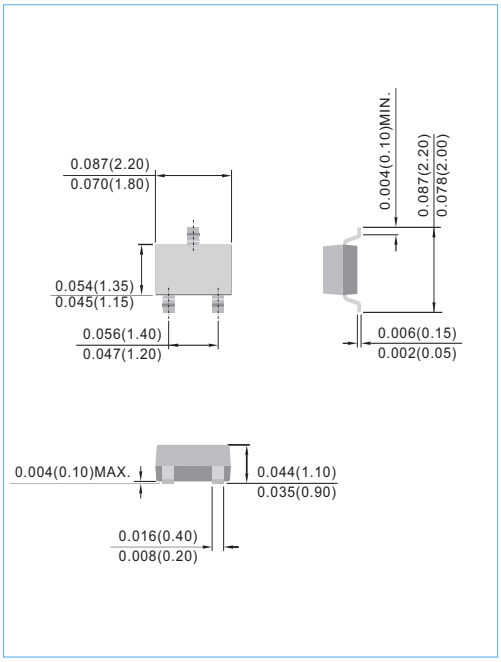
BC846AW ~ BC850CW

NPN GENERAL PURPOSE TRANSISTORS

VOLTAGE 30/45/65 Volts **CURRENT** 150 mWatts

SOT-323 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-323, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0001 ounces, 0.005 grams

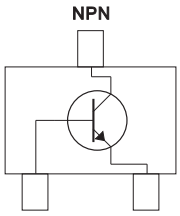


Fig.34

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}	150	mW
Thermal Resistance	R_{thJA} R_{thJC}	400 100	°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.

BC846AW ~ BC850CW

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=10μA, IC=0	6.0 6.0 5.0	-	-	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 5.0	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=2.0mA, 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		$V_{CE(SAT)}$	IC=10mA, IB=0.5mA IC=100mA, IB=5.0mA	-	0.7 0.9	-	V
Base - Emitter Voltage		$V_{CE(SAT)}$	IC=2mA, VCE=5.0V IC=10mA, VCE=5.0V	0.58 -	0.660 -	0.70 0.77	V
Collector - Base Capacitance		C_{CBO}	VCB=10V, IE=0, f=1MH	-	-	4.5	pF

BC846AW ~ BC850CW

ELECTRICAL CHARACTERISTICS CURVE (BC846AW,BC847AW,BC848AW)

