



# BC846BPN-AU

## DUAL SURFACE MOUNT NPN/PNP TRANSISTORS (COMPLIMENTARY)

This device contains two electrically-isolated complimentary pair (NPN and PNP) general-purpose transistors. This device is ideal for portable applications where board space is at a premium.

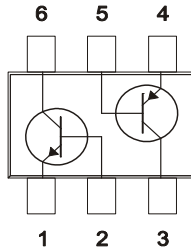
**VOLTAGE** 65 Volt      **POWER** 225 mWatt

### FEATURES

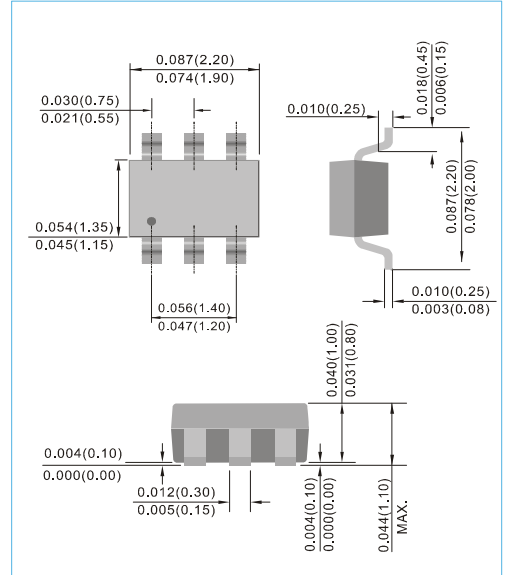
- General purpose amplifier applications
- Collector current  $I_c = 100\text{mA}$
- Lead free in compliance with EU RoHS 2.0
- Green molding compound as per IEC 61249 standard
- AEC-Q101 qualified

### MECHANICAL DATA

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



**SOT-363**      Unit : inch(mm)



## ABSOLUTE RATINGS

### NPN

Parameter	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CEO}$	65	V
Collector - Base Voltage	$V_{CBO}$	80	V
Emitter - Base Voltage	$V_{EBO}$	6.0	V
Collector Current - Continuous	$I_c$	100	mA

### PNP

Parameter	Symbol	Value	Units
Collector - Emitter Voltage	$V_{CEO}$	-65	V
Collector - Base Voltage	$V_{CBO}$	-80	V
Emitter - Base Voltage	$V_{EBO}$	-5.0	V
Collector Current - Continuous	$I_c$	-100	mA



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## THERMAL CHARACTERISTICS

Parameter	Symbol	Value	Units
Max .Total Power Dissipation	$P_{TOT}$	225	mW
Junction Temperature range	$T_J$	-55 to 150	°C
Storage Temperature range	$T_{STG}$	-55 to 150	°C

## ELECTRICAL CHARACTERISTICS

### NPN

Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA$	65	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, V_{EB}=0$	80	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1.0\mu A$	6.0	-	-	V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=30V, I_E=0$	-	-	15	nA
DC Current Gain	$h_{FE}$	$I_C=2.0mA, V_{CE}=5V$	200	-	450	-
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	$V_{BE(SAT)}$	$I_C=10mA, I_B=0.5mA$	0.6	-	0.9	V
Gain-Bandwidth Product	$f_T$	$V_{CE}=5V, I_C=10mA$ $f=100MHz$	100	-	-	MHz

### PNP

Parameter	Symbol	Test Condition	MIN.	TYP.	MAX.	Units
Collector - Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=-10mA$	-65	-	-	V
Collector - Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=-10\mu A, V_{EB}=0$	-80	-	-	V
Emitter - Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=-1.0\mu A$	-5.0	-	-	V
Collector-Base Cutoff Current	$I_{CBO}$	$V_{CB}=-30V, I_E=0$	-	-	-15	nA
DC Current Gain	$h_{FE}$	$I_C=-2.0mA, V_{CE}=-5V$	220	-	475	-
Collector - Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-10mA, I_B=-0.5mA$ $I_C=-100mA, I_B=-5.0mA$	-	-	-0.3 -0.65	V
Base - Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=-10mA, I_B=-0.5mA$	-0.6	-	-0.9	V
Gain-Bandwidth Product	$f_T$	$V_{CE}=-5V, I_C=-10mA$ $f=100MHz$	100	-	-	MHz



