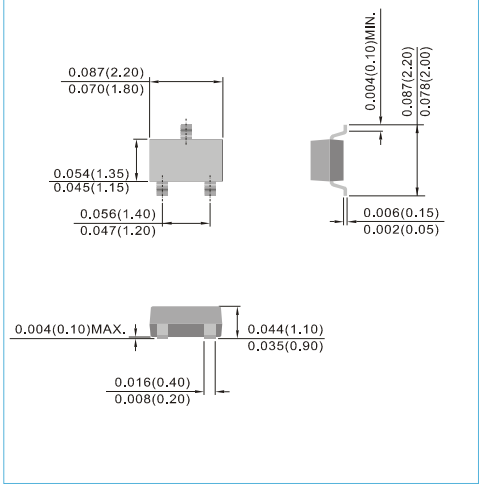
BC846AW-AU ~ BC850CW-AU

NPN GENERAL PURPOSE TRANSISTORS

VOLTAGE	30/45/65 Volt	POWER	250 mWatt

SOT-323 Unit : inch(mm)



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

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

ABSOLUTE RATINGS

Parameter		Symbol	Value	Units
Collector - Emitter Voltage	BC846W-AU BC847W-AU, BC850W-AU BC848W-AU, BC849W-AU	V_{CEO}	65 45 30	V
Collector - Base Voltage	BC846W-AU BC847W-AU, BC850W-AU BC848W-AU, BC849W-AU	V_{CBO}	80 50 30	V
Emitter - Base Voltage	BC846W-AU BC847W-AU, BC850W-AU BC848W-AU, BC849W-AU	V_{EBO}	6 6 5	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.

BC846AW-AU ~ BC850CW-AU

ELECTRICAL CHARACTERISTICS

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

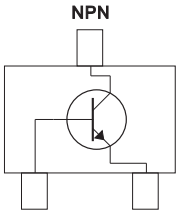


Fig.34

BC846AW-AU ~ BC850CW-AU

ELECTRICAL CHARACTERISTICS CURVE (BC846AW-AU,BAC847AW-AU,BC848AW-AU)

