



## TIP102

## NPN SILICON TRANSISTOR

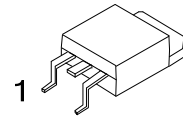
### NPN EPITAXIAL TRANSISTOR

#### DESCRIPTION

The UTC **TIP102** is designed for using in general purpose amplifier and switching applications.

#### FEATURES

- \* Low  $V_{CE(SAT)}$
- \* High Current Gain
- \* Complementary to TIP107



TO-252

#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TIP102L-TN3-R	TIP102G-TN3-R	TO-252	B	C	E	Tape Reel

<p>TIP102L-TA3-T</p> <p>(1) Packing Type</p> <p>(2) Package Type</p> <p>(3) Lead Free</p>	<p>(1) R: Tape Reel</p> <p>(2) TN3: TO-252</p> <p>(3) G: Halogen Free, L: Lead Free</p>
---	---

■ ABSOLUTE MAXIMUM RATING ( $T_C=25^{\circ}\text{C}$ )

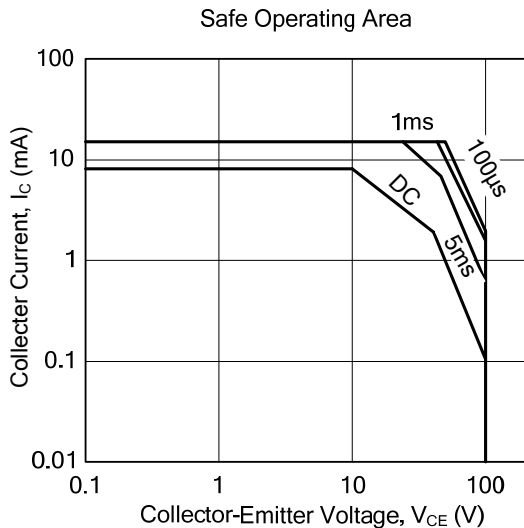
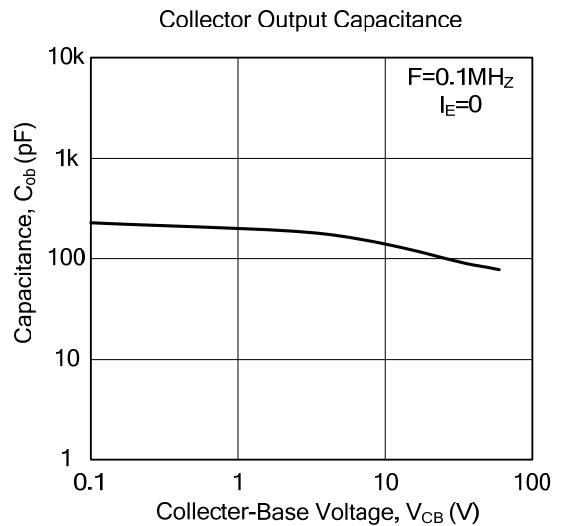
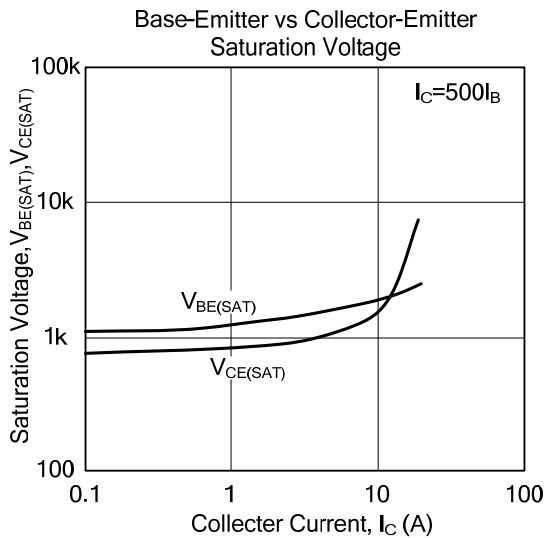
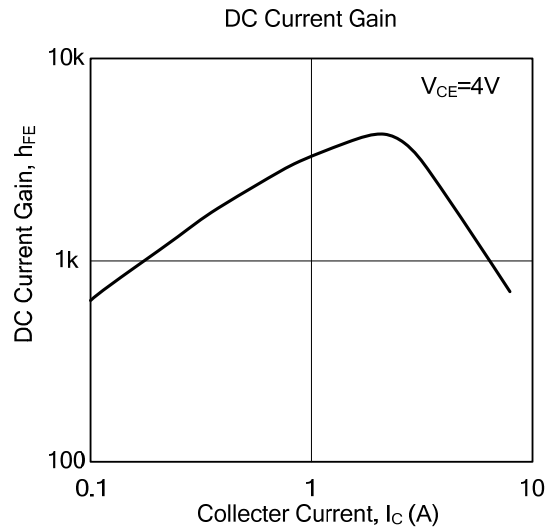
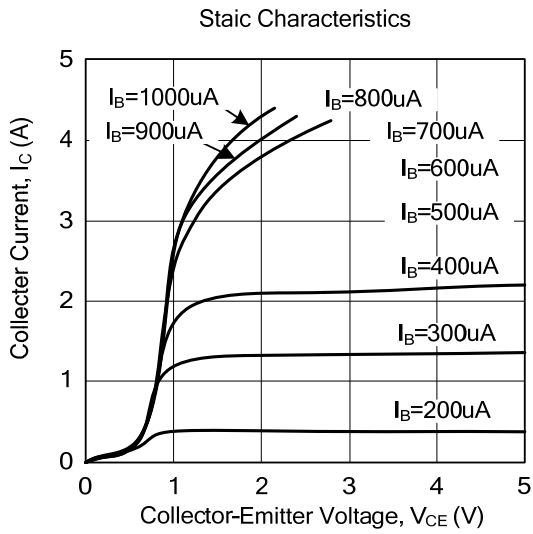
PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CB0}$	100	V
Collector-Emitter Voltage		$V_{CE0}$	100	V
Emitter-Base Voltage		$V_{EB0}$	5	V
Collector Current	DC	$I_C$	8	A
	Pulse	$I_{CP}$	15	A
Base Current	DC	$I_B$	1	A
Collector Power Dissipation		$P_C$	80	W