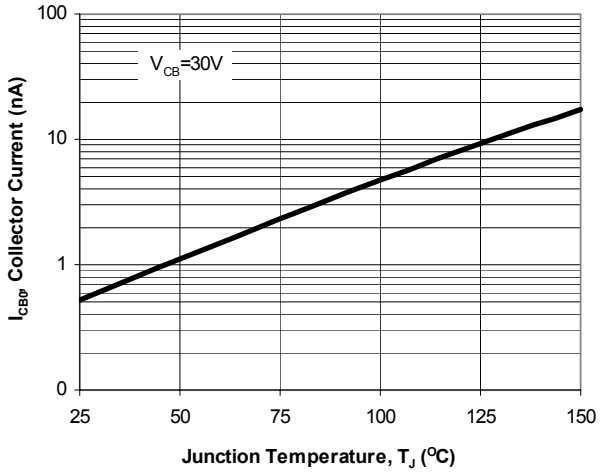


Fig. 1. Typical I_{CB0} vs. Junction Temperature

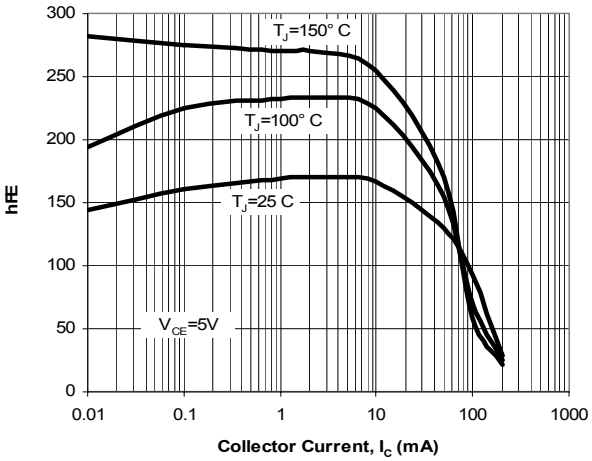


Fig. 2. Typical h_{FE} vs. Collector Current

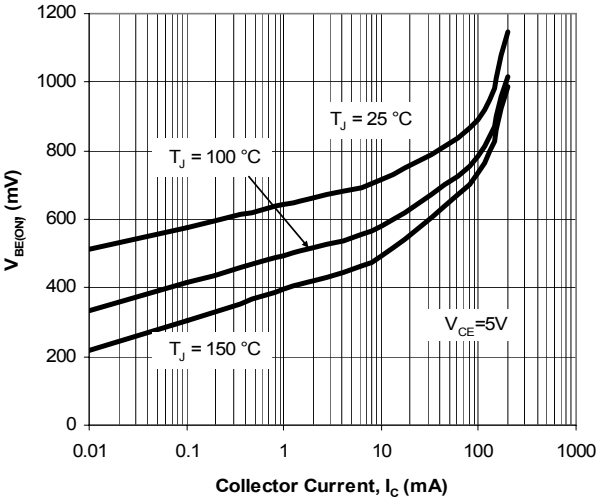


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

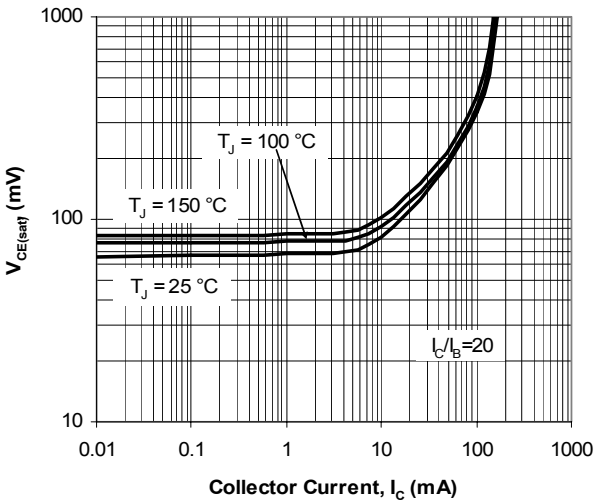


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

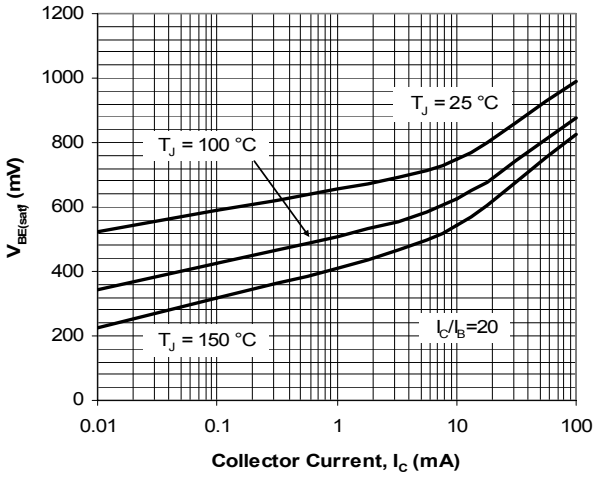


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

