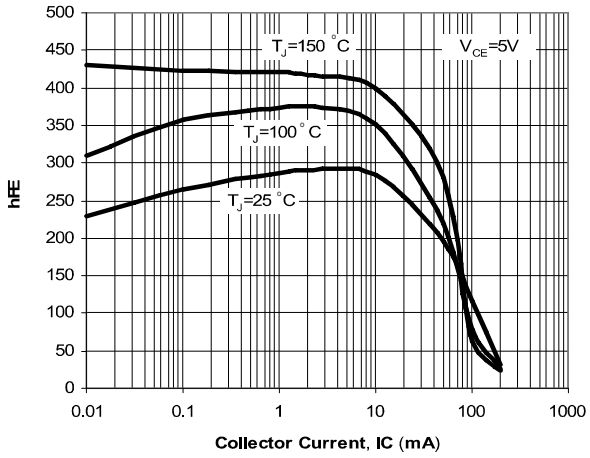


Fig.2 Typical h_{FE} vs. Collector Current

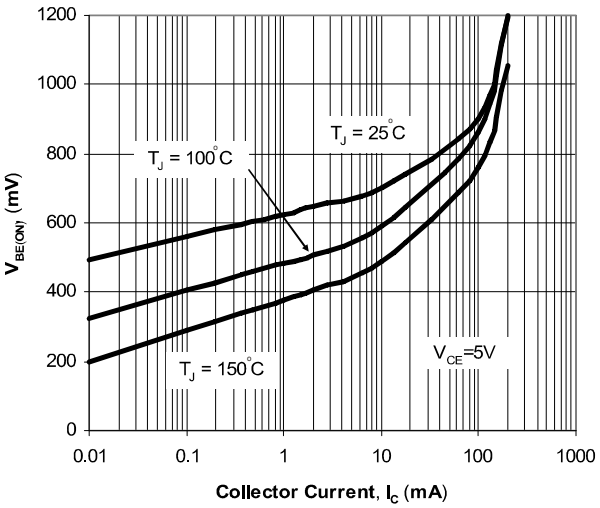


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

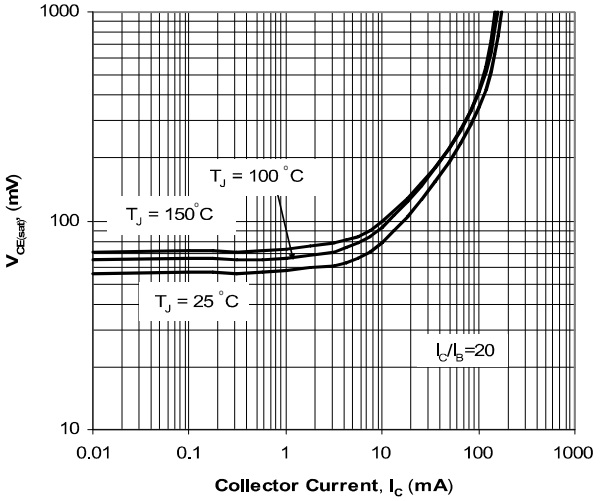


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

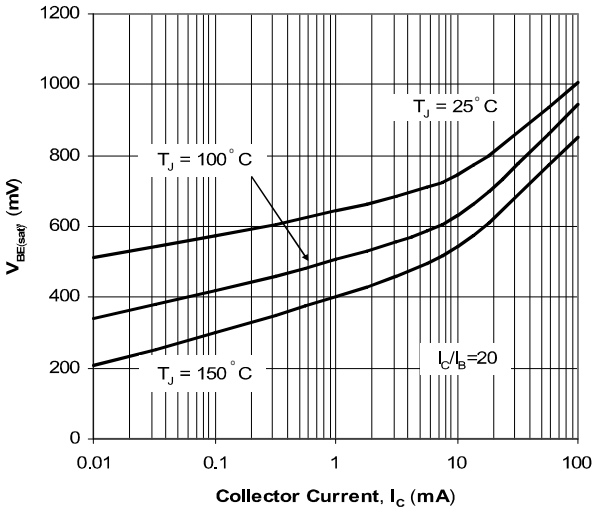


Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

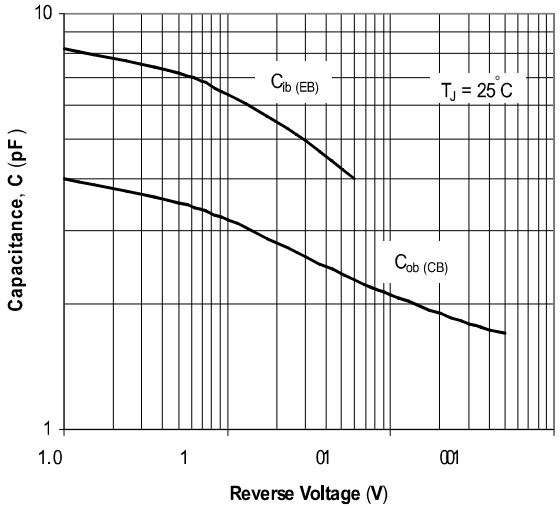


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW ~ BC850CW

ELECTRICAL CHARACTERISTICS CURVE (BAC847CW,BC848CW,BC849CW,BC850CW)

