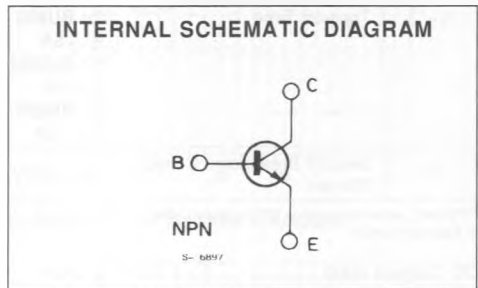
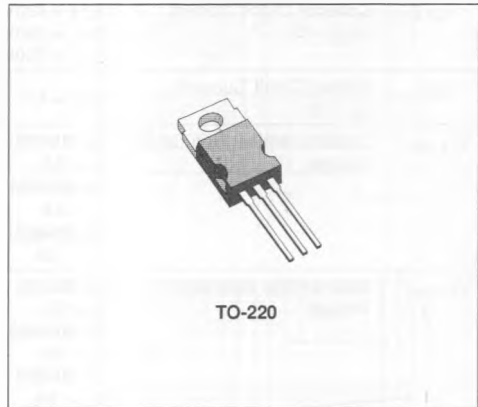


## HORIZONTAL TV DEFLECTORS

**DESCRIPTION**

The BU406, BU406H, and BU408 are silicon epitaxial planar NPN transistors in Jedec TO-220 plastic package. They are fast switching, high voltage devices for use in horizontal deflection output stages of large screen MTV receivers with 110" CRT.


**ABSOLUTE MAXIMUM RATINGS**

Symbol	Parameter	Value	Unit
$V_{CBO}$	Collector-base Voltage ( $I_E = 0$ )	400	V
$V_{CEV}$	Collector-emitter Voltage ( $V_{BE} = -1.5V$ )	400	V
$V_{CEO}$	Collector-emitter Voltage ( $I_B = 0$ )	200	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
$T_{sig}$	Storage Temperature	- 65 to 150	$^\circ C$
$T_j$	Junction Temperature	150	$^\circ C$

**THERMAL DATA**

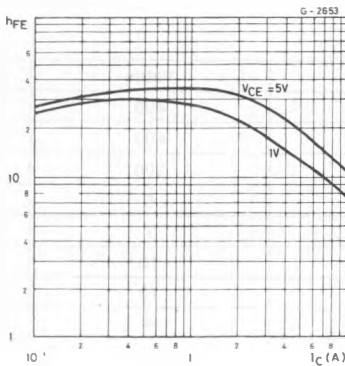
$R_{th\ j-case}$	Thermal Resistance Junction-case	Max	2.08	°C/W
$R_{th\ j-amb}$	Thermal Resistance Junction-ambient	Max	70	°C/W

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

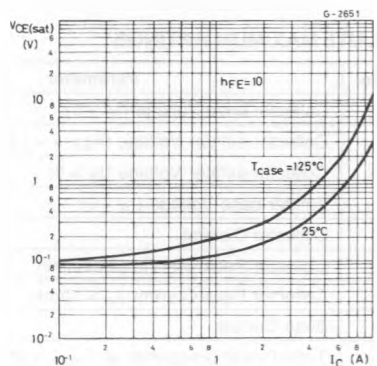
Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
$I_{CES}$	Collector Cutoff Current ( $V_{BE} = 0$ )	$V_{CE} = 400V$ $V_{CE} = 250V$ $V_{CE} = 250V$ $T_{case} = 150^{\circ}C$			5 100 1	mA $\mu A$ mA
$I_{EBO}$	Emitter Cutoff Current ( $I_C = 0$ )	$V_{EB} = 6V$			1	mA
$V_{CE(sat)}^*$	Collector-emitter Saturation Voltage	for <b>BU406</b> $I_C = 5A$ for <b>BU406H</b> $I_C = 5A$ for <b>BU408</b> $I_C = 6A$ $I_B = 0.5A$ $I_B = 0.8A$ $I_B = 1.2A$			1 1 1	V V V
$V_{BE(sat)}^*$	Base-emitter Saturation Voltage	for <b>BU406</b> $I_C = 5A$ for <b>BU406H</b> $I_C = 5A$ for <b>BU408</b> $I_C = 6A$ $I_B = 0.5A$ $I_B = 0.8A$ $I_B = 1.2A$			1.2 1.2 1.5	V V V
$f_T$	Transition Frequency	$I_C = 0.5A$ $V_{CE} = 10V$	10			MHz
$t_{off}^{**}$	Turn-off Time	for <b>BU406</b> $I_C = 5A$ for <b>BU406H</b> $I_C = 5A$ for <b>BU408</b> $I_C = 6A$ $I_{Bend} = 0.5A$ $I_{Bend} = 0.8A$ $I_{Bend} = 1.2A$			0.75 0.4 0.4	$\mu s$ $\mu s$ $\mu s$
$I_{\epsilon/b}$	Second Breakdown Collector Current	$V_{CE} = 40V$ $t = 10ms$		4		A