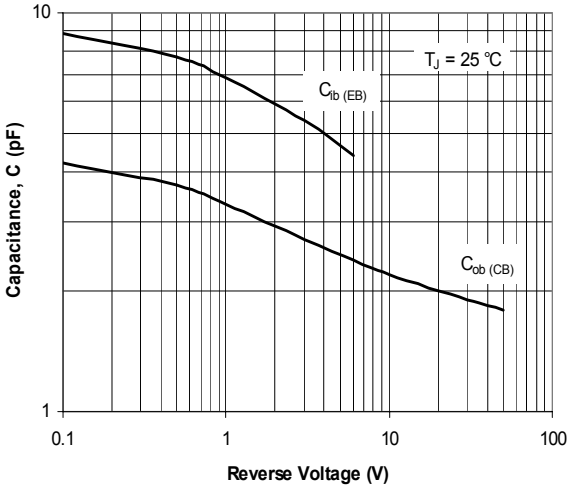


Fig. 6. Typical Capacitances vs. Reverse Voltage

BC846AW ~ BC850CW

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

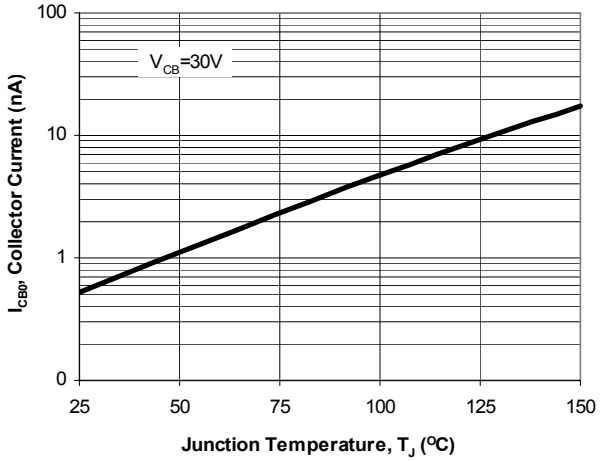


Fig. 1. Typical I_{CB0} vs. Junction Temperature

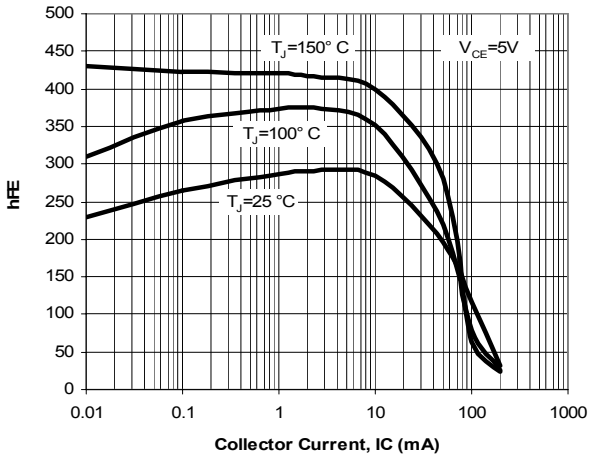


Fig. 2. Typical h_{FE} vs. Collector Current

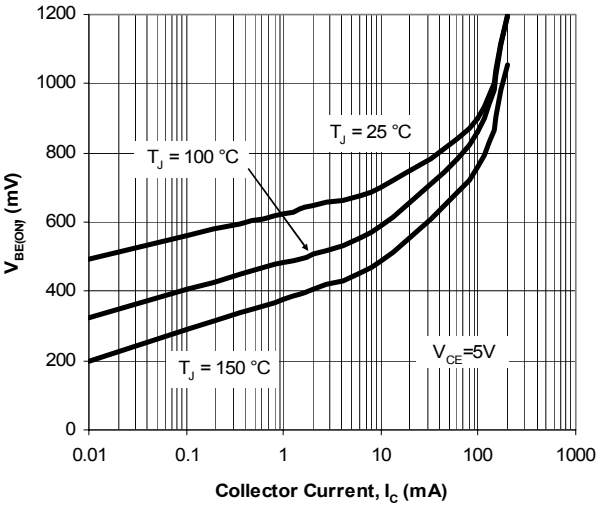


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