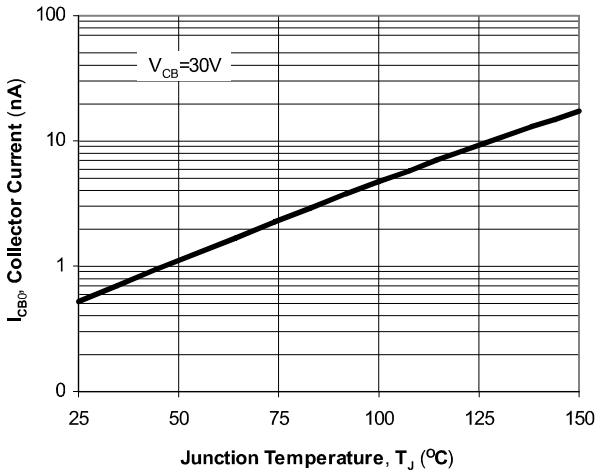


Fig.1 Typical I_{CBO} vs. Junction Temperature

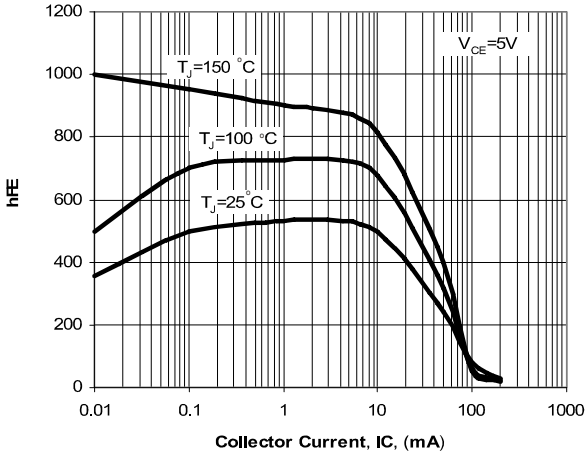


Fig.2 Typical h_{FE} vs. Collector Current

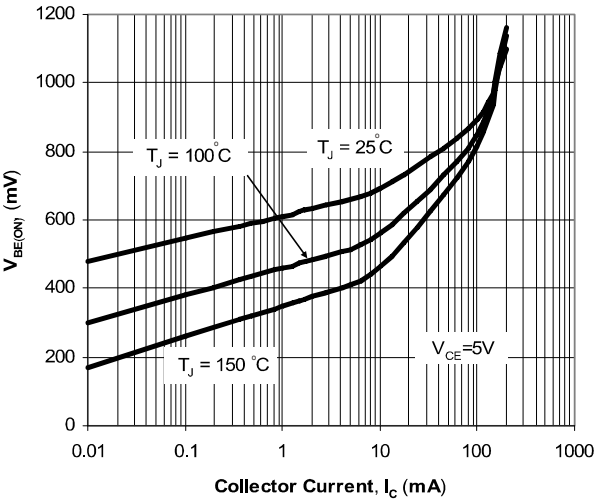


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

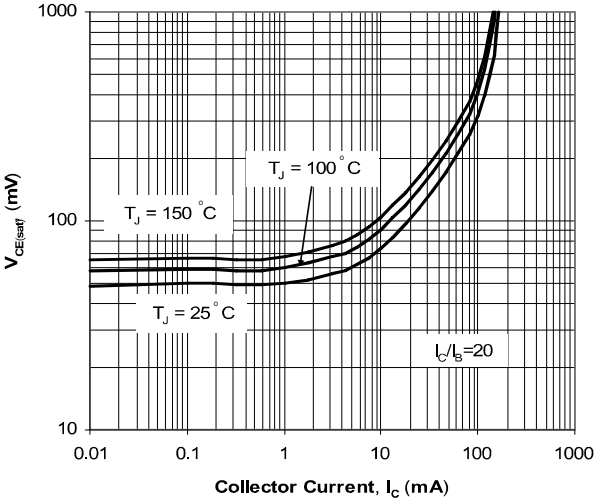
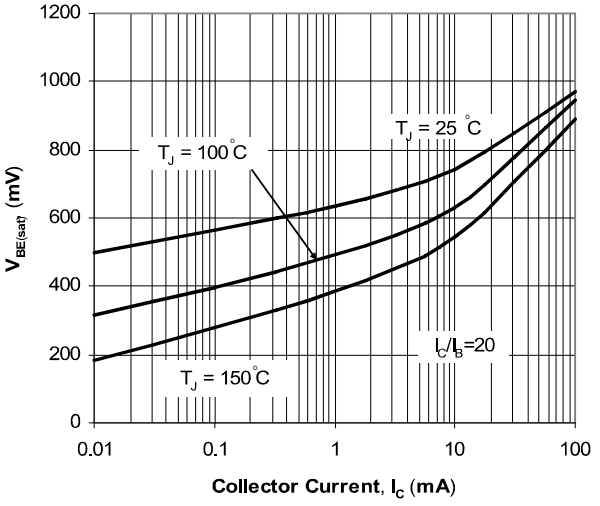


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current



