



# TIP122

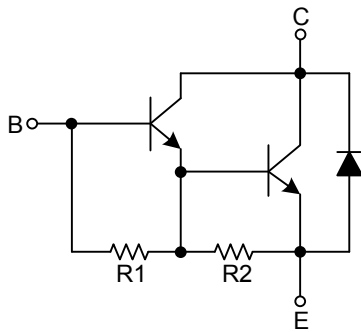
## NPN SILICON TRANSISTOR

### NPN EPITAXIAL TRANSISTOR

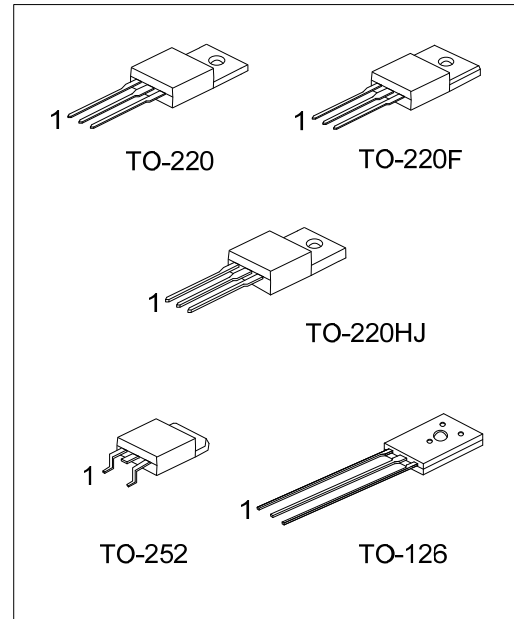
■ DESCRIPTION

The UTC **TIP122** is a NPN epitaxial transistor, designed for use in general purpose amplifier low-speed switching applications.

■ EQUIVALENT TEST



( $R_1 \approx 7k\Omega$ ,  $R_2 \approx 0.2k\Omega$ )



■ ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TIP122L-T60-K	TIP122G-T60-K	TO-126	E	C	B	Bulk
TIP122L-TA3-T	TIP122G-TA3-T	TO-220	B	C	E	Tube
TIP122L-TF3-T	TIP122G-TF3-T	TO-220F	B	C	E	Tube
TIP122L-T80-T	TIP122G-T80-T	TO-220HJ	B	C	E	Tube
TIP122L-TN3-R	TIP122G-TN3-R	TO-252	B	C	E	Tape Reel

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

<p>TIP122G-T60-K</p>	<p>(1) K: Bulk, T: Tube, R: Tape Reel                  (2) T60: TO-126, TA3: TO-220, TF3: TO-220F                  T80: TO-220HJ, TN3: TO-252                  (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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■ MARKING

TO-220 / TO-220F / TO-220HJ / TO-252	TO-126

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

PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		$V_{CBO}$	100	V
Collector to Emitter Voltage		$V_{CEO}$	100	V
Emitter to Base Voltage		$V_{EBO}$	5	V
IC Collector Current		$I_C$	5	A
Power Dissipation ( $T_C=25^\circ\text{C}$ )	TO-126	$P_D$	10	W
	TO-220		65	W
	TO-220HJ			
	TO-220F			
	TO-252			
Junction Temperature		$T_J$	+150	$^\circ\text{C}$
Storage Temperature		$T_{STG}$	-55 ~ +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.

