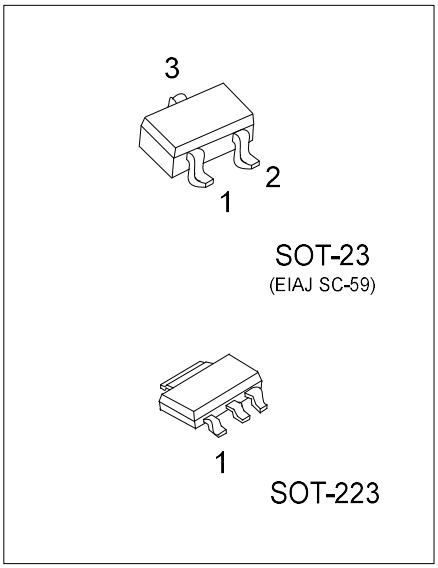
BCV47 **Preliminary** ***NPN SILICON TRANSISTOR***

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

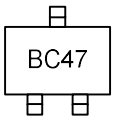
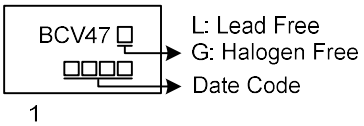
■ ORDERING INFORMATION

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

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

■ MARKING

SOT-23	SOT-223
	

■ ABSOLUATE MAXIUM RATINGS (T_A=25°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	°C
Storage Temperature		T_{STG}	-65 ~ +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 an FR4 printed-circuit board.

■ THERMAL DATA

PARAMETER		SYMBOL	RATINGS	UNIT
Junction to Ambient	SOT-223	θ_{JA}	208.3	°C/W
	SOT-23		500	°C/W
Junction to Case	SOT-223	θ_{Jc}	20	°C/W
	SOT-23		100	°C/W

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

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

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

Note: Pulse test: Pulse Width ≤ 300μs, Duty Cycle ≤ 2%.