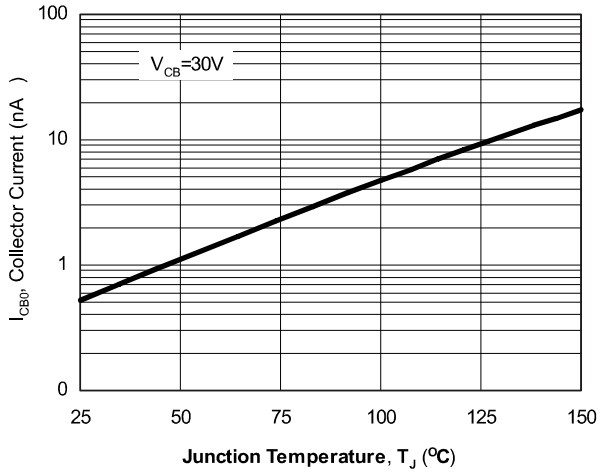


Fig.1 Typical I_{CBO} vs. Junction Temperature

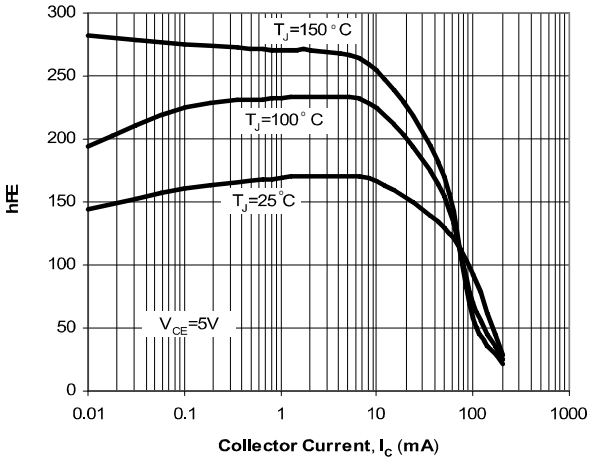


Fig.2 Typical h_{FE} vs. Collector Current

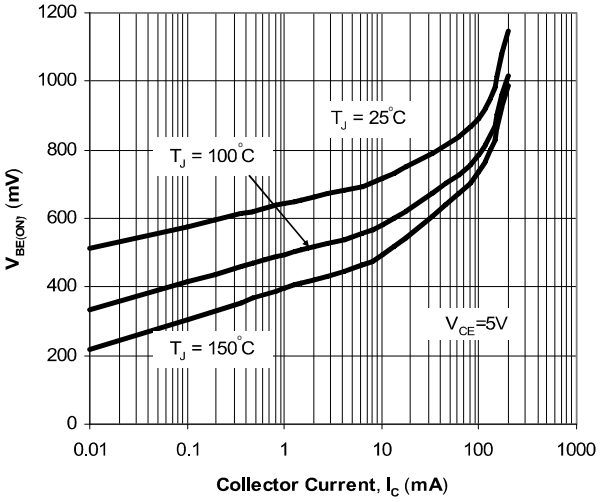


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

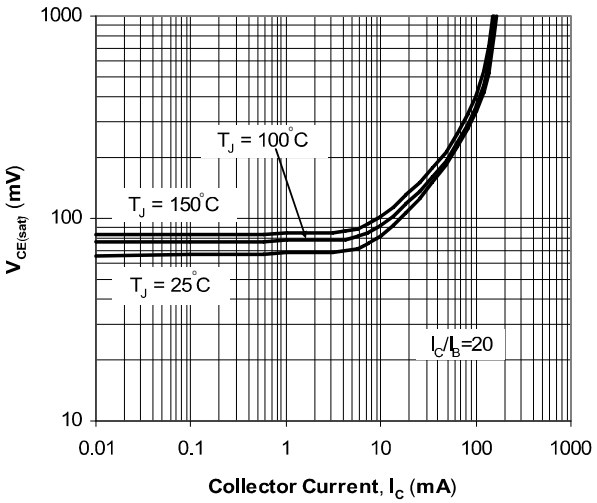


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

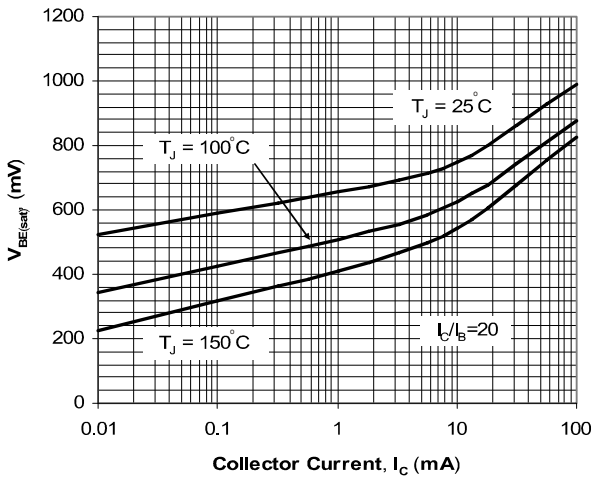


Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

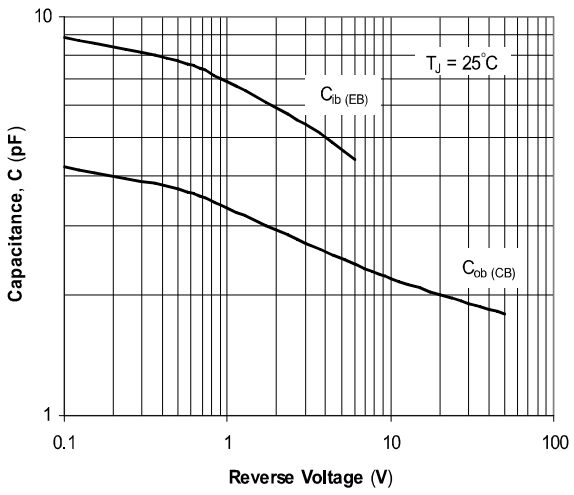


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW-AU ~ BC850CW-AU

