

**BC846PN**

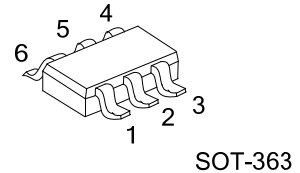
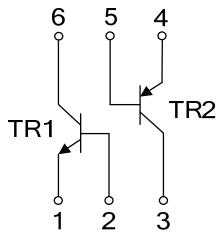
Advance

DUAL TRANSISTOR**SWITCHING AND AMPLIFIER APPLICATION****DESCRIPTION**

The UTC **BC846PN** is a dual transistor, including an NPN transistor and a PNP transistor. This device is ideal for portable applications where board space is at a premium.

FEATURES

* Electrically-isolated complimentary transistor pairs.

EQUIVALENT CIRCUIT

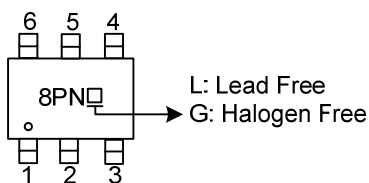
SOT-363

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
BC846PNL-AL6-R	BC846PNG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

Note: Pin Assignment: E: Emitter B: Base C: Collector

BC846PNG-AL6-R 		(1) R: Tape Reel (2) AL6: SOT-363 (3) G: Halogen Free and Lead Free, L: Lead Free
---------------------------	--	---

MARKING

■ **ABSOLUTE MAXIMUM RATING** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	VALUE		UNIT
		TR1	TR2	
Collector-Base Voltage	V_{CBO}	80	-80	V
Collector-Emitter Voltage	V_{CEO}	65	-65	V
Emitter-Base Voltage	V_{EBO}	6	-5	V
Collector Current (DC)	I_C	100	-100	mA
Collector Dissipation (Note 2)	P_D	225		mW
Junction Temperature	T_J	+150		$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-40 ~ +150		$^{\circ}\text{C}$

Notes: 1. Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

2. Transistor mounted on FR-4 board 70×60×1mm.

■ **ELECTRICAL CHARACTERISTICS** ($T_A=25^{\circ}\text{C}$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
TR1						
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=10\mu\text{A}$, $I_E=0$	80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}$, $I_B=0$	65			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$, $I_C=0$	6.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=30\text{V}$, $I_E=0$			15	nA
Collector Cutoff Current	I_{CEO}	$V_{CE}=40\text{V}$			1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=5\text{V}$			100	nA
DC Current Gain	h_{FE}	$V_{CE}=5\text{V}$, $I_C=10\mu\text{A}$		250		
		$V_{CE}=5\text{V}$, $I_C=2\text{mA}$	200		450	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$			0.25	V
		$I_C=100\text{mA}$, $I_B=5.0\text{mA}$			0.6	V
Collector-Base Saturation Voltage	$V_{BE(SAT)}$	$I_C=10\text{mA}$, $I_B=0.5\text{mA}$		0.7		V
		$I_C=100\text{mA}$, $I_B=5.0\text{mA}$		0.9		V
Base-Emitter On Voltage	$V_{BE(ON)}$	$V_{CE}=5.0\text{V}$, $I_C=2\text{mA}$	0.58	0.66	0.7	V
		$V_{CE}=5.0\text{V}$, $I_C=10\text{mA}$			0.77	V
Output Capacitance	C_{OB}	$V_{CB}=10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			4.5	pF
TR2						
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=-10\mu\text{A}$, $I_E=0$	-80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=-10\text{mA}$, $I_B=0$	-65			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=-1\mu\text{A}$, $I_C=0$	-5.0			V
Collector Cut-Off Current	I_{CBO}	$V_{CB}=-30\text{V}$, $I_E=0$			-15	nA
Collector Cutoff Current	I_{CEO}	$V_{CE}=-40\text{V}$			-1	μA
Emitter Cutoff Current	I_{EBO}	$V_{EB}=-5\text{V}$			-100	nA
DC Current Gain	h_{FE}	$V_{CE}=-5\text{V}$, $I_C=-10\mu\text{A}$		250		
		$V_{CE}=-5\text{V}$, $I_C=-2\text{mA}$	200		450	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=-10\text{mA}$, $I_B=-0.5\text{mA}$			-0.30	V
		$I_C=-100\text{mA}$, $I_B=-5.0\text{mA}$			-0.65	V
Collector-Base Saturation Voltage	$V_{BE(SAT)}$	$I_C=-10\text{mA}$, $I_B=-0.5\text{mA}$		-0.7		V
		$I_C=-100\text{mA}$, $I_B=-5.0\text{mA}$		-0.9		V
Base-Emitter On Voltage	$V_{BE(ON)}$	$V_{CE}=-5.0\text{V}$, $I_C=-2\text{mA}$	-0.58		-0.75	V
		$V_{CE}=-5.0\text{V}$, $I_C=-10\text{mA}$			-0.82	V
Output Capacitance	C_{OB}	$V_{CB}=-10\text{V}$, $I_E=0$, $f=1.0\text{MHz}$			4.5	pF

UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. UTC reserves the right to make changes to information published in this document, including without limitation specifications and product descriptions, at any time and without notice. This document supersedes and replaces all information supplied prior to the publication hereof.