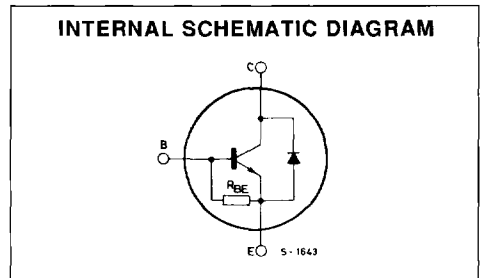
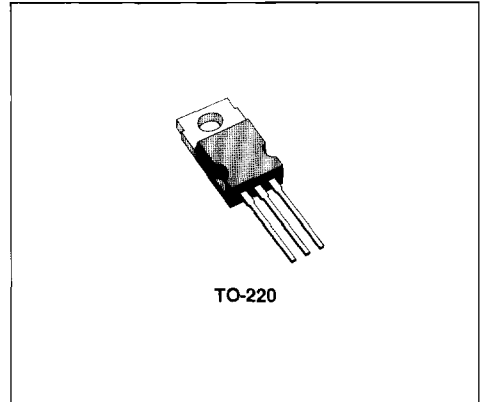


HORIZONTAL TV DEFLECTORS

DESCRIPTION

The BU406D, BU407D, and BU408D are silicon planar epitaxial NPN transistors with integrated damper diode, in Jedec TO-220 plastic package. They are fast switching, high voltage devices for use in horizontal deflection output stages of MTV receivers with 110° CRT.

The BU406D and BU408D are primarily intended for large screen, while the BU407D is for medium and small screens.



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value			Unit
		BU406D	BU407D	BU408D	
V_{CBO}	Collector-base Voltage ($I_E = 0$)	400	330	400	V
V_{CEV}	Collector-emitter Voltage ($V_{BE} = -1.5V$)	400	330	400	V
V_{EBO}	Emitter-base Voltage ($I_C = 0$)	6			V
I_C	Collector Current	7			A
I_{CM}	Collector Peak Current (repetitive)	10			A
I_{CM}	Collector Peak Current ($t_p = 10ms$)	15			A
I_B	Base Current	4			A
P_{tot}	Total Power Dissipation at $T_{case} \leq 25^\circ C$	60			W
T_{stg}	Storage Temperature	- 65 to 150			$^\circ C$
T_j	Junction Temperature	150			$^\circ C$

THERMAL DATA

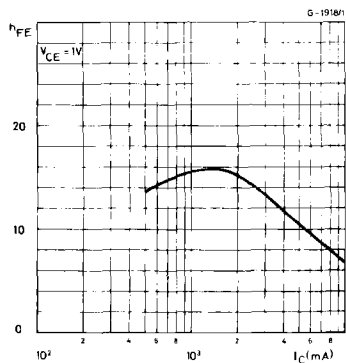
$R_{th, case}$	Thermal Resistance Junction-case	Max	2.08	$^{\circ}\text{C}/\text{W}$
$R_{th, amb}$	Thermal Resistance Junction-ambient	Max	70	$^{\circ}\text{C}/\text{W}$

ELECTRICAL CHARACTERISTICS ($T_{case} = 25^{\circ}\text{C}$ unless otherwise specified)

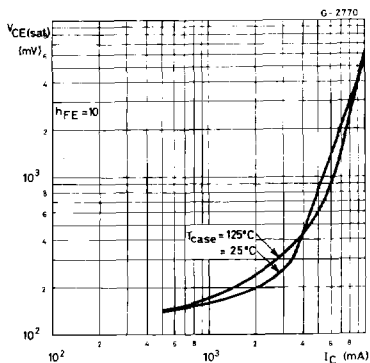
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
I_{CEV}	Collector Cutoff Current ($V_{BE} = -1.5\text{V}$)	for BU406D and BU408D $V_{CE} = 400\text{V}$ for BU407D $V_{CE} = 330\text{V}$			15	mA
I_{EBO}	Emitter Cutoff Current ($I_C = 0$)	$V_{EB} = 6\text{V}$			400	mA
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	for BU406D and BU407D $I_C = 5\text{A}$ $I_B = 0.65\text{A}$ for BU408D $I_C = 6\text{A}$ $I_B = 1.2\text{A}$			1	V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	for BU406D and BU407D $I_C = 5\text{A}$ $I_B = 0.65\text{A}$ for BU408D $I_C = 6\text{A}$ $I_B = 1.2\text{A}$			1.3	V
f_T	Transition Frequency	$I_C = 0.5\text{A}$ $V_{CE} = 10\text{V}$	10			MHz
t_{off}	Turn-off Time	for BU406D and BU407D $I_C = 5\text{A}$ $I_{Bend} = 0.65\text{A}$ for BU408D $I_C = 6\text{A}$ $I_{Bend} = 1.2\text{A}$			0.75	μs
$I_{s/b}$	Second Breakdown Collector Current	$V_{CE} = 40\text{V}$ $t = 10\text{ms}$		4		A
V_F	Diode Forward Voltage	$I_F = 5\text{A}$			1.5	V

* Pulsed : pulse duration = 300 μs , duty cycle = 1.5%.

