



## BTC1510F3

Preliminary

**NPN SILICON TRANSISTOR**

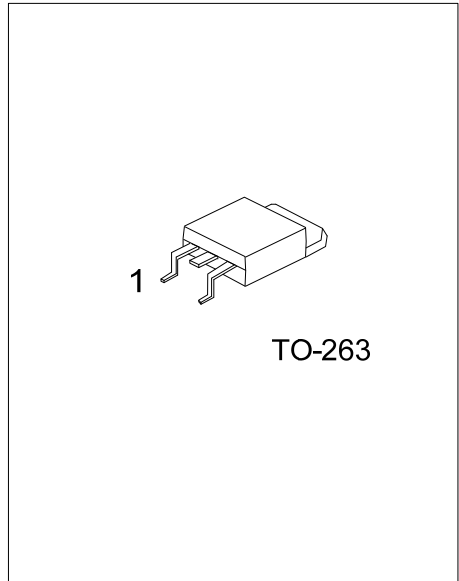
### NPN EPITAXIAL PLANAR TRANSISTOR

#### DESCRIPTION

As a NPN Darlington transistor the UTC **BTC1510F3** is designed for general purpose amplifier and low speed switching application.

#### FEATURES

- \* Very high  $BV_{CEO}$
- \* Very low  $V_{CE(SAT)}$
- \* Very high current gain



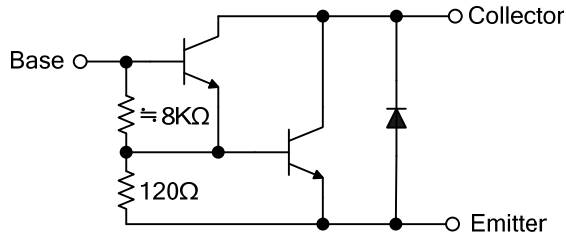
Lead-free: BTC1510F3L  
 Halogen-free: BTC1510F3G

#### ORDERING INFORMATION

Ordering Number			Package	Pin Assignment			Packing
Normal	Lead Free	Halogen Free		1	2	3	
BTC1510F3-TQ2-R	BTC1510F3L-TQ2-R	BTC1510F3G-TQ2-R	TO-263	B	C	E	Tape Reel
BTC1510F3-TQ2-T	BTC1510F3L-TQ2-T	BTC1510F3G-TQ2-T	TO-263	B	C	E	Tube

<p>BTC1510F3L-TQ2-R</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Plating</p>	<p>(1) R: Tape Reel, T: Tube</p> <p>(2) TQ2: TO-263</p> <p>(3) G: Halogen Free, L: Lead Free, Blank: Pb/Sn</p>
---	--

■ EQUIVALENT CIRCUIT



### ■ ABSOLUTE MAXIMUM RATING (T<sub>a</sub>=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Collector-Base Voltage	V <sub>CBO</sub>	150	V
Collector-Emitter Voltage	V <sub>CEO</sub>	150	V
Emitter-Base Voltage	V <sub>EBO</sub>	5	V
Collector Current	DC	10	A
	Pulse(Note 2)	15	
Collector Dissipation	T <sub>a</sub> =25°C	2	W
	T <sub>C</sub> =25°C	60	
Junction Temperature	T <sub>J</sub>	150	°C
Storage Temperature	T <sub>STG</sub>	-55 ~ +150	°C

Note: 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. Pulse test: Pulse Width=100ms

### ■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	BV <sub>CBO</sub>	I <sub>C</sub> =100μA, I <sub>E</sub> =0	150			V
Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	I <sub>C</sub> =1mA, I <sub>B</sub> =0	150			V
Base-Emitter Turn-On Voltage (Note)	V <sub>BE(ON)</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =5A			2.8	V
		V <sub>CE</sub> =3V, I <sub>C</sub> =10A			4.5	
	V <sub>FEC</sub>	I <sub>C</sub> =5A			3	V
Collector Cutoff Current	I <sub>CBO</sub>	V <sub>CB</sub> =150V, I <sub>E</sub> =0			200	μA
Collector Cutoff Current	I <sub>CEO</sub>	V <sub>CE</sub> =150V, I <sub>E</sub> =0			200	μA
Emitter Cutoff Current	I <sub>EBO</sub>	V <sub>EB</sub> =5V, I <sub>C</sub> =0			2	mA
<b>ON CHARACTERISTICS</b>						
DC Current Gain (Note)	h <sub>FE</sub>	V <sub>CE</sub> =3V, I <sub>C</sub> =5A	2		20	K
		V <sub>CE</sub> =3V, I <sub>C</sub> =10A	100			
Base-Emitter Saturation Voltage(Note)	V <sub>BE(SAT)</sub>	I <sub>C</sub> =5A, I <sub>B</sub> =5mA			2	V
Collector-Emitter Saturation Voltage (Note)	V <sub>CE(SAT)</sub>	I <sub>C</sub> =5A, I <sub>B</sub> =10mA			1.5	V
		I <sub>C</sub> =10A, I <sub>B</sub> =100mA			3	
		I <sub>C</sub> =5A, I <sub>B</sub> =2.5mA			2	

Note: Pulse test: Pulse Width ≦ 380μs, Duty Cycle ≦ 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. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.