Junction Temperature		$T_J$	150	$^{\circ}\text{C}$
Storage Temperature		$T_{STG}$	-65~+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.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Sustaining Voltage	$V_{CE0(SUS)}$	$I_C=30\text{mA}$ , $I_B=0\text{A}$	100			V
Collector-Base Cut-Off Current	$I_{CBO}$	$V_{CB}=100\text{V}$ , $I_E=0\text{A}$			50	$\mu\text{A}$
Collector-Emitter Cut-Off Current	$I_{CEO}$	$V_{CE}=50\text{V}$ , $I_B=0\text{A}$			50	$\mu\text{A}$
Emitter-Base Cut-Off Current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0\text{A}$			2	mA
<b>ON CHARACTERISTICS</b>						
DC Current Gain	$h_{FE1}$	$V_{CE}=4\text{V}$ , $I_C=3\text{A}$	1000		20000	
	$h_{FE2}$	$V_{CE}=4\text{V}$ , $I_C=8\text{A}$	200			
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=3\text{A}$ , $I_B=6\text{mA}$			2	V
		$I_C=8\text{A}$ , $I_B=80\text{mA}$			2.5	V
Base-Emitter ON Voltage	$V_{BE(ON)}$	$V_{CE}=4\text{V}$ , $I_C=8\text{A}$			2.8	V
<b>SMALL-SIGNAL CHARACTERISTICS</b>						
Output Capacitance	$C_{OB}$	$V_{CB}=10\text{V}$ , $I_E=0\text{A}$ , $f=0.1\text{MHZ}$			300	pF

## ■ TYPICAL CHARACTERISTICS



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.