



## TIP112

## NPN SILICON TRANSISTOR

### NPN EPITAXIAL SILICON DARLINGTON TRANSISTOR

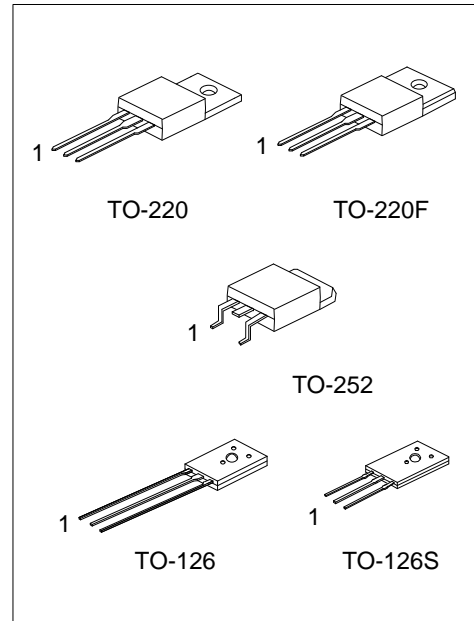
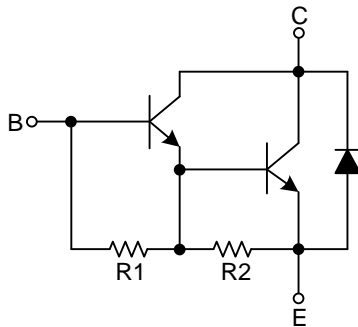
#### DESCRIPTION

The UTC TIP112 is designed for such applications as: DC/DC converters supply line switching, battery charger, LCD backlighting, peripheral drivers, Driver in low supply voltage applications (e.g. lamps and LEDs) and inductive load driver (e.g. relays, buzzers and motors).

#### FEATURES

- \* High DC current gain :  $h_{FE} = 1000 @ V_{CE}=4V, I_C=1A$  (Min.)
- \* Low collector-emitter saturation voltage

#### EQUIVALENT TEST (R<sub>1</sub>≈10kΩ, R<sub>2</sub>≈0.6kΩ)



#### ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
TIP112L-TA3-T	TIP112G-TA3-T	TO-220	B	C	E	Tube
TIP112L-TF3-T	TIP112G-TF3-T	TO-220F	B	C	E	Tube
TIP112L-TN3-R	TIP112G-TN3-R	TO-252	B	C	E	Tape Reel
TIP112L-T60-K	TIP112G-T60-K	TO-126	E	C	B	Bulk
TIP112L-T6S-K	TIP112G-T6S-K	TO-126S	E	C	B	Bulk

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

<p>TIP112G-TA3-T</p>	<p>(1) T: Tube, R: Tape Reel, K: Bulk  (2) TA3: TO-220, TF3: TO-220F, TN3: TO-252  T60: TO-126, T6S: TO-126S  (3) G: Halogen Free and Lead Free, L: Lead Free</p>
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## MARKING

TO-220 / TO-220F / TO-252	TO-126 / TO-126S
<p>UTC TIP122 □ □□□□ □ □□□□□□</p> <p>Lot Code ←</p> <p>→ L: Lead Free → G: Halogen Free → Date Code</p> <p>1</p>	<p>UTC □□□□ TIP122 □ □</p> <p>→ Date Code → L: Lead Free → G: Halogen Free</p> <p>1</p>

