



T8177

LINEAR INTEGRATED CIRCUIT

VERTICAL DEFLECTION BOOSTER

DESCRIPTION

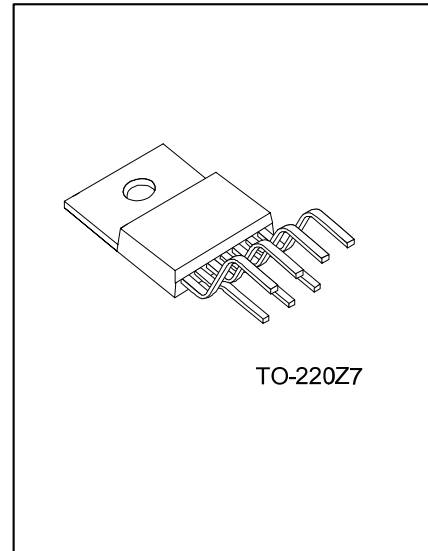
The UTC **T8177** is a vertical deflection booster integrated circuit and designed for CRT monitors and high performance TVs. It is intended to delivers flyback voltages up to 70V.

The **T8177** supplies with up to 35V and provides a maximum output current up to 3.0A peak to peak to drive the deflection yoke with a high efficiency.

The UTC **T8177** is offered in HEPTAWATT package.

FEATURES

- * Deflection current can be 3.0A peak value
- * Deflection voltage up to 70V (on Pin 5)
- * Flyback Generator
- * Thermal Protection Circuit
- * Supports DC Coupling



TO-220Z7

*Pb-free plating product number: T8177L

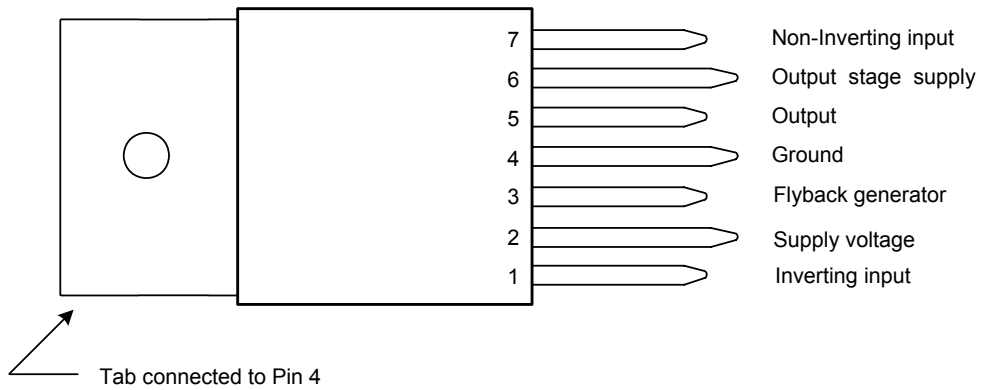
ORDERING INFORMATION

www.DataSheet4U.com

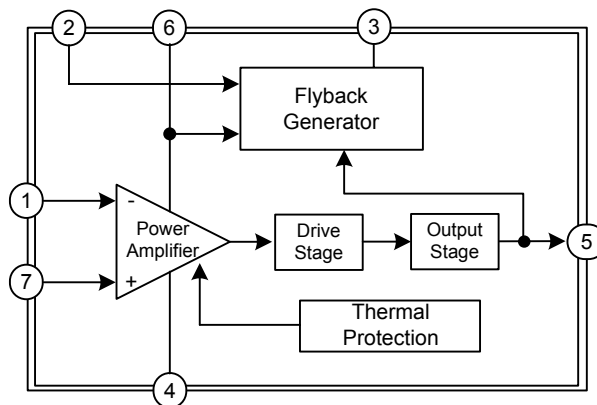
| Order Number | | Package | Packing |
|--------------|-------------------|----------|---------|
| Normal | Lead Free Plating | | |
| T8177-TB7-T | T8177L-TB7-T | TO-220Z7 | Tube |

| | | |
|---------------------|--|--|
| <p>T8177L-TB7-T</p> | <p>(1)Packing Type (2)Package Type (3)Lead Plating</p> | <p>(1) T: Tube (2) TB7: TO-220Z7 (3) Lead Free Plating, Blank: Pb/Sn</p> |
|---------------------|--|--|