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

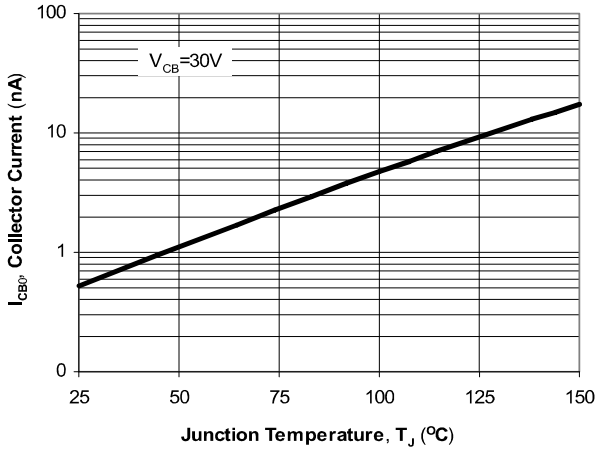


Fig.1 Typical I_{CBO} vs. Junction Temperature

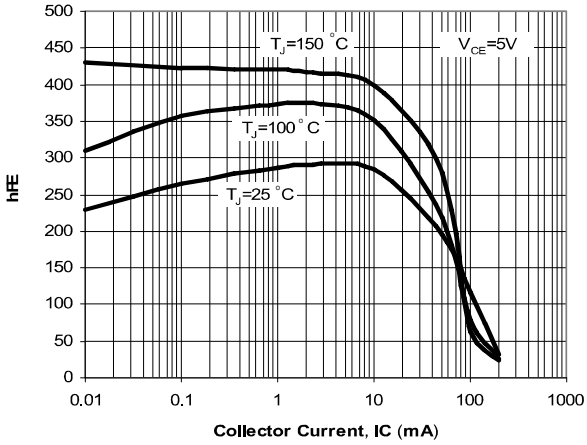


Fig.2 Typical h_{FE} vs. Collector Current

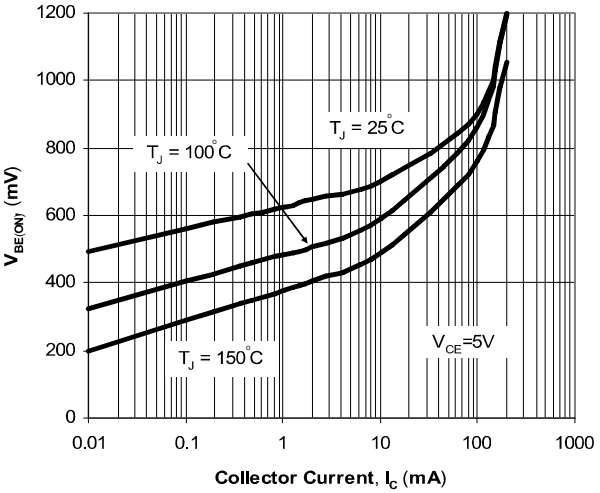


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

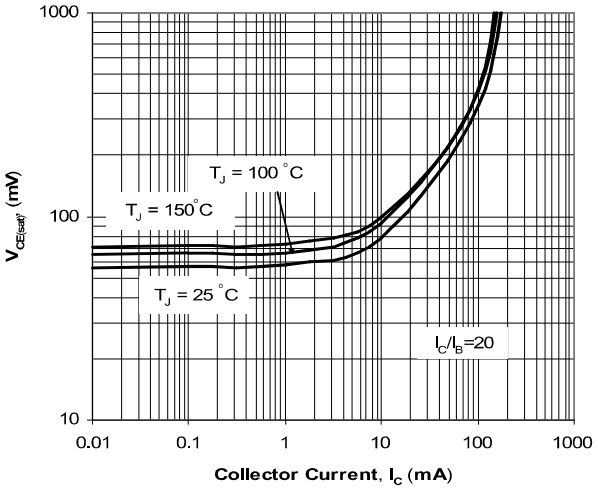


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

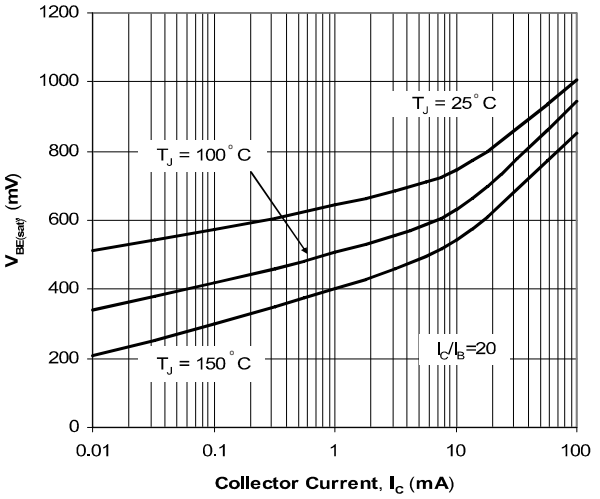


Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

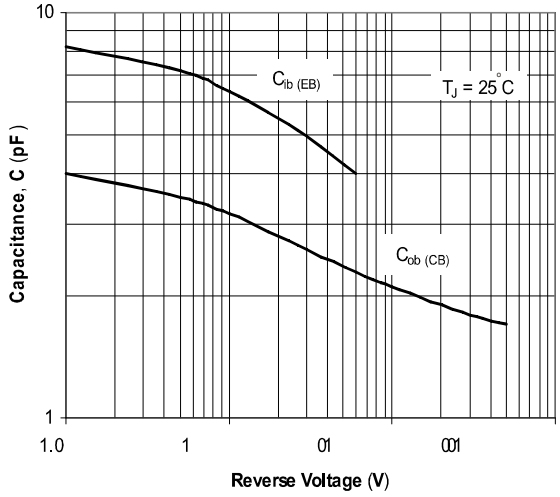


