



## TIP102

## NPN SILICON TRANSISTOR

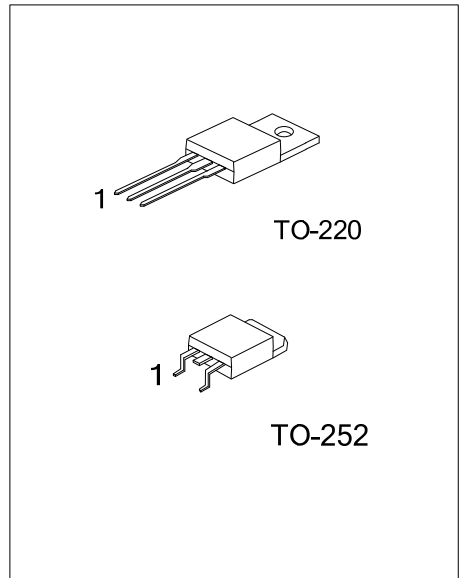
### NPN EPITAXIAL TRANSISTOR

#### 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



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TIP102L-TA3-T	TIP102G-TA3-T	TO-220	B	C	E	Tube
TIP102L-TN3-R	TIP102G-TN3-R	TO-252	B	C	E	Tape Reel

<p>TIP102L-TA3-T</p> <p>(1) Packing Type (2) Package Type (3) Lead Free</p>	<p>(1) T: Tube, R: Tape Reel (2) TN3: TO-252, TA3: TO-220 (3) G: Halogen Free, L: Lead Free</p>
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■ ABSOLUTE MAXIMUM RATING ( $T_C=25^\circ\text{C}$ )

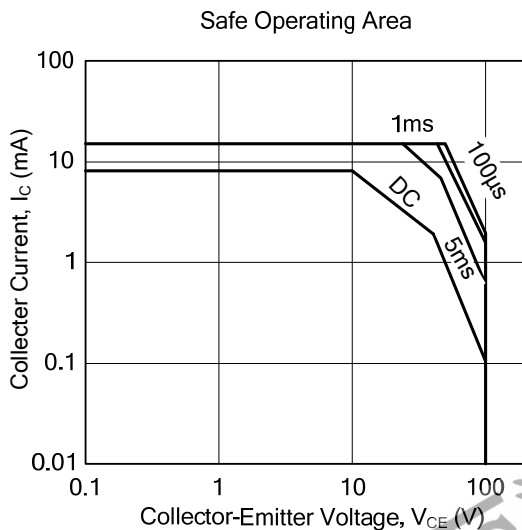
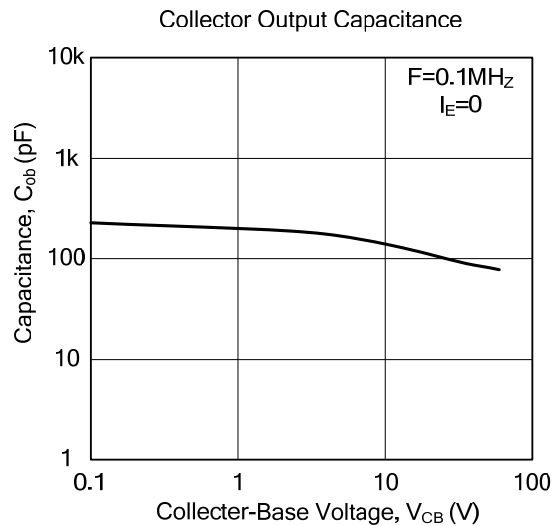
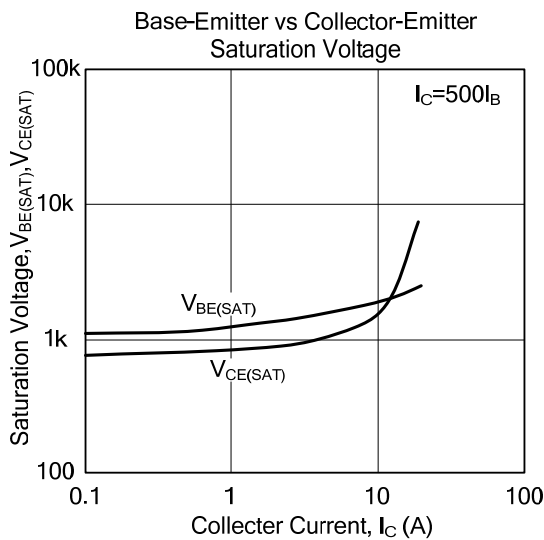
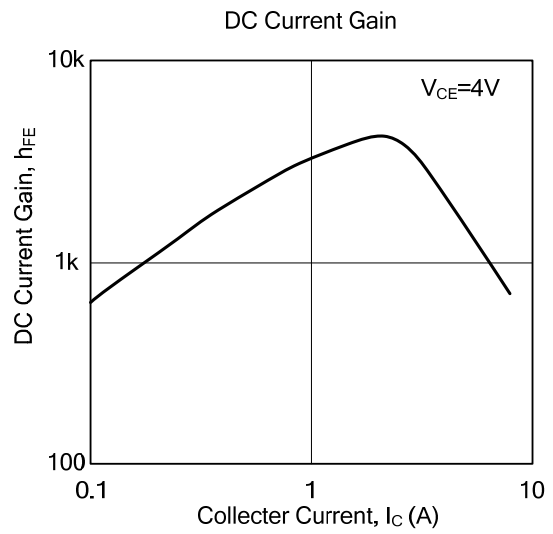
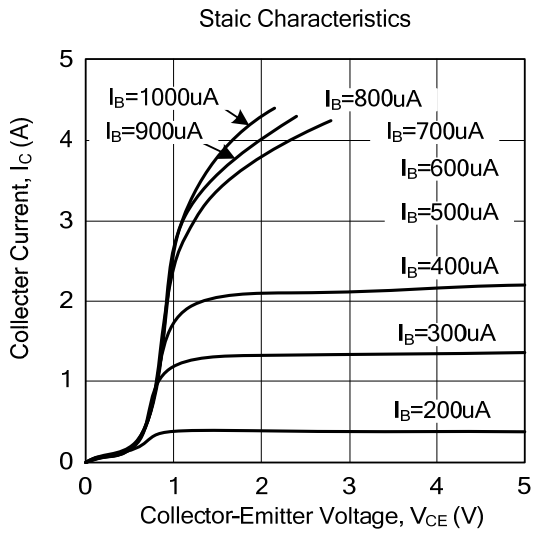
PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		$V_{CB0}$	100	V
Collector-Emitter Voltage		$V_{CEO}$	100	V
Emitter-Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	8	A
	Pulse	$I_{CP}$	15	A
Base Current	DC	$I_B$	1	A
Collector Power Dissipation	TO-220	$P_C$	80	W
	TO-252		41	
Junction Temperature		$T_J$	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	$V_{CEO(SUS)}$	$I_C=30\text{mA}$ , $I_B=0\text{A}$	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



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