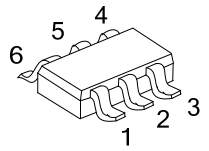
BC846PN

Advance

NPN SILICON TRANSISTOR

SWITCHING AND AMPLIFIER APPLICATION



SOT-363

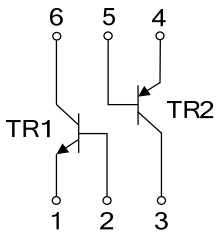
■ DESCRIPTION

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



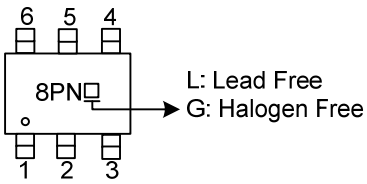
■ ORDERING INFORMATION

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

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

BC846PNG-x-AL6-R (1)Packing Type (2)Package Type (3)Rank (4)Green Package	(1) R: Tape Reel (2) AL6: SOT-363 (3) x: refer to Classification of h_{FE} (4) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless otherwise specified)

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
TR1						
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=10μA, I_E=0	80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=10mA, I_B=0	6.5			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=10μA, I_C=0	6.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=30V, I_E=0			1.5	nA
Collector Cutoff Current	I_{CEO}	V_{CE}=40V				nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=5V			100	nA
DC Current Gain	h_{FE}	V_{CE}=5V, I_C=10μA		90		
		V_{CE}=5V, I_C=2mA	110	180	220	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA			0.25	V
		I_C=100mA,I_B=5.0mA			0.6	V
Collector-Base Saturation Voltage	$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA		0.7		V
		I_C=100mA,I_B=5.0mA		0.9		V
Base-Emitter On Voltage	$V_{BE(ON)}$	V_{CE}=5.0V, I_C=2mA	0.58	0.66	0.7	V
		V_{CE}=5.0V, I_C=10mA			0.77	V
Output Capacitance	C_{OB}	V_{CB}=10V, I_E=0, f=1.0MHz			4.5	pF
TR2						
Collector-Base Breakdown Voltage	BV_{CBO}	I_C=-10μA, I_E=0	-80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	I_C=-10mA, I_B=0	-6.5			V
Emitter-Base Breakdown Voltage	BV_{EBO}	I_E=-1μA, I_C=0	-5.0			V
Collector Cut-Off Current	I_{CBO}	V_{CB}=-30V, I_E=0			-15	nA
Collector Cutoff Current	I_{CEO}	V_{CE}=-40V				nA
Emitter Cutoff Current	I_{EBO}	V_{EB}=-5V			-100	nA
DC Current Gain	h_{FE}	V_{CE}=-5V, I_C=-10μA		90		
		V_{CE}=-5V, I_C=-2mA	110	180	220	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=-10mA, I_B=-0.5mA			-0.30	V
		I_C=-100mA,I_B=-5.0mA			-0.65	V
Collector-Base Saturation Voltage	$V_{BE(SAT)}$	I_C=-10mA, I_B=-0.5mA		-0.7		V
		I_C=-100mA,I_B=-5.0mA		-0.9		V
Base-Emitter On Voltage	$V_{BE(ON)}$	V_{CE}=-5.0V, I_C=-2mA	-0.58		-0.75	V
		V_{CE}=-5.0V, I_C=-10mA			-0.82	V
Output Capacitance	C_{OB}	V_{CB}=-10V, I_E=0, f=1.0MHz			4.5	pF