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW-AU ~ BC850CW-AU

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

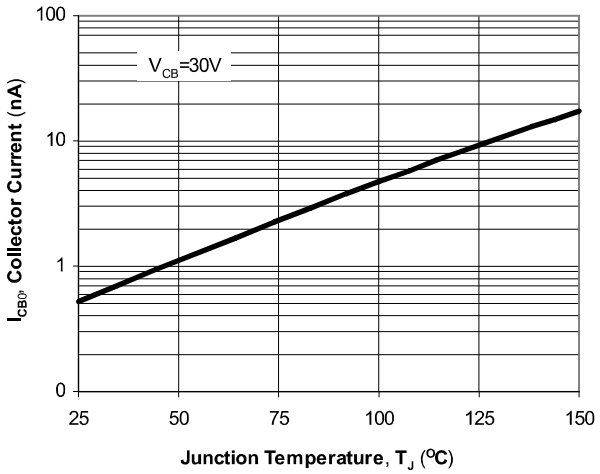


Fig.1 Typical I_{CBO} vs. Junction Temperature

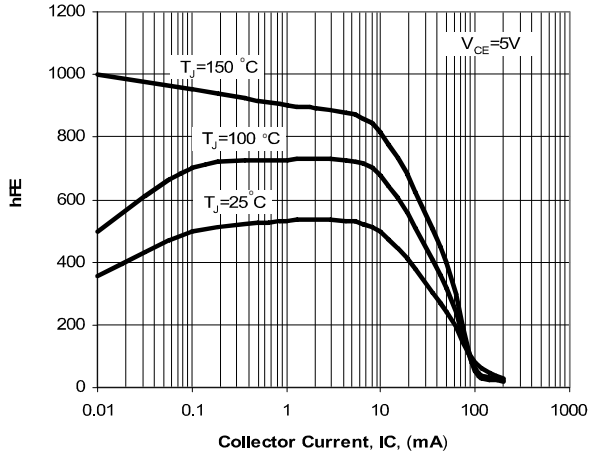


Fig.2 Typical h_{FE} vs. Collector Current

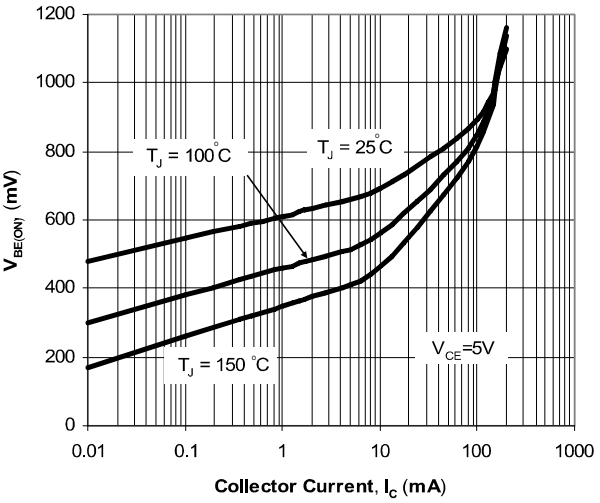


Fig.3 Typical $V_{BE(ON)}$ vs. Collector Current

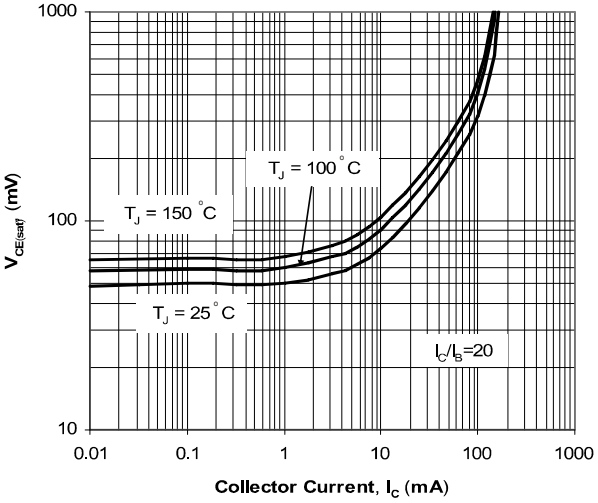


Fig.4 Typical $V_{CE(SAT)}$ vs. Collector Current

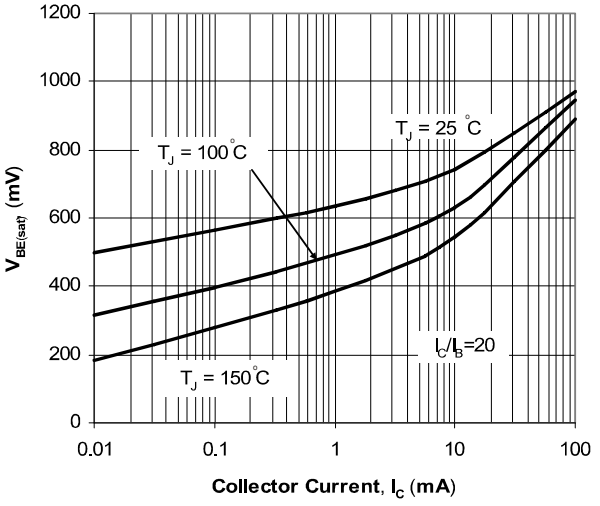