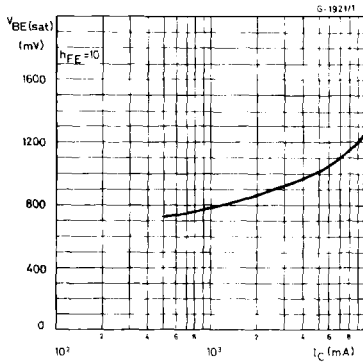
DC Current Gain.



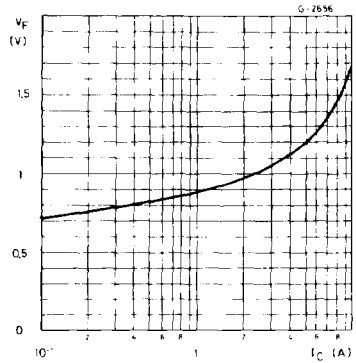
Collector-emitter Saturation Voltage.



Base-emitter Saturation Voltage.

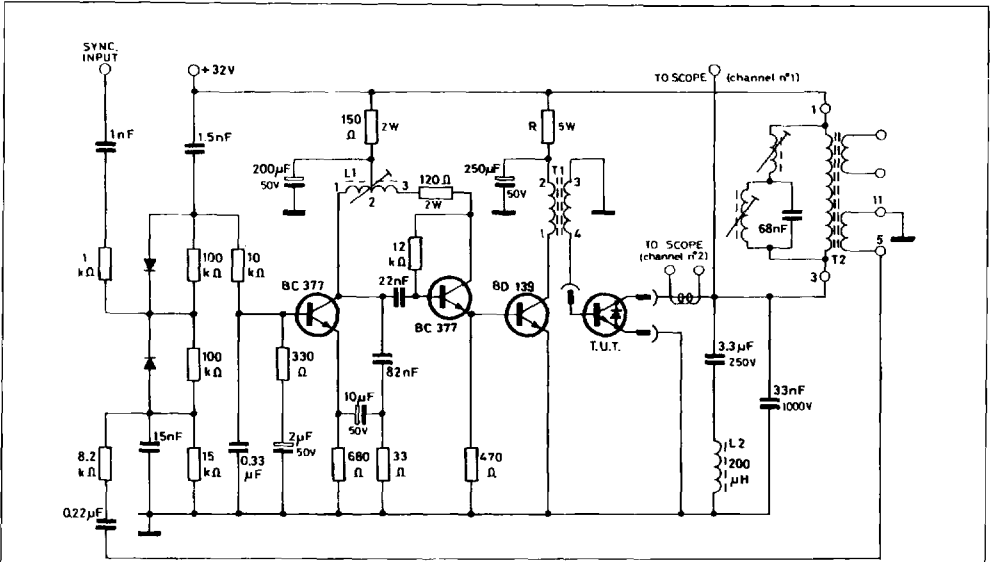


Forward Voltage.



SWITCHING TIMES

TEST CIRCUIT (FALL, STORAGE AND TURN-OFF TIME)



S-2297/1

L1 Horizontal hold coil : Pins 1-2 = 75 turns \varnothing 0.2mm ; R = 1.5 Ω ; L min = 0.62mH

Core = siferrit B 62120 25x4x2

Pins 2-3 = 293 turns \varnothing 0.2mm ; R = 4.8 Ω ; L max = 4.1mH

L2 Horizontal yoke = 200 μ H

T1 Driver transformer : Pins 1-2 = 125 turns \varnothing 0.2mm ;

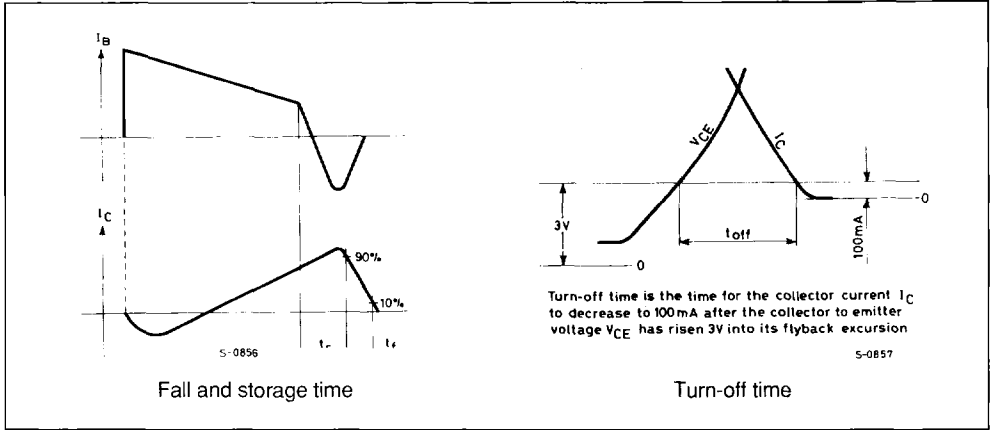
Gap = 0.12mm ; Core = 3E3 double E 19x15x5