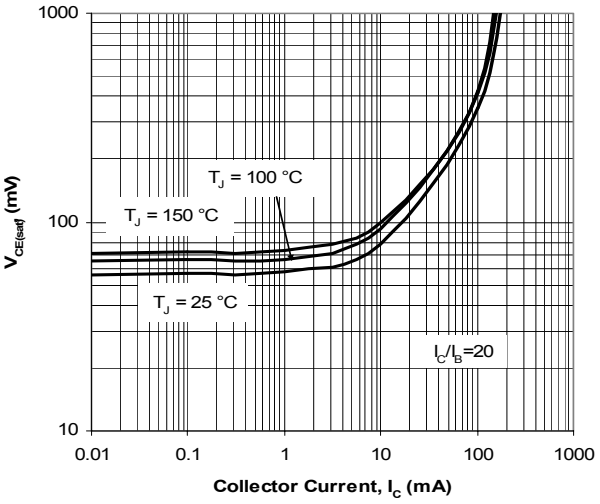


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

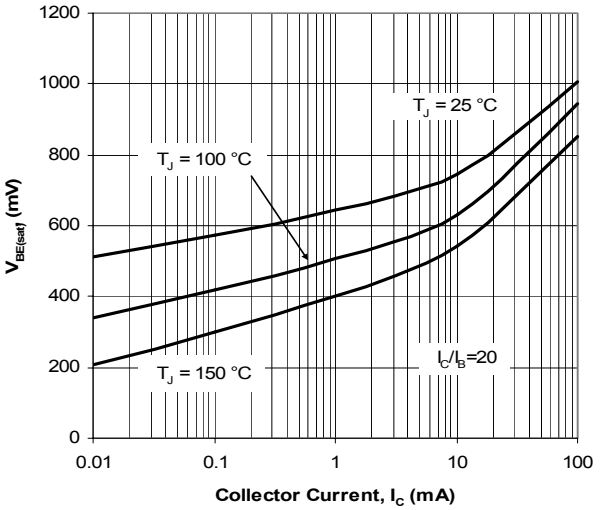


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

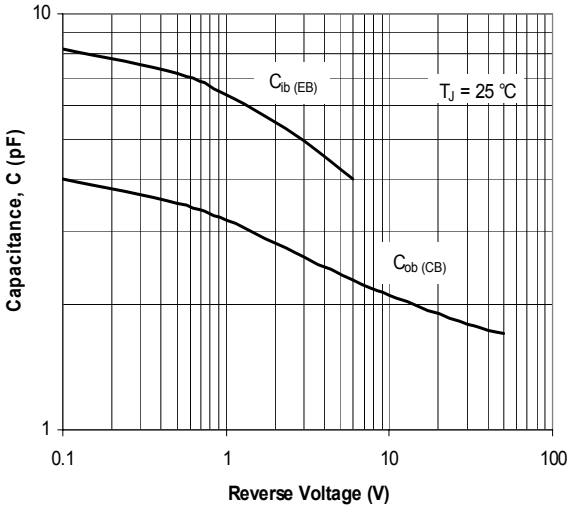


Fig. 6. Typical Capacitances vs. Reverse Voltage

BC846AW ~ BC850CW

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

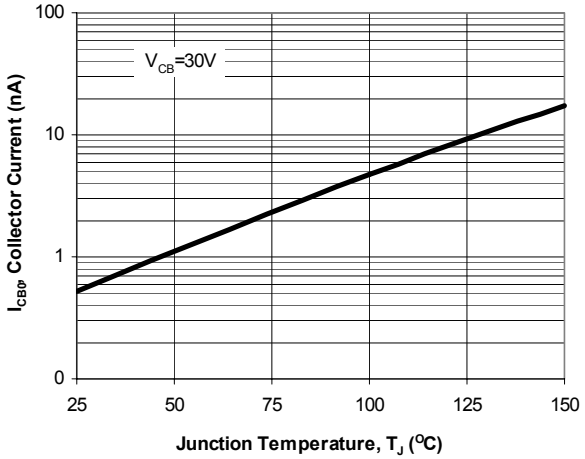


Fig. 1. Typical I_{CB0} vs. Junction Temperature

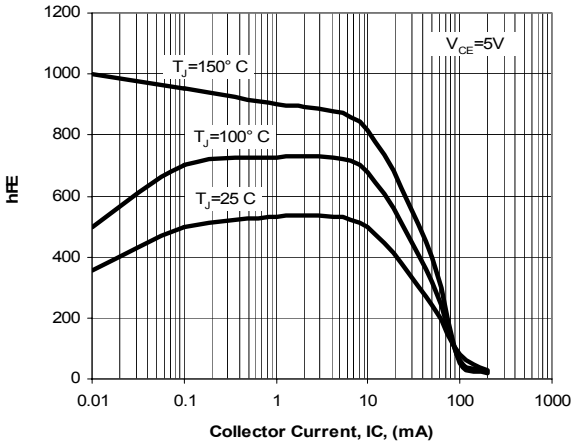