Fig.5 Typical $V_{BE(SAT)}$ vs. Collector Current

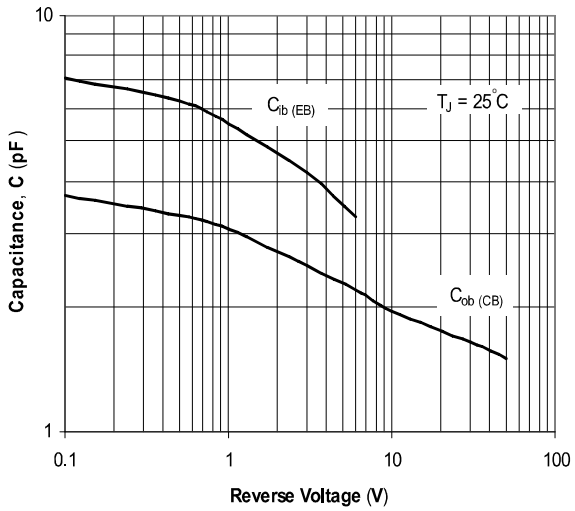
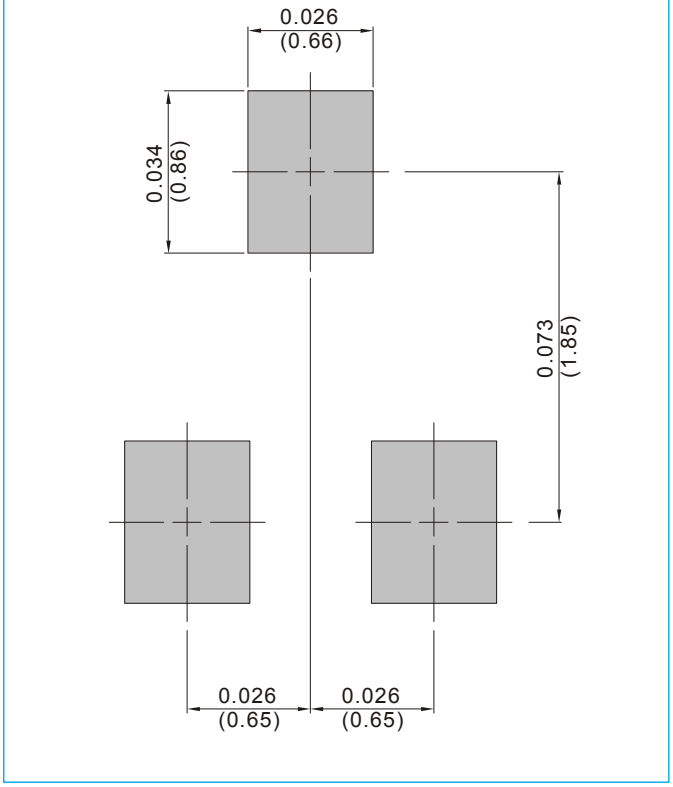


Fig.6 Typical Capacitances vs.Reverse Voltage

BC846AW-AU ~ BC850CW-AU

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-AU ~ BC850CW-AU

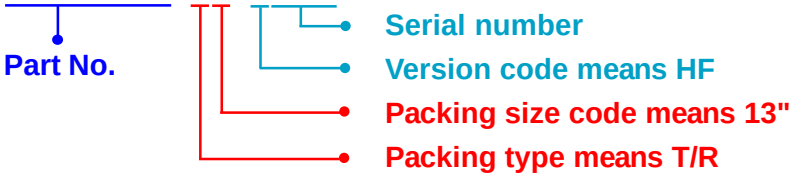
Part No_packing code_Version

BC846AW-AU_R1_000A1

BC846AW-AU_R2_000A1

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
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			

BC846AW-AU ~ BC850CW-AU

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