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

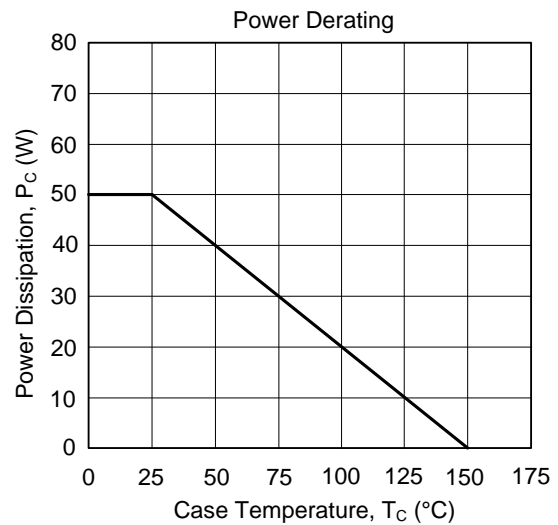
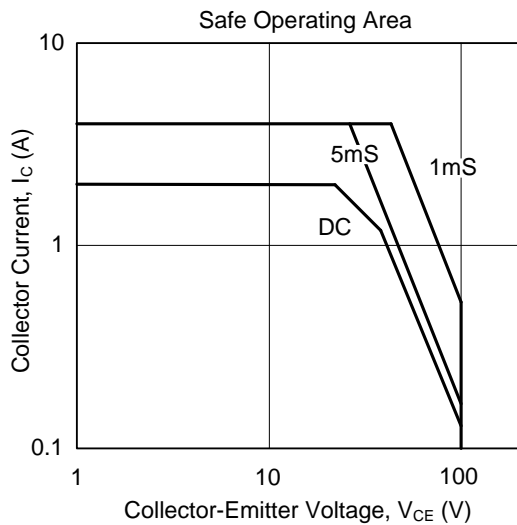
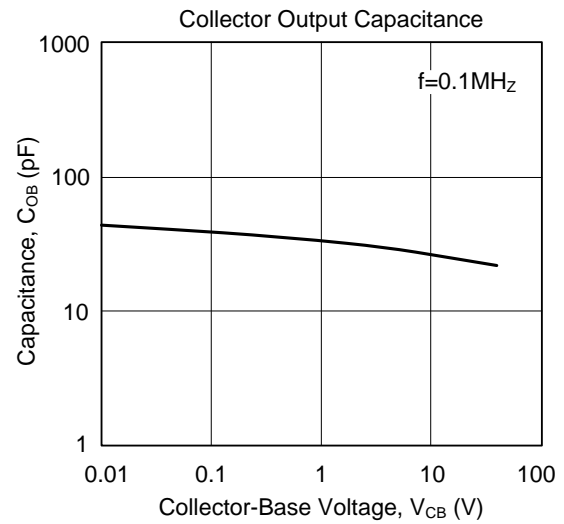
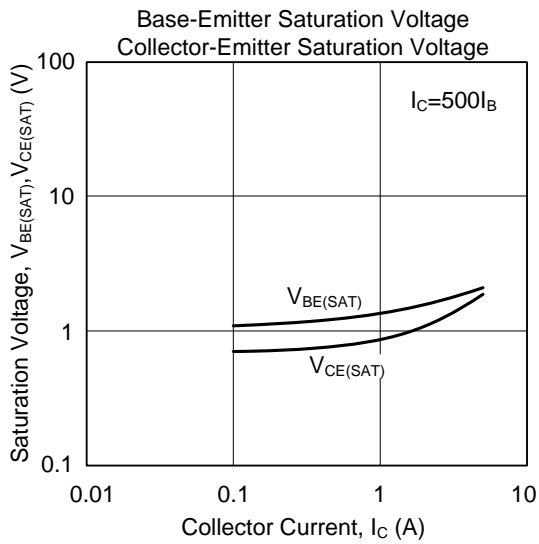
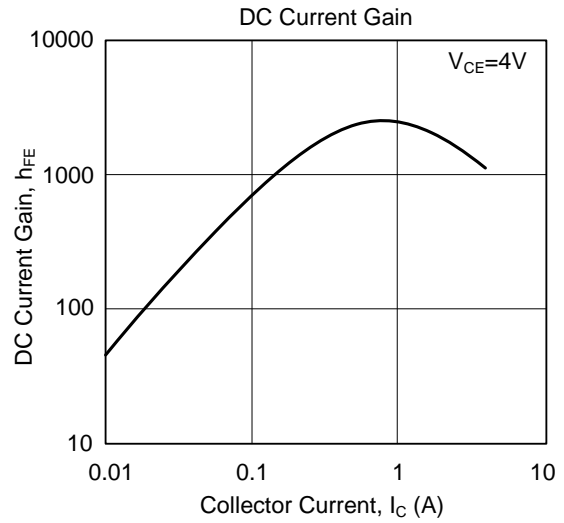
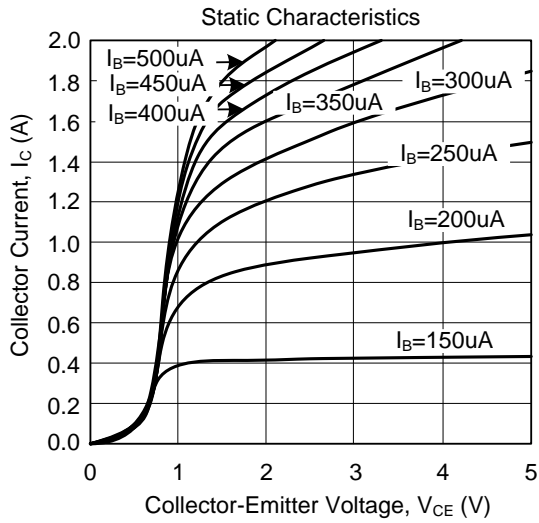
PARAMETER		SYMBOL	RATINGS	UNIT
Collector to Base Voltage		$V_{CBO}$	100	V
Collector to Emitter Voltage		$V_{CEO}$	100	V
Emitter to Base Voltage		$V_{EBO}$	5	V
Collector Current	DC	$I_C$	2	A
	Peak	$I_{CM}$	4	
Base Current (DC)		$I_B$	50	mA
Collector Dissipation	TO-220	$P_C$	40	W
	TO-220F		15	
	TO-252		25	
	TO-126/TO-126S		10	
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 Breakdown Voltage	$V_{CEO(SUS)}$	$I_C=30\text{mA}$ , $I_B=0\text{A}$	100			V
Collector-Emitter Saturation Voltage	$V_{CE(SAT)}$	$I_C=2\text{A}$ , $I_B=8\text{mA}$			2.5	V
Base-Emitter Turn-On Voltage	$V_{BE(ON)}$	$V_{CE}=4\text{V}$ , $I_C=2\text{A}$			2.8	
Collector-Base Cut-Off Current	$I_{CBO}$	$V_{CB}=100\text{V}$ , $I_E=0\text{A}$			1	mA
Collector-Emitter Cut-Off Current	$I_{CEO}$	$V_{CE}=50\text{V}$ , $V_B=0\text{A}$			2	mA
Emitter-Base Cut-Off Current	$I_{EBO}$	$V_{EB}=5\text{V}$ , $I_C=0\text{A}$			2	mA
DC Current Gain	$h_{FE}$	$V_{CE}=4\text{V}$ , $I_C=1\text{A}$	1000			
		$V_{CE}=4\text{V}$ , $I_C=2\text{A}$	500			
Collector Capacitance	$C_{OB}$	$V_{CB}=10\text{V}$ , $I_E=0\text{A}$ , $f=0.1\text{MHz}$			100	pF

## ■ TYPICAL CHARACTERISTICS



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