



BCV47

Preliminary

NPN SILICON TRANSISTOR

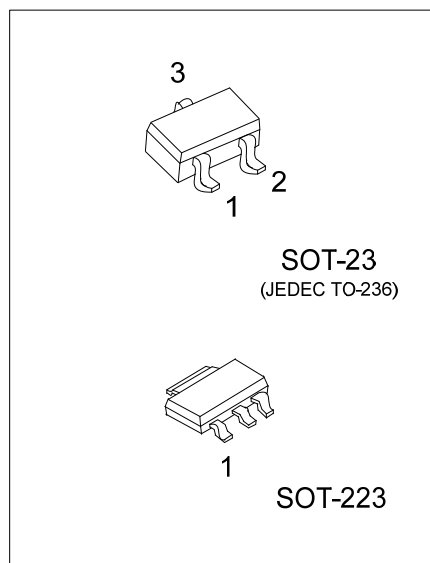
NPN DARLINGTON TRANSISTOR

DESCRIPTION

The UTC **BCV47** is a NPN Darlington transistor manufactured by the epitaxial planar process, epoxy molded in a surface mount package, designed for applications requiring extremely high gain.

FEATURES

- * Medium current: max. 500mA
- * Low voltage: max. 60V



ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BCV47L-AA3-R	BCV47G-AA3-R	SOT-223	B	C	E	Tape Reel
BCV47L-AE3-R	BCV47G-AE3-R	SOT-23	B	E	C	Tape Reel

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

<p>BCV47G-AA3-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Green Package</p>	<p>(1) R: Tape Reel</p> <p>(2) AA3: SOT-223, AE3: SOT-23</p> <p>(3) G: Halogen Free and Lead Free, L: Lead Free</p>
--	---

MARKING

SOT-23	SOT-223

■ 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_{CES}	60	V
Emitter-Base Voltage		V_{EBO}	10	V
Base Current		I_B	100	mA
Collector Current (DC)		I_C	500	mA
Peak Collector Current		I_{CM}	800	mA
Collector Power Dissipation (Note 2)	SOT-223	P_C	600	mW
	SOT-23		250	mW
Junction Temperature		T_J	+150	$^{\circ}\text{C}$
Storage Temperature		T_{STG}	-65 ~ +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 an FR4 printed-circuit board.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	208.3	$^{\circ}\text{C/W}$
	SOT-23		500	$^{\circ}\text{C/W}$
Junction to Case	SOT-223	θ_{JC}	20	$^{\circ}\text{C/W}$
	SOT-23		100	$^{\circ}\text{C/W}$

Note: Device mounted on FR-4 substrate PC board, 2oz copper, with 1inch square copper plate.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV_{CBO}	$I_C=100\mu\text{A}$	80			V
Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C=10\text{mA}$	60			V
Emitter-Base Breakdown Voltage	BV_{EBO}	$I_E=10\mu\text{A}$	10			V
Collector Cut-off Current	I_{CBO}	$V_{CBO}=60\text{V}$, $I_E=0$			100	nA
Emitter Cut-off Current	I_{EBO}	$V_{EB}=10\text{V}$, $I_E=0$			100	nA
DC Current Gain (Note)	h_{FE}	$V_{CE}=5\text{V}$, $I_C=1\text{mA}$	2000			
		$V_{CE}=5\text{V}$, $I_C=10\text{mA}$	4000			
		$V_{CE}=5\text{V}$, $I_C=100\text{mA}$	10000			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			1	V
Base-Emitter Saturation Voltage (Note)	$V_{BE(SAT)}$	$I_C=100\text{mA}$, $I_B=0.1\text{mA}$			1.5	V
Base Emitter On Voltage (Note)	$V_{BE(ON)}$	$I_C=10\text{mA}$, $V_{CE}=5\text{V}$			1.4	V

Note: Pulse test: Pulse Width $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.

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.