Pins 3-4 = 25 turns \varnothing 0.4mm ;
T2 EHT transformer manufacturer ARCO type 249.065/035

R = 270 Ω for BU406D and BU407D

R = 180 Ω for BU408D

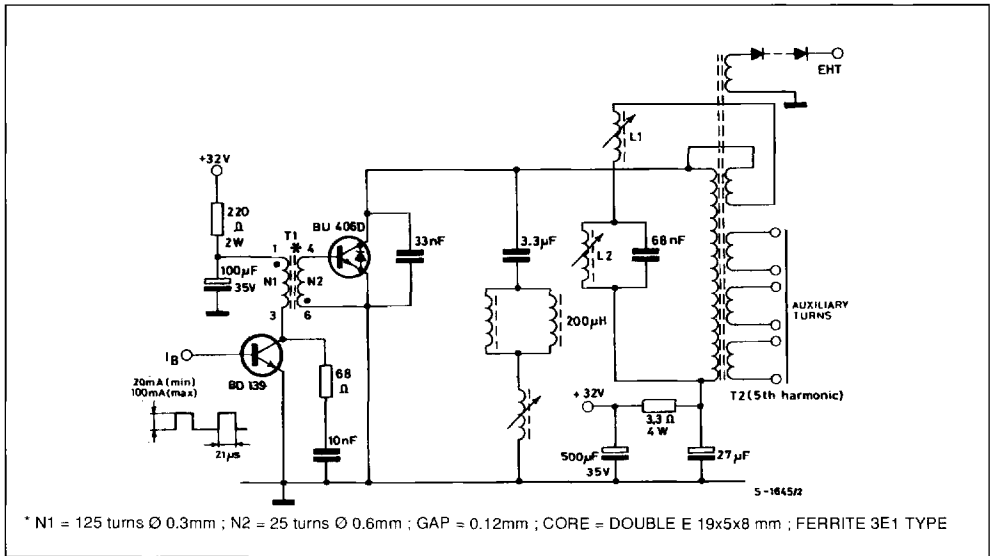
Waveforms



APPLICATION INFORMATION

Two examples are given of the BU406D and BU407D in conventional MTV horizontal deflection circuits.

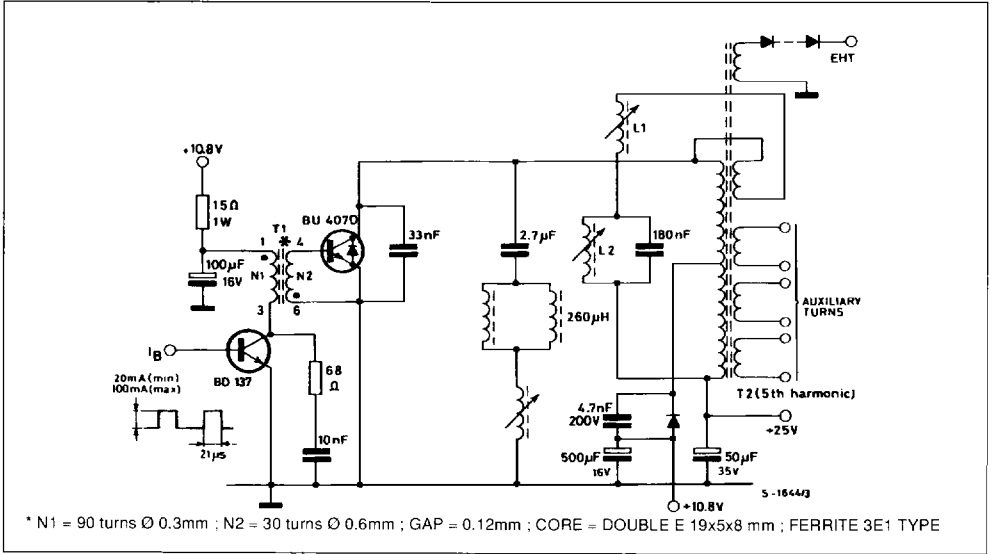
BU406D - application circuit for 17" to 24" - 110° - 28 mm neck picture tubes.



* N1 = 125 turns Ø 0.3mm ; N2 = 25 turns Ø 0.6mm ; GAP = 0.12mm ; CORE = DOUBLE E 19x5x8 mm ; FERRITE 3E1 TYPE

APPLICATION INFORMATION (continued)

BU407D - application circuit for 12" to 17" - 110° - 28mm neck picture tubes
(drive supply voltage = 10.8V).



BU407D - application circuit for 12" to 17" - 110° - 28mm neck picture tubes.
(driver supply voltage = 10.8V).

