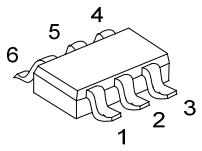
BC846BS **Preliminary** ***DUAL TRANSISTOR***

DUAL NPN SURFACE MOUNT SMALL SIGNAL TRANSISTOR



SOT-363

■ DESCRIPTION

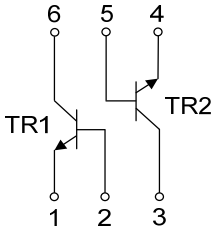
The UTC **BC846BS** is a dual NPN surface mount small signal transistor, it uses UTC's advanced technology to provide customers with high DC current gain, etc.

The UTC **BC846BS** is suitable for switching and AF amplifier applications.

■ FEATURES

* Suitable for automatic insertion in thick and thin-film circuits
* Switching and AF Amplifier Applications

■ EQUIVALENT CIRCUIT



■ ORDERING INFORMATION

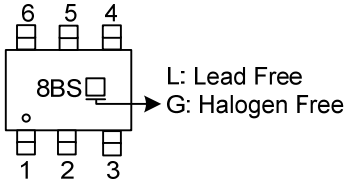
Ordering Number		Package	Pin Assignment						Packing
Lead Free	Halogen Free		1	2	3	4	5	6	
BC846BSL-AL6-R	BC846BSG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

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

BC846BSG-AL6-R
(1)Packing Type
(2)Package Type
(3)Green Package

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

■ MARKING



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

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V_{CBO}	80	V
Collector-Emitter Voltage	V_{CEO}	65	V
Emitter-Base Voltage	V_{EBO}	6	V
Collector Current	I_C	100	mA
Peak Collector Current	I_{CM}	200	mA
Peak Emitter Current	I_{EM}	200	mA
Power Dissipation	P_D	200	mW
Operating Temperature Range	T_J	-40 ~ +150	°C
Storage Temperature	T_{STG}	-40 ~ +150	°C

Note: 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.

■ THERMAL DATA

PARAMETER	SYMBOL	RATINGS	UNIT
Junction to Ambient	θ_{JA}	625	°C/W

Note: Device mounted on FR-4 PCB minimum land pad.

■ ELECTRICAL CHARACTERISTICS (T_A =25°C unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	I_C=10μA, I_B=0	80			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	I_C=10mA, I_B=0	65			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	I_E=10μA, I_C=0	6			V
Collector-Base Cut-off Current	I_{CBO}	V_{CB}=50 V; I_E=0			50	nA
Emitter-Base Cut-off Current	I_{EBO}	V_{EB}=6V; I_C=0			100	nA
ON CHARACTERISTICS						
DC Current Gain	h_{FE}	V_{CE}=5.0V, I_C=2.0mA	200		450	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	I_C=10mA, I_B=0.5mA		50	100	mV
		I_C=100mA, I_B=5.0mA		125	300	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	I_C=10mA, I_B=0.5mA		720	850	mV
		I_C=100mA, I_B=5.0mA		840		mV
Base-Emitter Voltage	$V_{BE(ON)}$	V_{CE}=5.0V, I_C=2.0mA	580	640	700	mV
		V_{CE}=5.0V, I_C=10mA			770	mV
SMALL SIGNAL CHARACTERISTICS						
Output Capacitance	C_{OB}	V_{CB}=10V, I_E=0, f=1.0MHz		3.5		pF
Input Capacitance	C_{IB}	V_{EB}=0.5V, I_C=0, f=1.0MHz		9		pF
Gain Bandwidth Product	f_T	V_{CE}=5.0V, I_C=10mA, f=100MHz	100			MHz
Noise Figure	NF	V_{CE}=5.0V, I_C=0.2mA, R_S=2kΩ, f=10MHz to 15.7KHz		1.9		dB
		V_{CE}=5.0V, I_C=0.2mA, R_S=2kΩ, f=1kHz, B=200Hz		3.1		dB

Note: Short duration pulse test used to minimize self-heating effect.