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## NPN ELECTRICAL CHARACTERISTICS CURVE

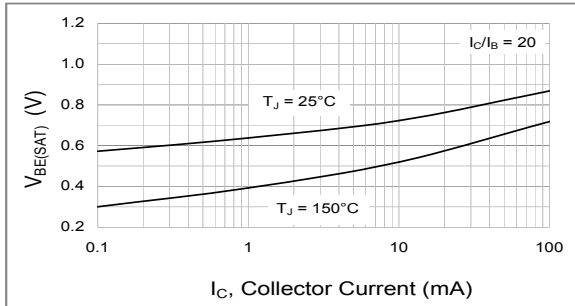


Fig.1 Base-Emitter Saturation Voltage

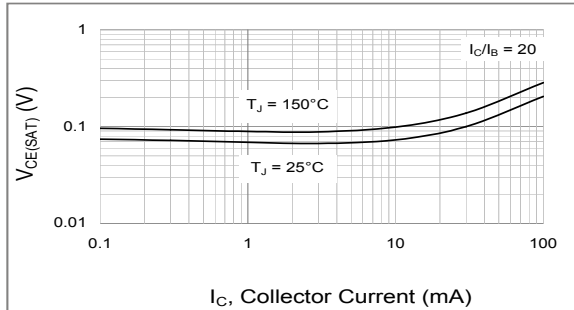


Fig.2 Collector-Emitter Saturation Voltage

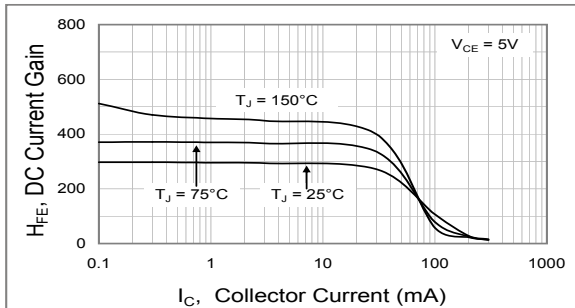


Fig.3 DC Current Gain

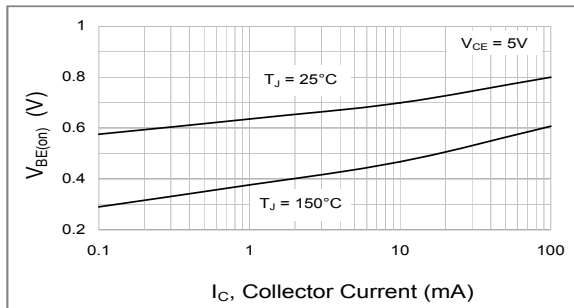


Fig.4 Base-Emitter Voltage

## PNP ELECTRICAL CHARACTERISTICS CURVE

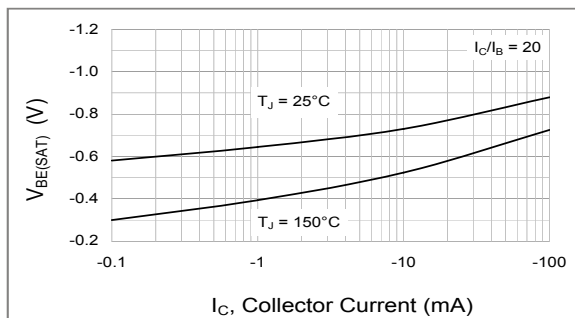


Fig.1 Base-Emitter Saturation Voltage

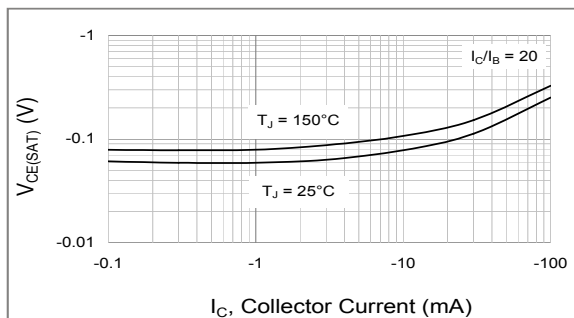


Fig.2 Collector-Emitter Saturation Voltage

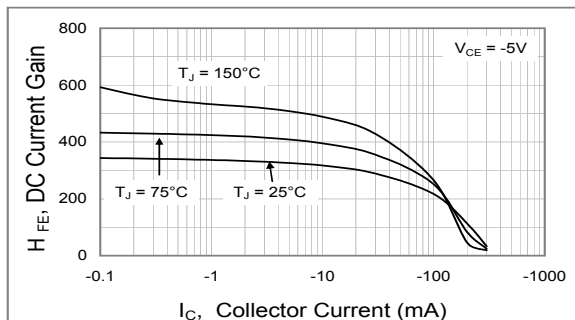


Fig.3 DC Current Gain

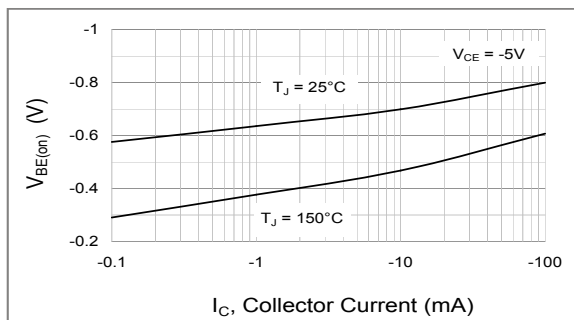
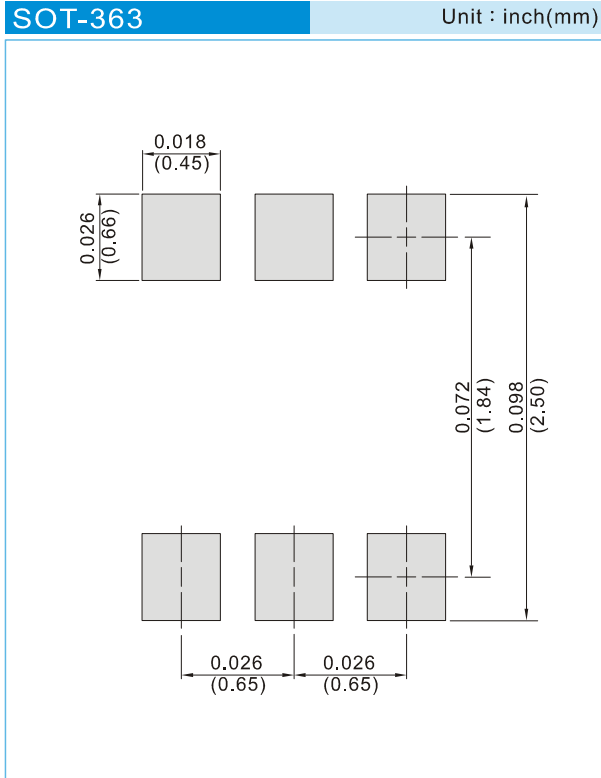


Fig.4 Base-Emitter Voltage