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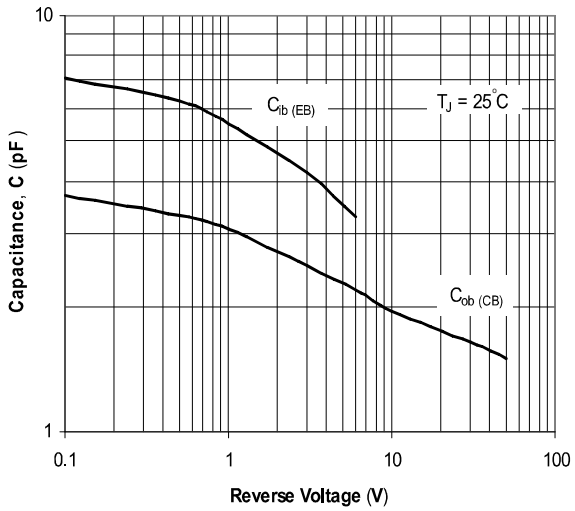
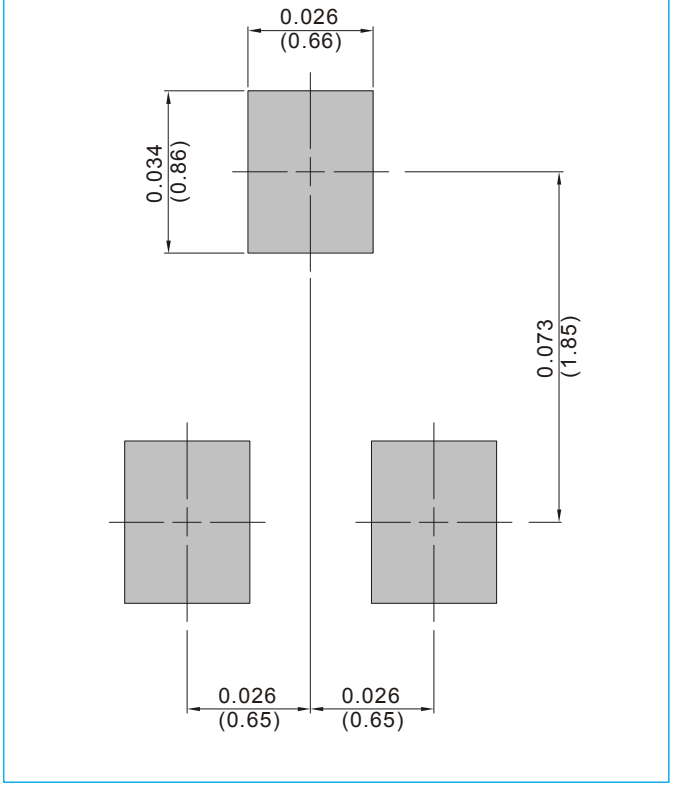


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW ~ BC850CW

MOUNTING PAD LAYOUT

SOT-323 Unit : inch(mm)



ORDER INFORMATION

- Packing information

  T/R - 12K per 13" plastic Reel

  T/R - 3K per 7" plastic Reel

BC846AW ~ BC850CW

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