



# BC846AS

## NPN GENERAL PURPOSE TRANSISTORS

<b>VOLTAGE</b>	<b>65 Volt</b>	<b>POWER</b>	<b>150 mWatt</b>
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### FEATURES

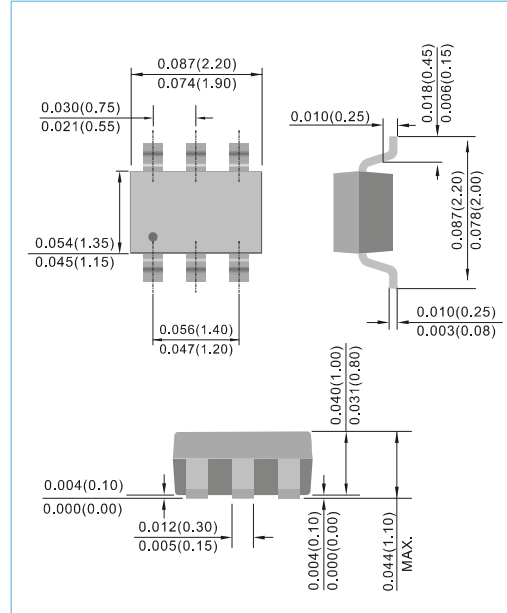
- General purpose amplifier applications
- NPN epitaxial silicon, planar design
- Collector current  $I_C = 100\text{mA}$
- Lead free in compliance with EU RoHS 2011/65/EU directive
- Green molding compound as per IEC61249 Std. . (Halogen Free)

### MECHANICAL DATA

- Case : SOT-363, Plastic
- Terminals : Solderable per MIL-STD-750, Method 2026
- Approx. Weight : 0.0002 ounces, 0.006 grams
- Marking : 46A

### SOT-363

Unit : inch(mm)



### ABSOLUTE RATINGS

PARAMETER	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CE0}$	65	V
Collector - Base Voltage	$V_{CB0}$	80	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 (Note 1)	$P_{TOT}$	150	mW
Thermal Resistance , Junction to Ambient	$R_{\theta JA}$	833	$^{\circ}\text{C/W}$
Junction Temperature	$T_J$	-55 to 150	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	-55 to 150	$^{\circ}\text{C}$

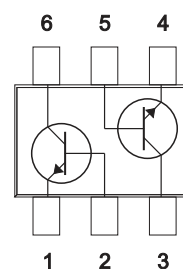
Note 1: Transistor mounted on FR-4 board 70 x 60 x 1mm .



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### ELECTRICAL CHARACTERISTICS

PARAMETER	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	65	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_E=0$	80	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	6.0	-	-	V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=30V, I_E=0$	-	-	15	nA
DC Current Gain	$h_{FE}$	$I_C=10\mu A, V_{CE}=5V$	-	140	-	-
DC Current Gain	$h_{FE}$	$I_C=2.0mA, V_{CE}=5V$	110	180	220	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$	-	-	0.25 0.6	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10mA, I_B=0.5mA$ $I_C=100mA, I_B=5.0mA$	-	0.7 0.9	-	V
Base - Emitter Voltage	$V_{BE(ON)}$	$I_C=2mA, V_{CE}=5.0V$ $I_C=10mA, V_{CE}=5.0V$	0.58 -	0.66 -	0.70 0.77	V
Collector - Base Capacitance	$C_{CBO}$	$V_{CB}=1V, I_E=0, f=1MH$	-	-	4.5	pF





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## ELECTRICAL CHARACTERISTICS CURVE