\* Pulsed : pulse duration = 300 $\mu s$ , duty cycle = 1.5%.  
\*\* See test circuit.

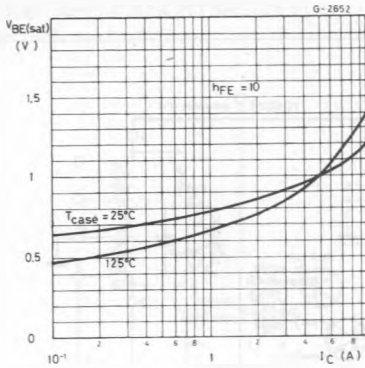
**DC Current Gain.**



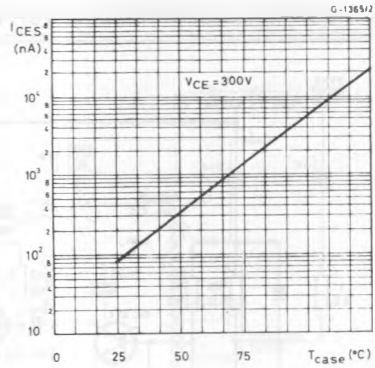
**Collector-emitter Saturation Voltage.**



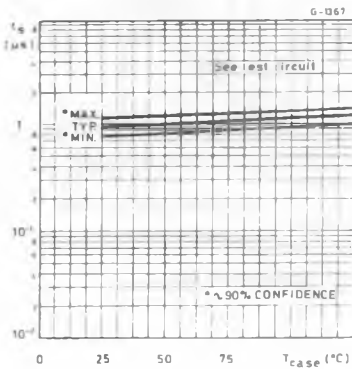
Base-emitter Saturation Voltage.



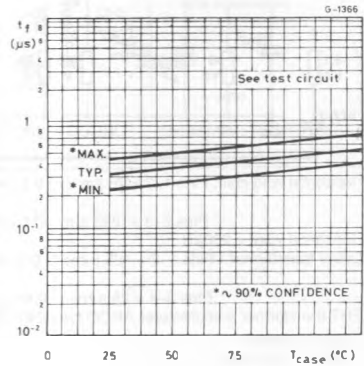
Collector cutoff Current.



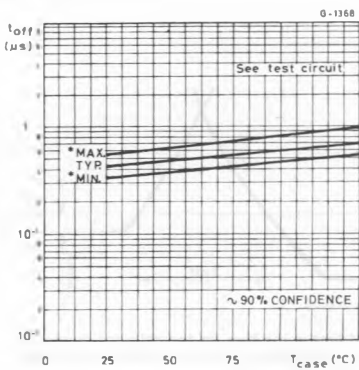
Storage Time.



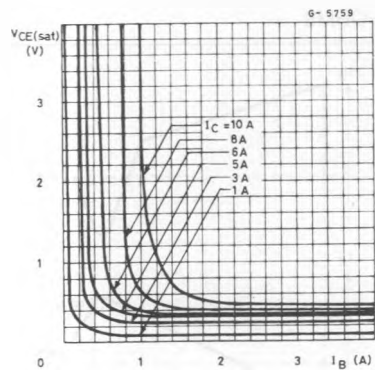
Fall Time.



Turn-off Time.

