



TIP31C

NPN PLANAR TRANSISTOR

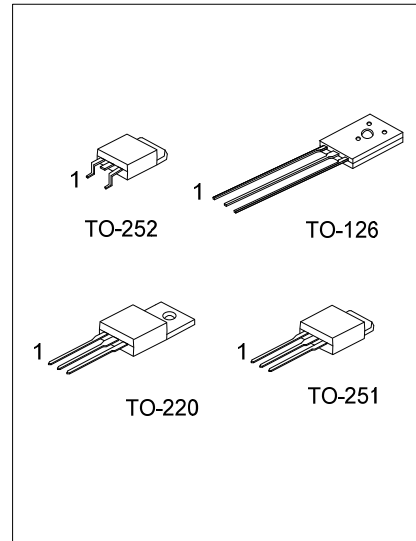
NPN EXPITAXIAL PLANAR TRANSISTOR

DESCRIPTION

The UTC **TIP31C** is a NPN expitaxial planar transistor, designed for using in general purpose amplifier and switching applications.

FEATURES

* Complement to TIP32C.



*Pb-free plating product number: TIP31CL

ORDERING INFORMATION

Ordering Number		Package	Pin Assignment			Packing
Normal	Lead Free Plating		1	2	3	
TIP31C-T60-B	TIP31CL-T60-B	TO-126	E	C	B	Bulk
TIP31C-TA3-T	TIP31CL-TA3-T	TO-220	B	C	E	Tube
TIP31C-TM3-T	TIP31CL-TM3-T	TO-251	B	C	E	Tube
TIP31C-TN3-R	TIP31CL-TN3-R	TO-252	B	C	E	Tape Reel
TIP31C-TN3-T	TIP31CL-TN3-T	TO-252	B	C	E	Tube

<p>TIP31CL-T60-B</p> <p>(1)Packing Type</p> <p>(2)Package Type</p> <p>(3)Lead Plating</p>	<p>(1) B: Tape Box, K: Bulk, R: Tape Reel, T: Tube</p> <p>(2) T60: TO-126, TA3: TO-220, TM3: TO-251, TN3: TO-252</p> <p>(3) L: Lead Free Plating, Blank: Pb/Sn</p>
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■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage		V_{CBO}	100	V
Collector-Emitter Voltage		V_{CEO}	100	V
Emitter-Base Voltage		V_{EBO}	5	V
Collector Current	DC	I_C	3	A
	Pulse		5	A
Base Current		I_B	1	A
Collector Dissipation ($T_C=25^\circ\text{C}$)	TO-126	P_C	10	W
	TO-220		40	W
	TO-251/TO-252		15	W
Collector Dissipation ($T_a=25^\circ\text{C}$)			2	W
Junction Temperature		T_J	+150	$^\circ\text{C}$
Storage Temperature		T_{STG}	-65 ~ +150	$^\circ\text{C}$