Fig. 2. Typical h_{FE} vs. Collector Current

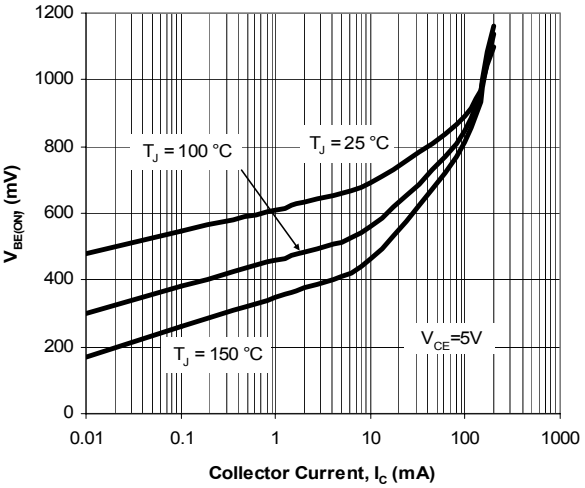


Fig. 3. Typical $V_{BE(ON)}$ vs. Collector Current

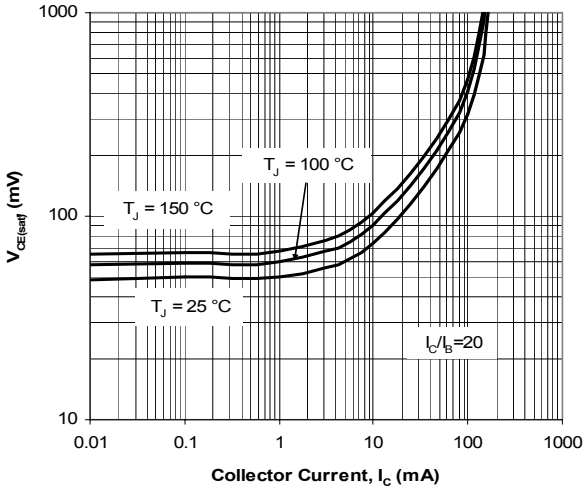


Fig. 4. Typical $V_{CE(SAT)}$ vs. Collector Current

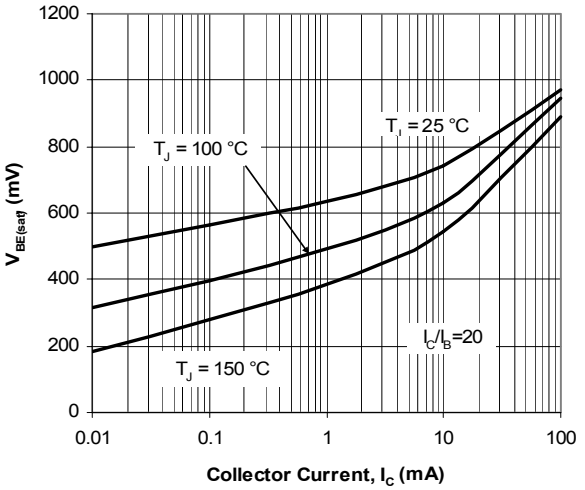


Fig. 5. Typical $V_{BE(SAT)}$ vs. Collector Current

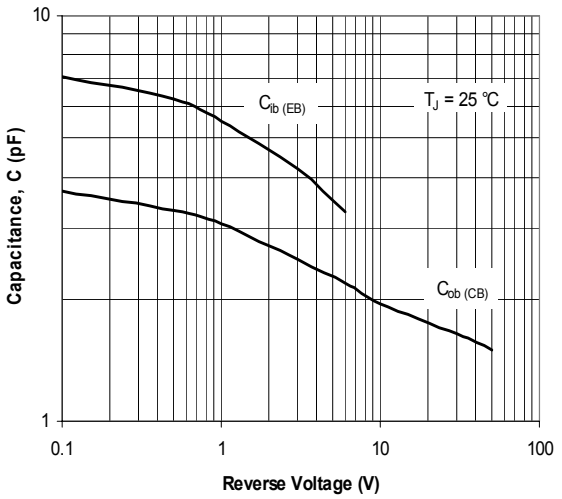
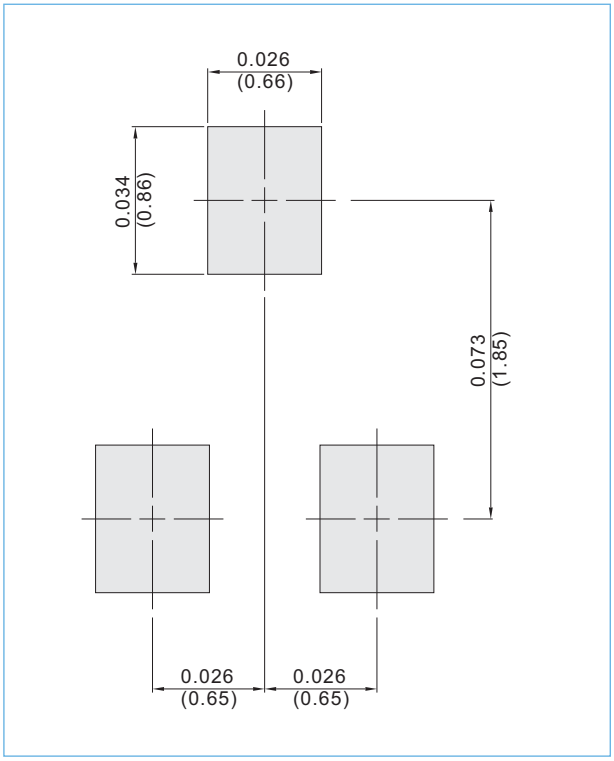


Fig. 6. Typical Capacitances vs. Reverse Voltage

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

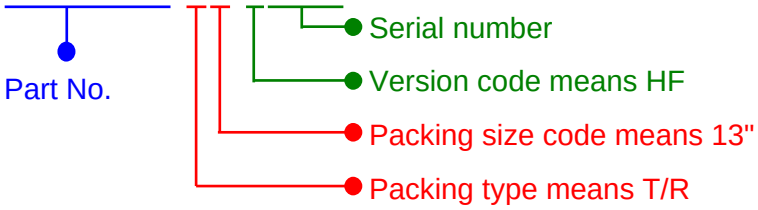
LEGAL STATEMENT

BC846AW ~ BC850CW

Part No_packing code_Version

For example :

RB500V-40_R2_00001



Packing Code XX				Version Code XXXXX		
Packing type	1st Code	Packing size code	2nd Code	HF or RoHS	1st Code	2nd~5th Code
T/B	A	N/A	0	HF	0	serial number
T/R	R	7"	1	RoHS	1	serial number
B/P	B	13"	2			
T/P	T	26mm	X			
TRR	S	52mm	Y			
TRL	L	PBCU	U			
FORMING	F	PBCD	D			