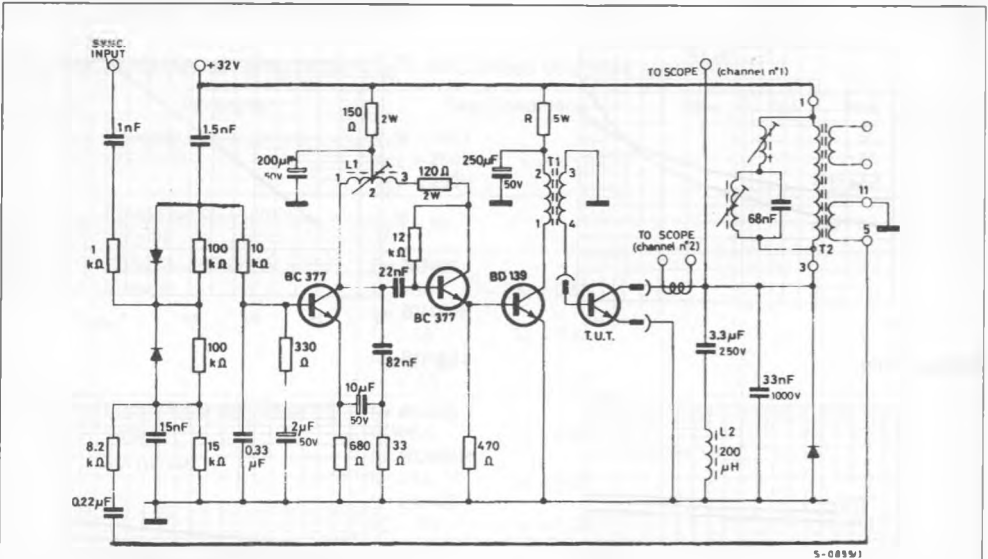


Collector-emitter Saturation Voltage.



SWITCHING TIMES

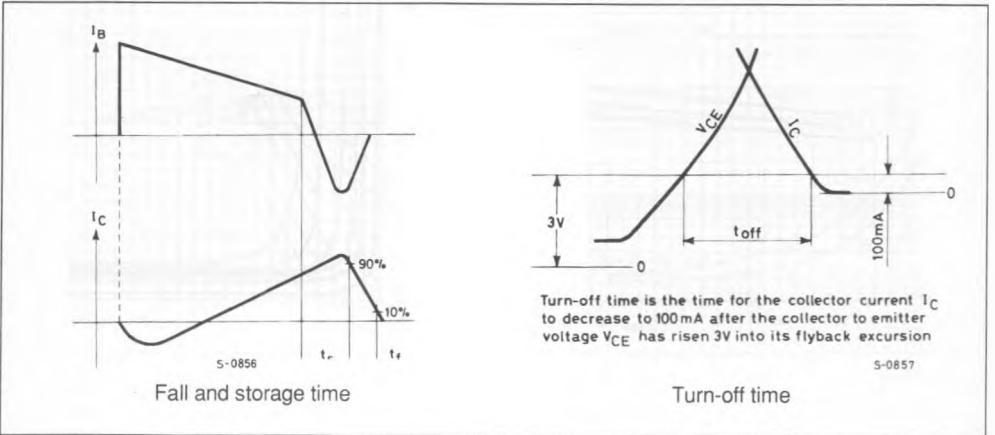
TEST CIRCUIT (FALL, STORAGE AND TURN-OFF TIME)



S-0859/1

- L1 Horizontal hold coil : Pins 1-2 = 75 turns Ø 0.2mm ; R = 1.5Ω ; L min = 0.62mH  
 Pins 2-3 = 293 turns Ø 0.2mm ; R = 4.8Ω ; L max = 4.1H  
 Core = siferit B 62120 25x4x2
- L2 Horizontal yoke = 200μH
- T1 Driver transformer : Pins 1-2 = 125 turns Ø 0.2mm ;  
 Pins 3-4 = 25 turns Ø 0.4mm ;  
 Gap = 0.12mm ; Core = 3E3 double E 19x15x5
- T2 EHT transformer manufacturer ARCO type 249 065/035
- R = 330Ω for BU406  
 R = 220Ω for BU406H  
 R = 180Ω for BU408

WAVEFORMS



APPLICATION INFORMATION

BU406 - APPLICATION CIRCUIT FOR 17" TO 24" - 110° - 28 MM NECK PICTURE TUBES

