

BC846BS-AU / BC847AS-AU

NPN GENERAL PURPOSE TRANSISTORS

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

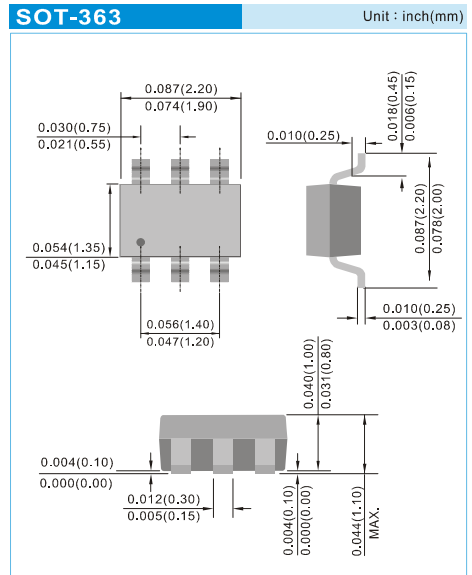
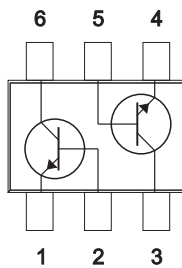
FEATURES

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

MECHANICAL DATA

- Case: SOT-363, Plastic
- Terminals: Solderable per MIL-STD-750, Method 2026
- Approx. Weight: 0.0002 ounces, 0.006 grams
- Marking:

BC846BS-AU=46S BC847AS-AU=47A



ABSOLUTE RATINGS

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

THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max Power Dissipation	P_{TOT}	250	mW
Junction Temperature	T_J	-55 to 150	°C
Storage Temperature	T_{STG}	-55 to 150	°C

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ELECTRICAL CHARACTERISTICS

Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage BC846BS-AU BC847AS-AU	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	65 45	-	-	V
Collector - Base Breakdown Voltage BC846BS-AU BC847AS-AU	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	80 50	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	6	-	-	V
Emitter-Base Cutoff Current	I_{EBO}	$VEB=5$	-	-	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	nA uA
DC Current Gain BC846BS-AU BC847AS-AU	h_{FE}	$I_C=10\mu A, V_{CE}=5V$	-	150 90	-	-
DC Current Gain BC846BS-AU BC847AS-AU	h_{FE}	$I_C=2mA, V_{CE}=5V$	200 110	290 180	450 220	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5mA$	- -	55 200	100 300	mV
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5mA$	-	0.7 0.9	-	V
Base - Emitter Turn on Voltage	$V_{BE(ON)}$	$I_C=2mA, V_{CE}=5V$ $I_C=10mA, V_{CE}=5V$	0.58 -	0.66 -	0.7 0.77	V
Collector - Base Capacitance	C_{CBO}	$V_{CB}=10V, I_E=0, f=1MHz$	-	-	4.5	pF

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ELECTRICAL CHARACTERISTICS CURVE

