



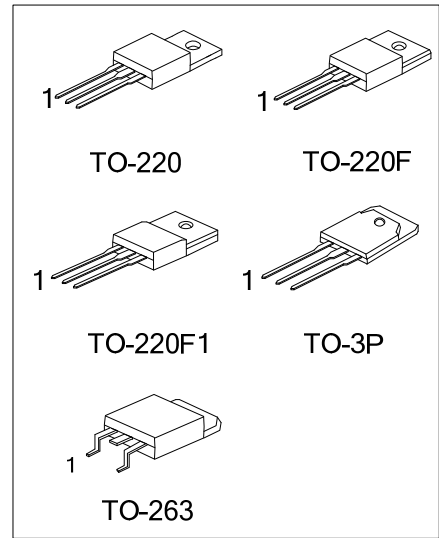
## BU406

## NPN PLANAR TRANSISTOR

### SILICON NPN SWITCHING TRANSISTOR

#### DESCRIPTION

The UTC **BU406** is a NPN epitaxial planar transistor. It is a fast switching device for use in horizontal deflection output stages of large screens MTV receivers with 110°C CRT.

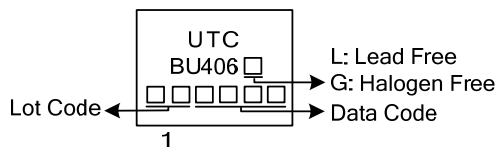


#### ORDERING INFORMATION

Order Number		Package	Pin Assignment			Packing
Lead Free	Halogen Free		1	2	3	
BU406L-x-TA3-T	BU406G-x-TA3-T	TO-220	B	C	E	Tube
BU406L-x-TF1-T	BU406G-x-TF1-T	TO-220F1	B	C	E	Tube
BU406L-x-TF3-T	BU406G-x-TF3-T	TO-220F	B	C	E	Tube
BU406L-x-T3P-T	BU406G-x-T3P-T	TO-3P	B	C	E	Tube
BU406L-x-TQ2-T	BU406G-x-TQ2-T	TO-263	B	C	E	Tube
BU406L-x-TQ2-R	BU406G-x-TQ2-R	TO-263	B	C	E	Tape Reel

<p>BU406L-x-TA3-T</p> <p>(1)Packing Type (2)Package Type (3)Rank (4)Lead Plating</p>	<p>(1) T: Tube, R: Tape Reel (2) TA3: TO:220, TF1: TO-220F1, TF3: TO-220F, T3P: TO-3P, TQ2: TO-263 (3) x: refer to Classification of <math>h_{FE}</math> (4) L: Lead Free, G: Halogen Free</p>
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#### MARKING



### ■ ABSOLUTE MAXIMUM RATING

PARAMETER		SYMBOL	RATINGS	UNIT
Collector-Base Voltage ( $I_E=0$ )		$V_{CBO}$	400	V
Collector-Emitter Voltage ( $V_{BE}=-1.5V$ )		$V_{CEV}$	400	V
Collector-Emitter Voltage ( $I_B=0$ )		$V_{CEO}$	200	V
Emitter-Base Voltage ( $I_C=0$ )		$V_{EBO}$	6	V
Collector Current		$I_C$	7	A
Collector Peak Current (repetitive)		$I_{CM}$	10	A
Collector Peak Current ( $t_p=10ms$ )		$I_{CM}$	15	A
Base Current		$I_B$	4	A
Collector Dissipation ( $T_C \leq 25^\circ C$ )	TO-220/TO-263	$P_C$	60	W
	TO-220F/TO-220F1		27	
	TO-3P		65	
Junction Temperature		$T_J$	150	$^\circ C$
Storage Temperature		$T_{STG}$	-65 ~ +150	$^\circ C$

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	RATINGS	UNIT
Thermal Resistance, Junction to Case	TO-220/TO-263	$\theta_{JC}$	2.08	$^\circ C/W$
	TO-220F/TO-220F1		4.63	
	TO-3P		1.92	