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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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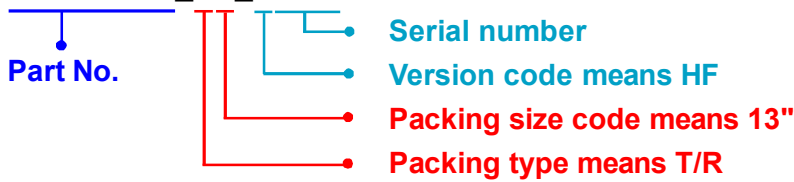
## Part No\_packing code\_Version

BC846BPN-AU\_R1\_000A1

BC846BPN-AU\_R2\_000A1

For example :

**RB500V-40\_R2\_00001**



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
Tape and Ammunition Box (T/B)	<b>A</b>	N/A	<b>0</b>	<b>HF</b>	<b>0</b>	serial number
Tape and Reel (T/R)	<b>R</b>	7"	<b>1</b>	<b>RoHS</b>	<b>1</b>	serial number
Bulk Packing (B/P)	<b>B</b>	13"	<b>2</b>			
Tube Packing (T/P)	<b>T</b>	26mm	<b>X</b>			
Tape and Reel (Right Oriented) (TRR)	<b>S</b>	52mm	<b>Y</b>			
Tape and Reel (Left Oriented) (TRL)	<b>L</b>	PANASERT T/B CATHODE UP (PBCU)	<b>U</b>			
FORMING	<b>F</b>	PANASERT T/B CATHODE DOWN (PBCD)	<b>D</b>			



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