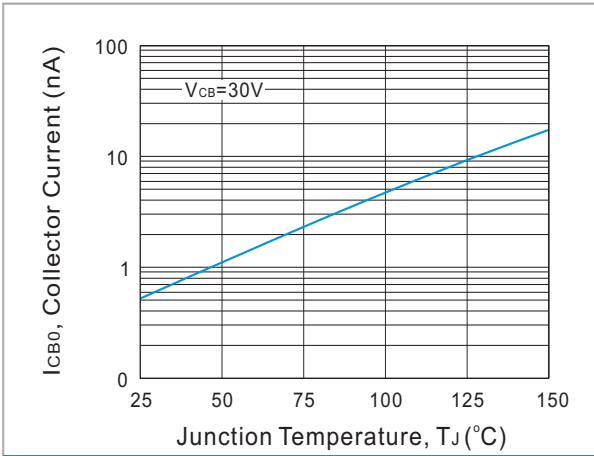


Fig. 1. Typical I_{CBO} vs. Junction Temperature

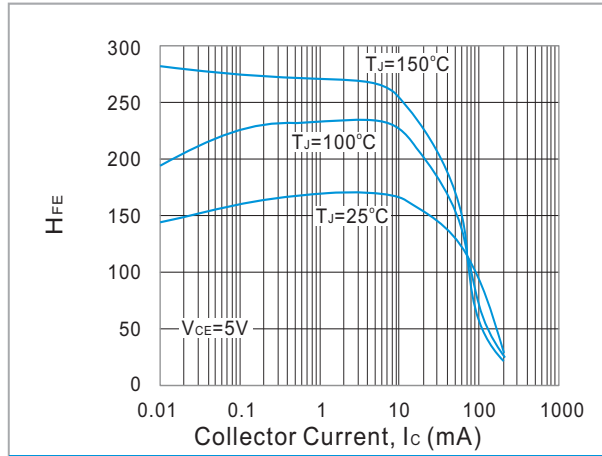


Fig. 2. Typical h_{FE} vs. Collector Current

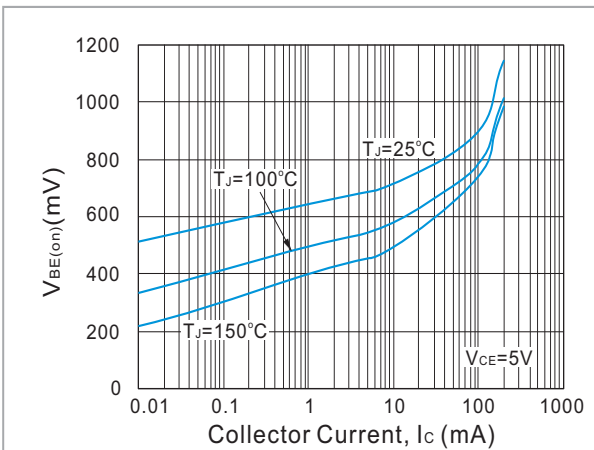


Fig. 3. Typical $V_{BE(on)}$ vs. Collector Current

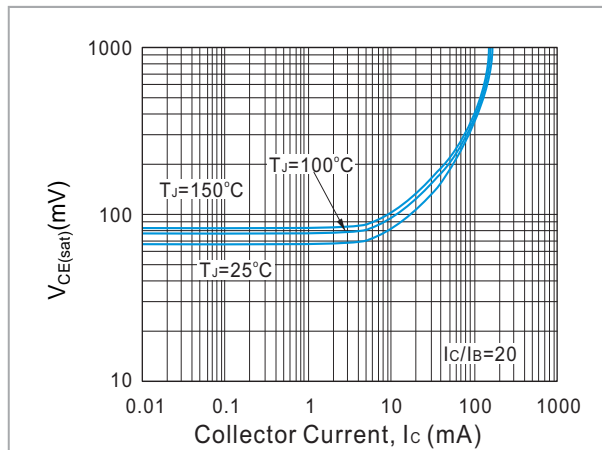


Fig. 4. Typical $V_{CE(sat)}$ vs. Collector Current

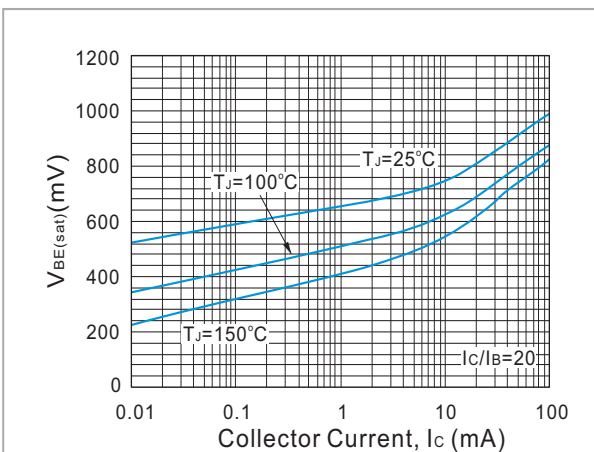


Fig. 5. Typical Capacitances vs. Reverse Voltage

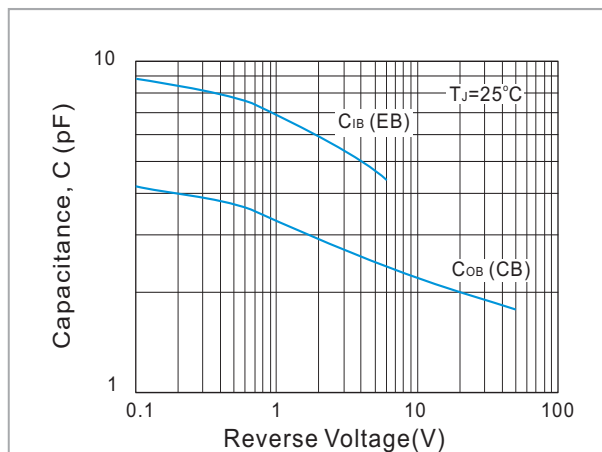


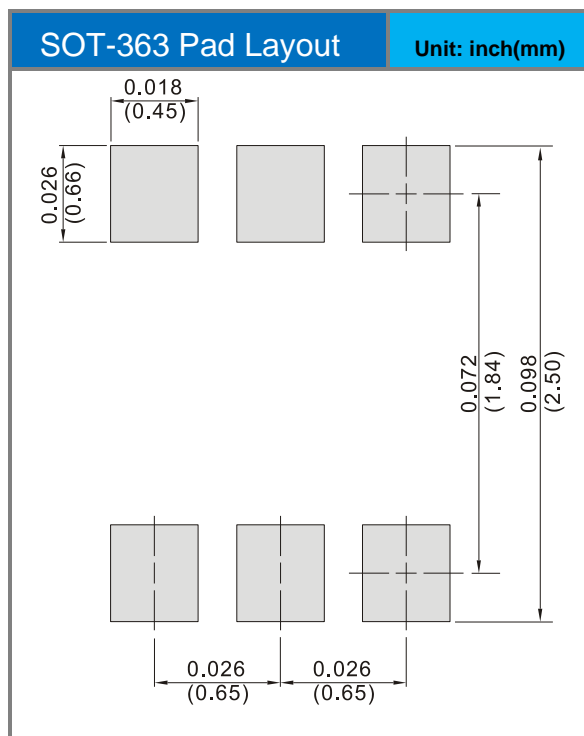
Fig. 6. Typical Capacitances vs. Reverse Voltage

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Product and Packing Information

Part No.	Package Type	Packing Type	Marking
BC846BS-AU	SOT-363	3K pcs / 7" reel	46S
BC846BS-AU	SOT-363	10K pcs / 13" reel	46S
BC847AS-AU	SOT-363	3K pcs / 7" reel	47A
BC847AS-AU	SOT-363	10K pcs / 13" reel	47A

Mounting Pad Layout



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