



## BC846AS

Preliminary

DUAL TRANSISTOR

### DUAL NPN SURFACE MOUNT SMALL SIGNAL TRANSISTOR

#### DESCRIPTION

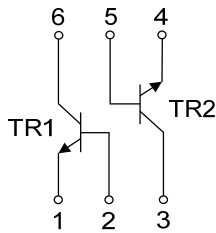
The UTC **BC846AS** is a dual NPN surface mount small signal transistor, it uses UTC's advanced technology to provide customers with high DC current gain, etc.

The UTC **BC846AS** 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



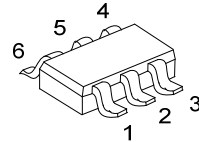
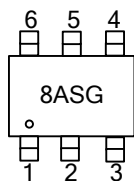
#### ORDERING INFORMATION

Ordering Number	Package	Pin Assignment						Packing
		1	2	3	4	5	6	
BC846ASG-AL6-R	SOT-363	E1	B1	C2	E2	B2	C1	Tape Reel

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

BC846ASG-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
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#### MARKING



SOT-363

■ ABSOLUTE MAXIMUM RATINGS ( $T_A=25^{\circ}\text{C}$  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	$P_D$	325	mW
Operating Temperature Range	$T_J$	$-40 \sim +150$	$^{\circ}\text{C}$
Storage Temperature	$T_{STG}$	$-40 \sim +150$	$^{\circ}\text{C}$

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	$\theta_{JA}$	384.6	$^{\circ}\text{C}/\text{W}$

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

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
OFF CHARACTERISTICS						
Collector-Base Breakdown Voltage	$V_{(BR)CBO}$	$I_C=10\mu A, I_B=0$	80			V
Collector-Emitter Breakdown Voltage	$V_{(BR)CEO}$	$I_C=10mA, I_B=0$	65			V
Emitter-Base Breakdown Voltage	$V_{(BR)EBO}$	$I_E=1\mu A, I_C=0$	6			V
ON CHARACTERISTICS						
DC Current Gain	$h_{FE}$	$V_{CE}=5.0V, I_C=2.0mA$	110		220	
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=10mA, I_B=0.5mA$		90	250	mV
		$I_C=100mA, I_B=5.0mA$		200	600	mV
Base-Emitter Saturation Voltage	$V_{BE(SAT)}$	$I_C=10mA, I_B=0.5mA$		700		mV
		$I_C=100mA, I_B=5.0mA$		900		mV
Base-Emitter Voltage	$V_{BE(ON)}$	$V_{CE}=5.0V, I_C=2.0mA$	580	660	700	mV
		$V_{CE}=5.0V, I_C=10mA$			770	mV
SMALL SIGNAL CHARACTERISTICS						
Collector-Cutoff Current	$I_{CES}$	$V_{CE}=80V$			15	nA
	$I_{CBO}$	$V_{CB}=40V$			15	nA
		$V_{CB}=30V, T_A=150^{\circ}C$			5	$\mu A$
Gain Bandwidth Product	$f_T$	$V_{CE}=5.0V, I_C=10mA, f=100MHz$	100			MHz
Collector-Base Capacitance	$C_{CB}$	$V_{CB}=10V, f=1.0MHz$		2		pF

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

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