



## BTC1510

## NPN SILICON TRANSISTOR

### NPN EPITAXIAL PLANAR TRANSISTOR

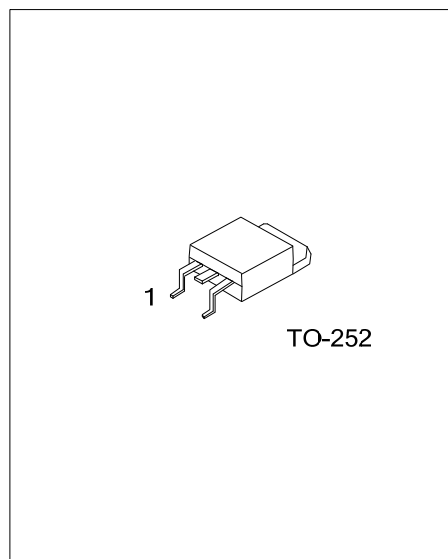
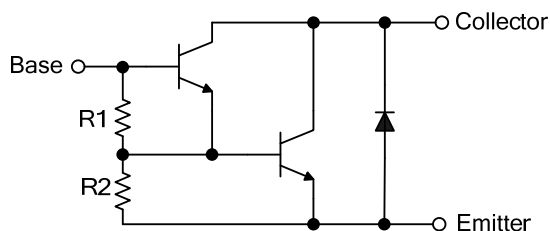
#### DESCRIPTION

As a NPN Darlington transistor the UTC **BTC1510** 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

#### EQUIVALENT CIRCUIT



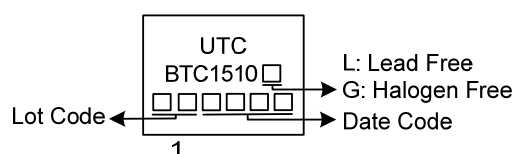
#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BTC1510L-TN3-R	BTC1510G-TN3-R	TO-252	B	C	E	Tape Reel

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

<b>BTC1510G-TN3-R</b>	(1)Packing Type	(1) R: Tape Reel
	(2)Package Type	(2) TN3: TO-252
	(3)Green Package	(3) G: Halogen Free and Lead Free, L: Lead Free

#### MARKING



■ ABSOLUTE MAXIMUM RATING ( $T_A=25^{\circ}\text{C}$ , unless otherwise specified)

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CBO}$	150	V
Collector-Emitter Voltage		$V_{CEO}$	150	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	10	A
	Pulse(Note 2)		15	A
Collector Dissipation	$T_A=25^{\circ}\text{C}$	$P_D$	1.1	W
	$T_C=25^{\circ}\text{C}$		44	W
Junction Temperature		$T_J$	150	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +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. Pulse test: Pulse Width=100ms

■ ELECTRICAL CHARACTERISTICS

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Base Breakdown Voltage	$BV_{CBO}$	$I_C=100\mu\text{A}$ , $I_E=0$	150			V
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=5\text{mA}$ , $I_B=0$	150			V
Base-Emitter Turn-On Voltage (Note)	$V_{BE(ON)}$	$V_{CE}=3\text{V}$ , $I_C=5\text{A}$			2.8	V
		$V_{CE}=3\text{V}$ , $I_C=10\text{A}$			4.5	V
Forward Voltage	$V_{FEC}$	$I_C=5\text{A}$			3	V
Collector Cutoff Current	$I_{CBO}$	$V_{CB}=150\text{V}$ , $I_E=0$			200	$\mu\text{A}$
Collector Cutoff Current	$I_{CEO}$	$V_{CE}=150\text{V}$ , $I_E=0$			200	$\mu\text{A}$
Emitter Cutoff Current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0$			2	mA
<b>ON CHARACTERISTICS</b>						
DC Current Gain (Note)	$h_{FE}$	$V_{CE}=3\text{V}$ , $I_C=5\text{A}$	2		20	K
		$V_{CE}=3\text{V}$ , $I_C=10\text{A}$	100			
Base-Emitter Saturation Voltage(Note)	$V_{BE(SAT)}$	$I_C=5\text{A}$ , $I_B=5\text{mA}$			2	V
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=5\text{A}$ , $I_B=10\text{mA}$			1.5	V
		$I_C=10\text{A}$ , $I_B=100\text{mA}$			3	V
		$I_C=5\text{A}$ , $I_B=2.5\text{mA}$			2	V

Note: Pulse test: Pulse Width  $\leq 380\mu\text{s}$ , Duty Cycle  $\leq 2\%$

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