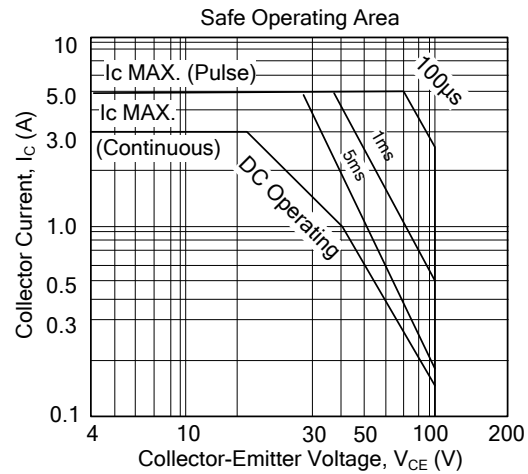
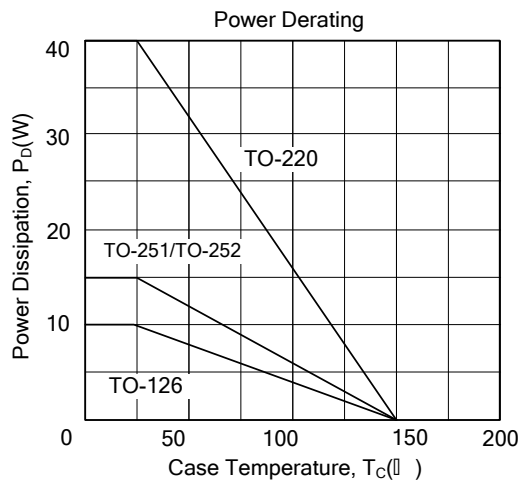
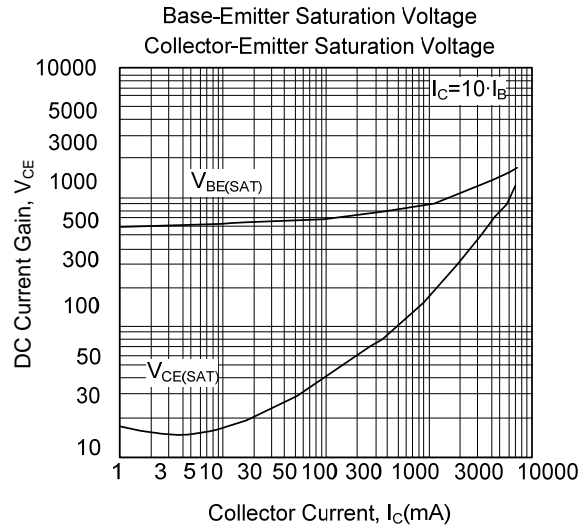
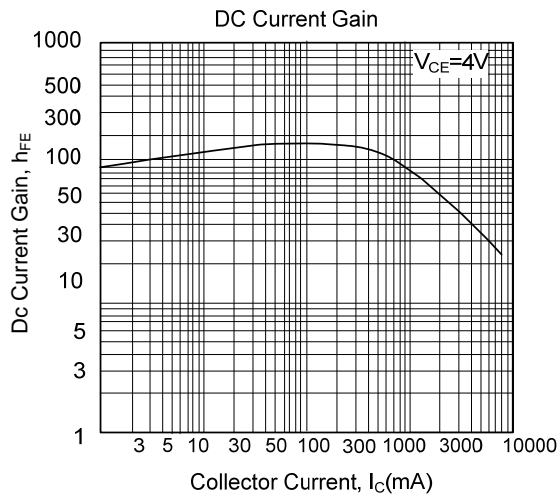
Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

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

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collector Emitter Sustaining Voltage (Note)	BV_{CEO}	$I_C=30\text{mA}$, $I_B=0$	100			V
Collector Cutoff Current	I_{CES}	$V_{CB}=100\text{V}$, $V_{EB}=0$			200	μA
Collector Cutoff Current	I_{CEO}	$V_{CE}=60\text{V}$, $I_B=0$			0.3	mA
Emitter Cutoff Current	I_{EBO}	$V_{BE}=5\text{V}$, $I_C=0$			1	mA
Collector-Emitter Saturation Voltage (Note)	$V_{CE(SAT)}$	$I_C=3\text{A}$, $I_B=375\text{mA}$			1.2	V
Base-Emitter On Voltage (Note)	$V_{BE(ON)}$	$I_C=3\text{A}$, $V_{CE}=4\text{V}$			1.8	V
DC Current Gain (Note)	h_{FE1}	$I_C=1\text{A}$, $V_{CE}=4\text{V}$	25			
	h_{FE2}	$I_C=3\text{A}$, $V_{CE}=4\text{V}$	10		50	
Current Gain Bandwidth Product	f_T	$I_C=0.5\text{A}$, $V_{CE}=10\text{V}$ $f=1\text{MHz}$	3			MHz

Note: Pulse Test: $PW \leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$

TYPICAL CHARACTERISTICS



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