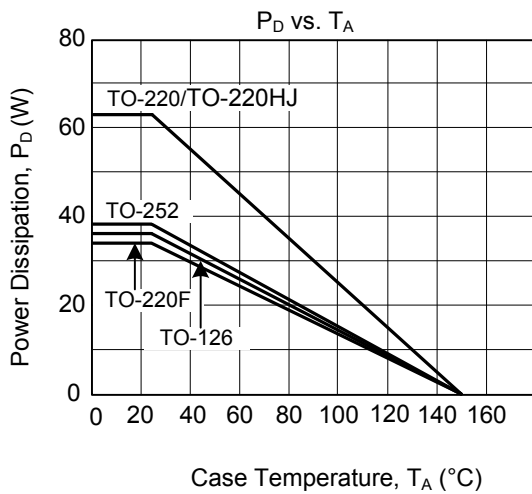
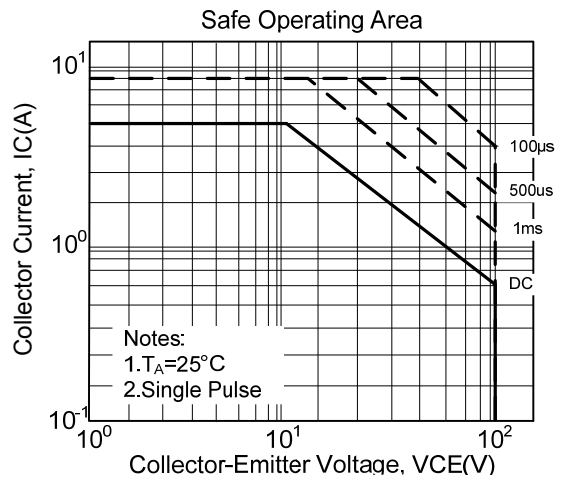
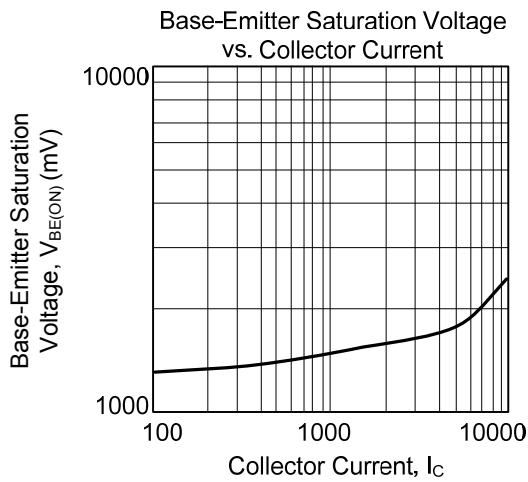
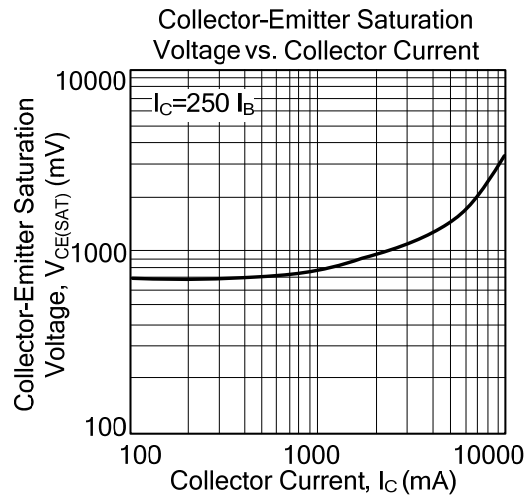
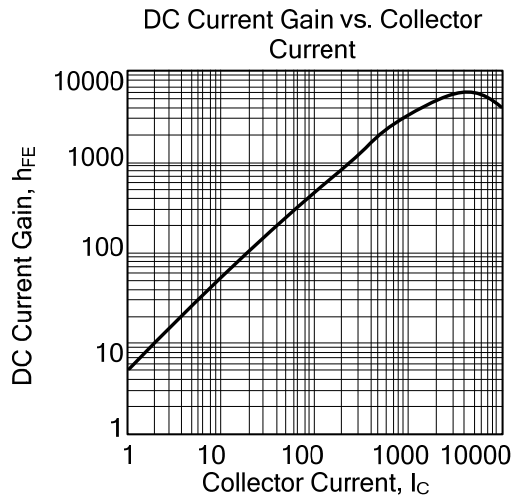
■ THERMAL DATA

PARAMETER		SYMBOL	RATING	UNIT		
Junction to Ambient	TO-126	$\theta_{JA}$	89	$^\circ\text{C/W}$		
	TO-220		62.5	$^\circ\text{C/W}$		
	TO-220F					
	TO-220HJ					
	TO-252				80	$^\circ\text{C/W}$
Junction to Case	TO-126	$\theta_{JC}$	12.5	$^\circ\text{C/W}$		
	TO-220		1.92	$^\circ\text{C/W}$		
	TO-220HJ					
	TO-220F				4.17	$^\circ\text{C/W}$
	TO-252				3.29	$^\circ\text{C/W}$

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector-Emitter Breakdown Voltage	$BV_{CEO}$	$I_C=100\text{mA}$	100			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)1}$	$I_C=3\text{A}, I_B=12\text{mA}$			2	V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)2}$	$I_C=5\text{A}, I_B=20\text{mA}$			4	V
Base-Emitter Saturation Voltage	$V_{BE(ON)}$	$V_{CE}=3\text{V}, I_C=3\text{A}$			2.5	V
DC Current Gain	$h_{FE}$	$I_C=500\text{mA}, V_{CE}=3\text{V}$	1000			
		$I_C=3\text{A}, V_{CE}=3\text{V}$	1000			
Collector Cut-Off Current	$I_{CBO}$	$V_{CB}=100\text{V}$			200	$\mu\text{A}$
Collector-Cut-Off Current	$I_{CEO}$	$V_{CE}=50\text{V}$			500	$\mu\text{A}$
Emitter Cut-Off Current	$I_{EBO}$	$V_{EB}=5\text{V}$			2	mA

### TYPICAL CHARACTERISTICS



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