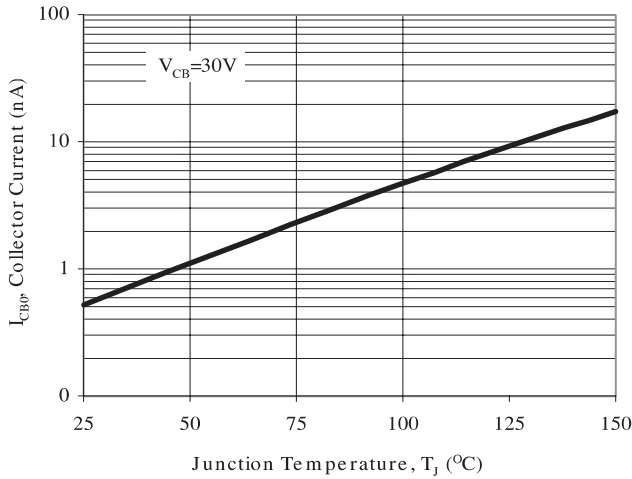


Fig. 1. Typical  $I_{CBO}$  vs. Junction Temperature

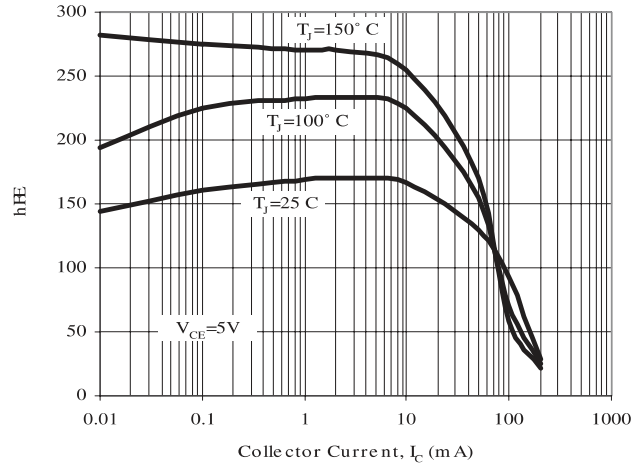


Fig. 2. Typical  $h_{FE}$  vs. Collector Current

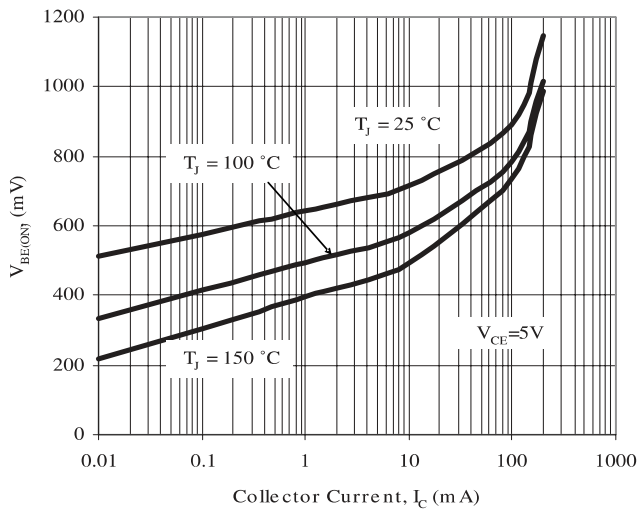


Fig. 3. Typical  $V_{BE(ON)}$  vs. Collector Current

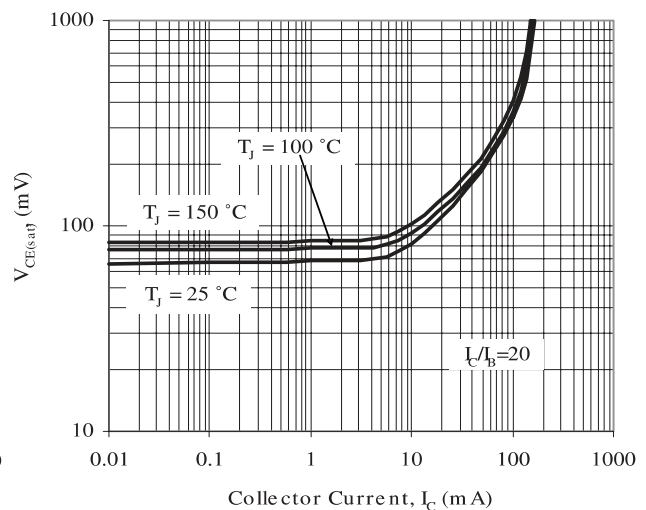


Fig. 4. Typical  $V_{CE(SAT)}$  vs. Collector Current

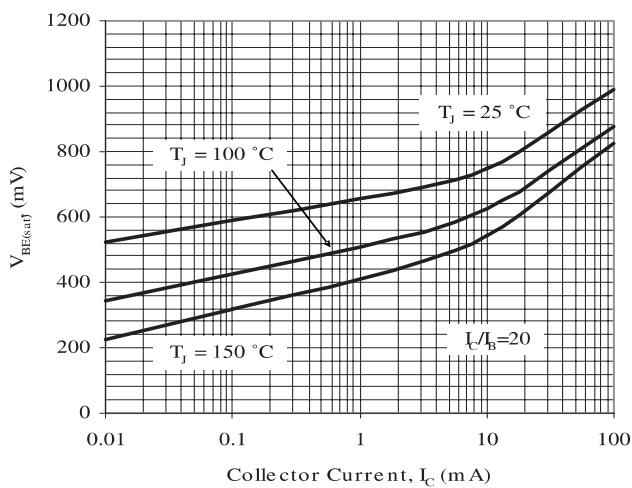


Fig. 5. Typical  $V_{BE(SAT)}$  vs. Collector Current

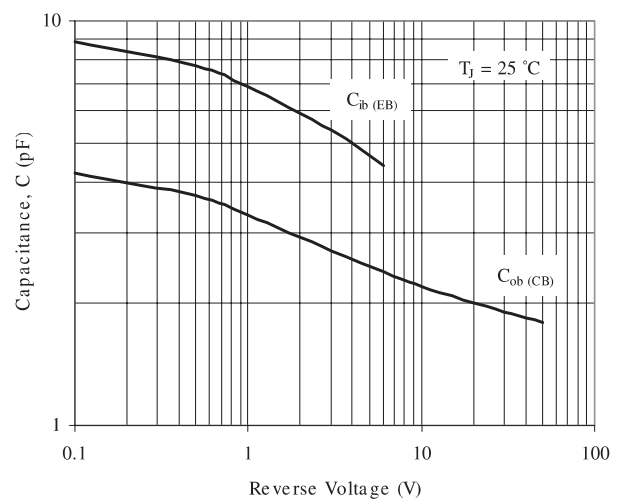
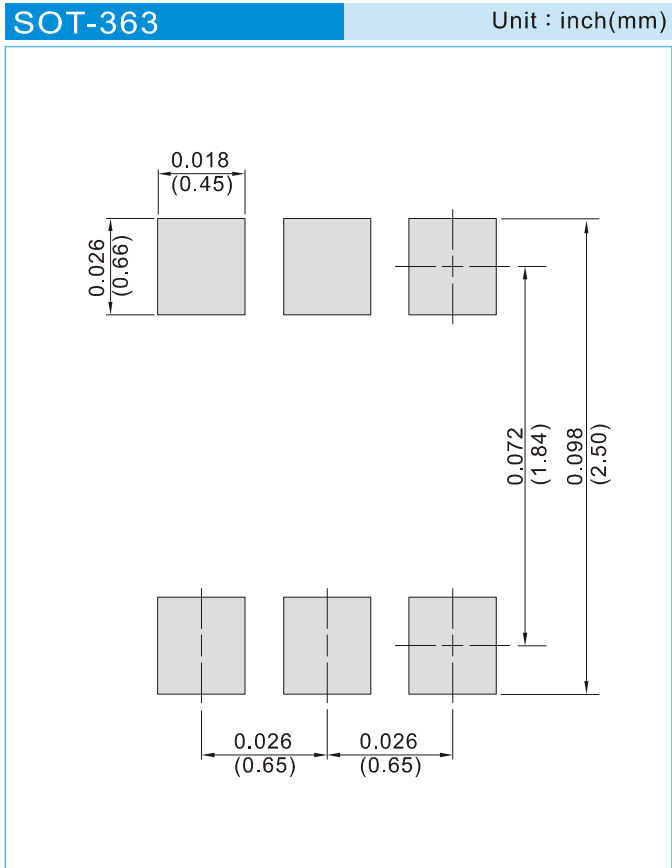


Fig. 6. Typical Capacitances vs. Reverse Voltage



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## MOUNTING PAD LAYOUT



## ORDER INFORMATION

- Packing information  
T/R - 10K per 13" plastic Reel  
T/R - 3K per 7" plastic Reel



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### Part No\_packing code\_Version

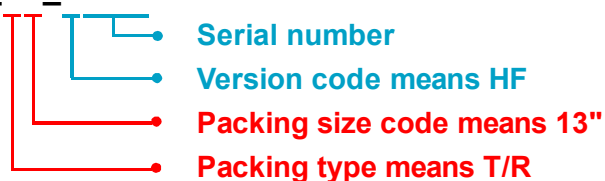
BC846AS\_R1\_00001

BC846AS\_R2\_00001

For example :

**RB500V-40** **R2** **0000**

Part No.



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



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