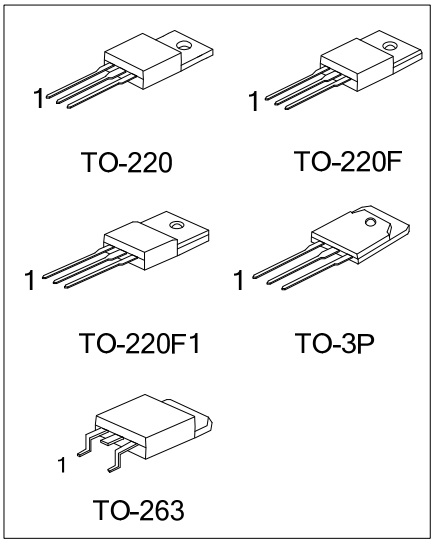
BU406

NPN PLANAR TRANSISTOR

SILICON NPN SWITCHING TRANSISTOR



■ DESCRIPTION

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

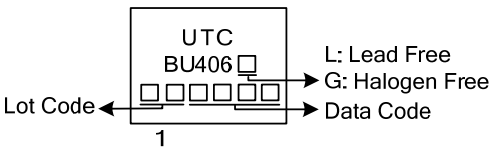
■ ORDERING INFORMATION

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

BU406L-x-TA3-T
(1)Packing Type
(2)Package Type
(3)Rank
(4)Lead Plating

(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 h_{FE}
(4) L: Lead Free, G: Halogen Free

■ 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 (tp=10ms)		I_{CM}	15	A
Base Current		I_B	4	A
Collector Dissipation (T_C≤25°C)	TO-220/TO-263	P_C	60	W
	TO-220F/TO-220F1		27	
	TO-3P		65	
Junction Temperature		T_J	150	°C
Storage Temperature		T_{STG}	-65 ~ +150	°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	θ_{JC}	2.08	°C/W
	TO-220F/TO-220F1		4.63	
	TO-3P		1.92	

■ ELECTRICAL CHARACTERISTICS (T_A=25°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°C			100	μA
		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	μs
Second Breakdown Collector Current	Is/b	V_{CE}=40V, t=10ms		4		A

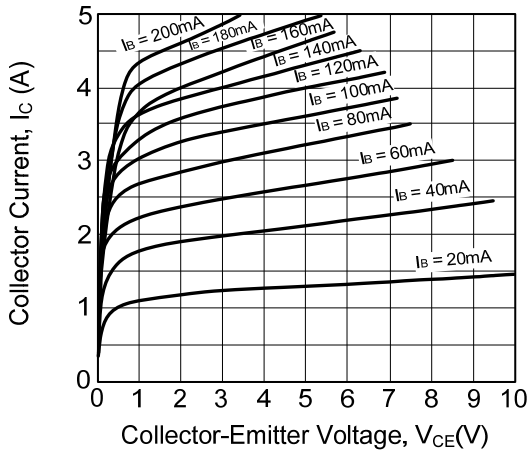
Note: Pulse duration=300μs, duty cycle 1.5%.

■ CLASSIFICATION OF h_{FE}

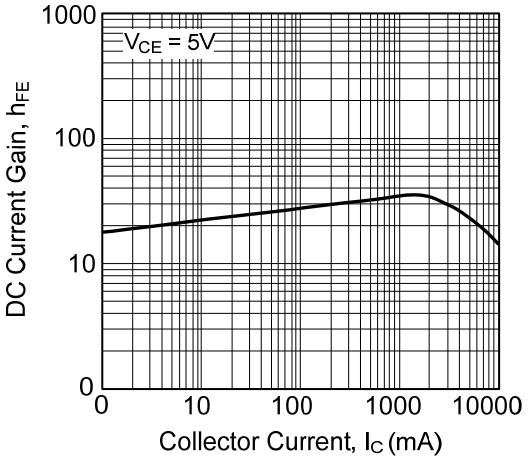
RANK	A	B
RANGE	70 ~ 120	110 ~ 240

■ TYPICAL CHARACTERISTICS

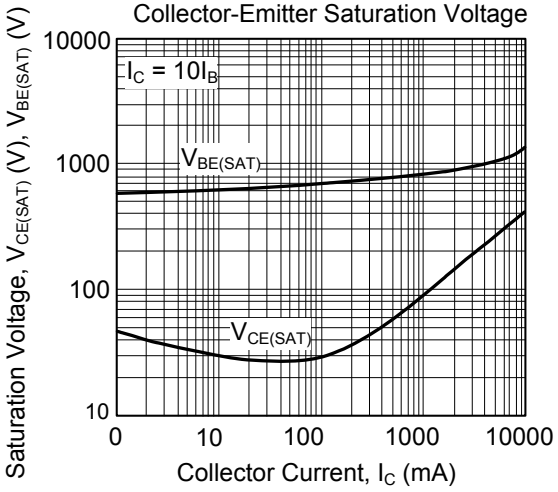
Static Characteristic



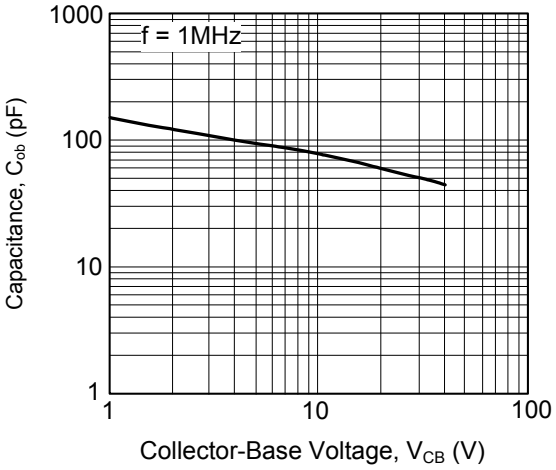
DC Current Gain



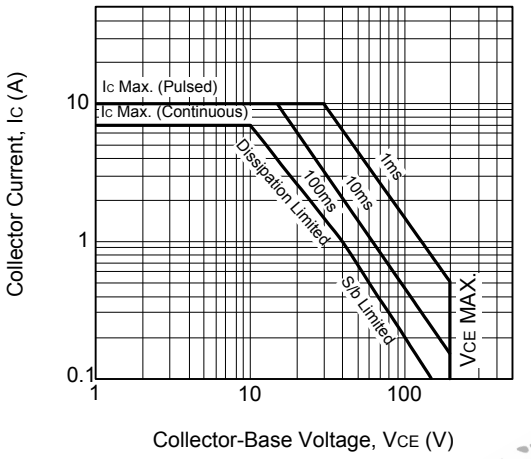
Base-Emitter Saturation Voltage
Collector-Emitter Saturation Voltage



Collector Output Capacitance



Safe Operating Area



Power Derating