### ■ ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ C$ )

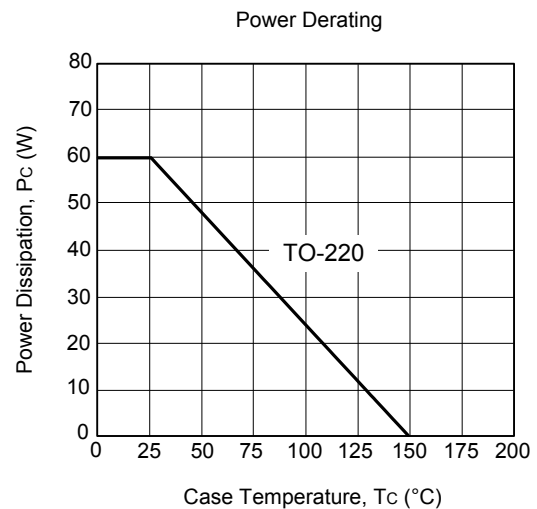
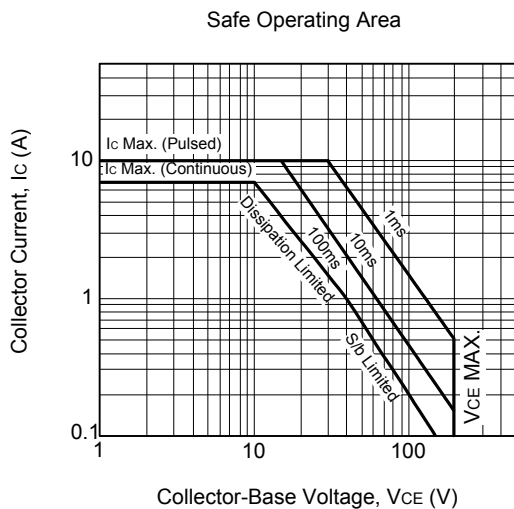
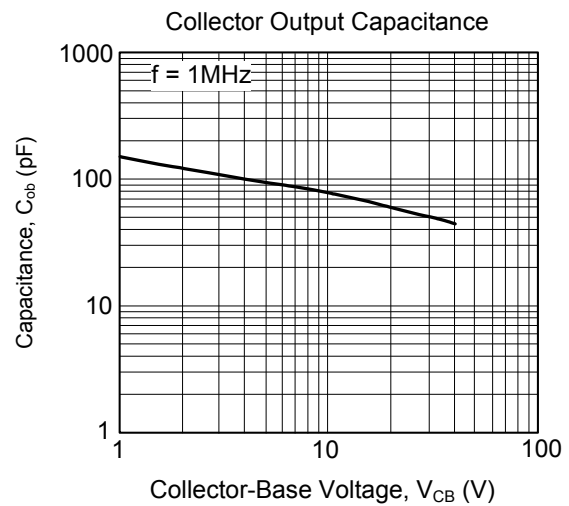
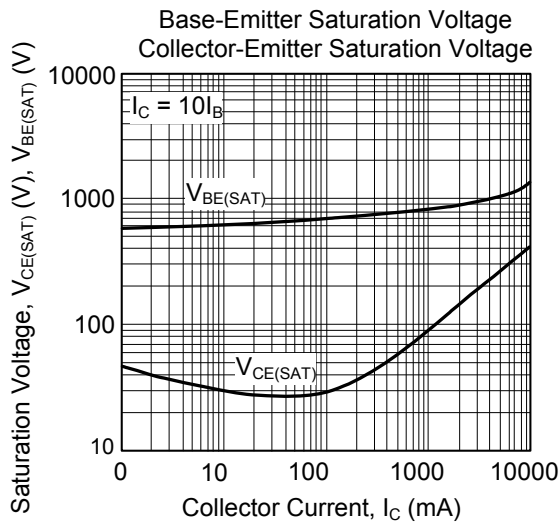
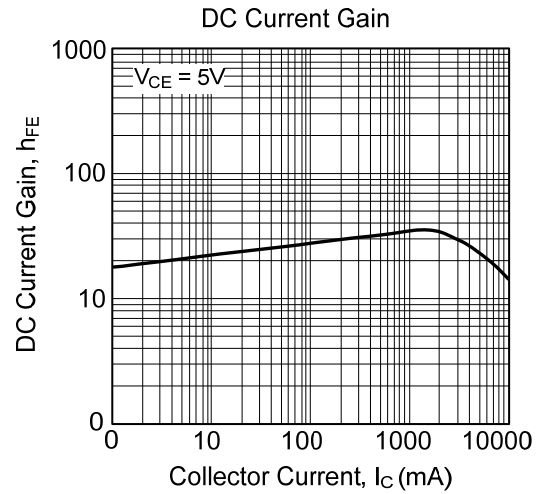
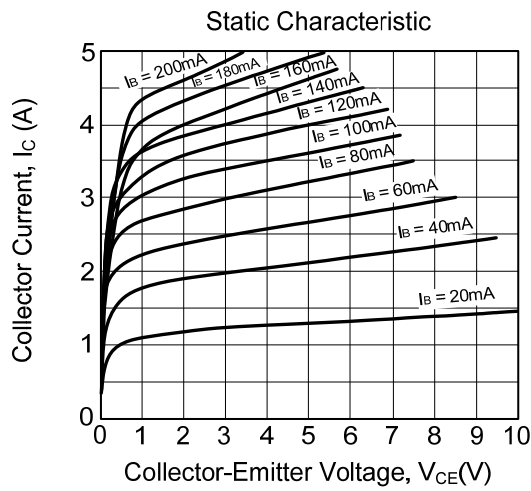
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Collect Cutoff Current ( $V_{BE}=0$ )	$I_{CES}$	$V_{CE}=400V$			5	mA
		$V_{CE}=250V, T_C=150^\circ C$			100	$\mu A$
		$V_{CE}=250V$			1	mA
Emitter Cut-off Current ( $I_C=0$ )	$I_{EBO}$	$V_{BE}=6V$			1	mA
Collector-Emitter Saturation Voltage	$V_{CE(SAT)^*}$	$I_C=5A, I_B=0.5A$			1	V
Base-Emitter Saturation Voltage	$V_{BE(SAT)^*}$	$I_C=5A, I_B=0.5A$			1.2	V
DC Current Gain	$h_{FE}$	$V_{CE}=10V, I_C=500mA$	70		240	
Transition Frequency	$f_T$	$I_C=500mA, V_{CE}=10V$	10			MHz
Turn-off Time	$t_{OFF}$	$I_C=5A, I_B=0.5A$			0.75	$\mu s$
Second Breakdown Collector Current	$I_{s/b}$	$V_{CE}=40V, t=10ms$		4		A

Note: Pulse duration=300 $\mu s$ , duty cycle 1.5%.

### ■ CLASSIFICATION OF $h_{FE}$

RANK	A	B
RANGE	70 ~ 120	110 ~ 240

## TYPICAL CHARACTERISTICS



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