■ PIN CONFIGURATION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

| PARAMETER | SYMBOL | RATINGS | UNIT |
|--|------------|--------------|------|
| Supply Voltage (Pin 2) (Note 1) | V_{CC} | 40 | V |
| Flyback Peak Voltage (Pin 6) (Note 1) | V_6 | 75 | V |
| Amplifier Input Voltage (Pin 1, Pin 7) (Note 1) | V_1, V_7 | -0.3 ~ V_S | V |
| Electrostatic Handling for All Pins (Note 4) | V_{ESD} | 2000 | V |
| Maximum Output Peak Current (Note 2, 3) | I_{OUT} | 2.5 | A |
| Maximum Sink Current (First part of Flyback) ($t < 1ms$) | I_3 | 2.5 | A |
| Maximum Source Current ($t < 1ms$) | I_3 | 2.5 | A |
| Junction Temperature | T_J | +150 | °C |
| Operating Ambient Temperature | T_{OPR} | -20 ~ +75 | °C |
| Storage Temperature | T_{STG} | -40 ~ + 150 | °C |

Notes: 1. Reference to GND pin.

2. For $t \leq 10\mu S$, I_O can be up to 4A peak to peak (up to 120Hz).

3. Provided output transistor SOA (see Figures 1 and 2).

4. Equivalent to discharging a 100pF capacitor through a 1.5kΩ series resistor.

5. 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

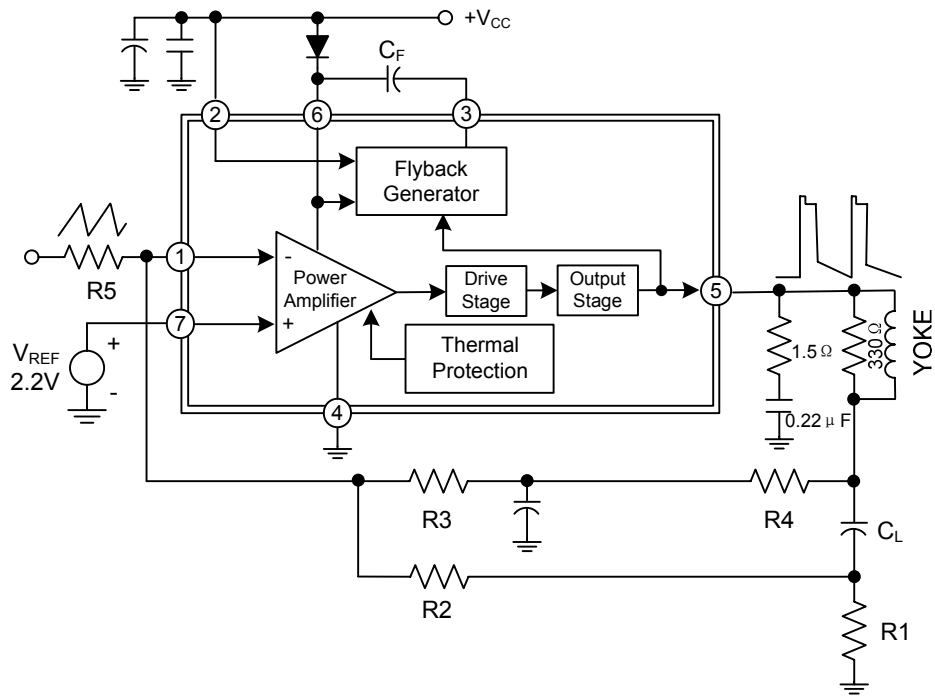
| PARAMETER | SYMBOL | RATINGS | UNIT |
|----------------------------------|---------------|---------|------|
| Junction-Case Thermal Resistance | θ_{JC} | 3 | °C/W |
| Temperature for Thermal Shutdown | T_{SHDN} | 150 | °C |
| Maximum Junction Temperature | T_J | 120 | °C |

■ ELECTRICAL CHARACTERISTICS ($V_{CC} = 35V$, $T_A = 25^\circ C$, unless otherwise specified)

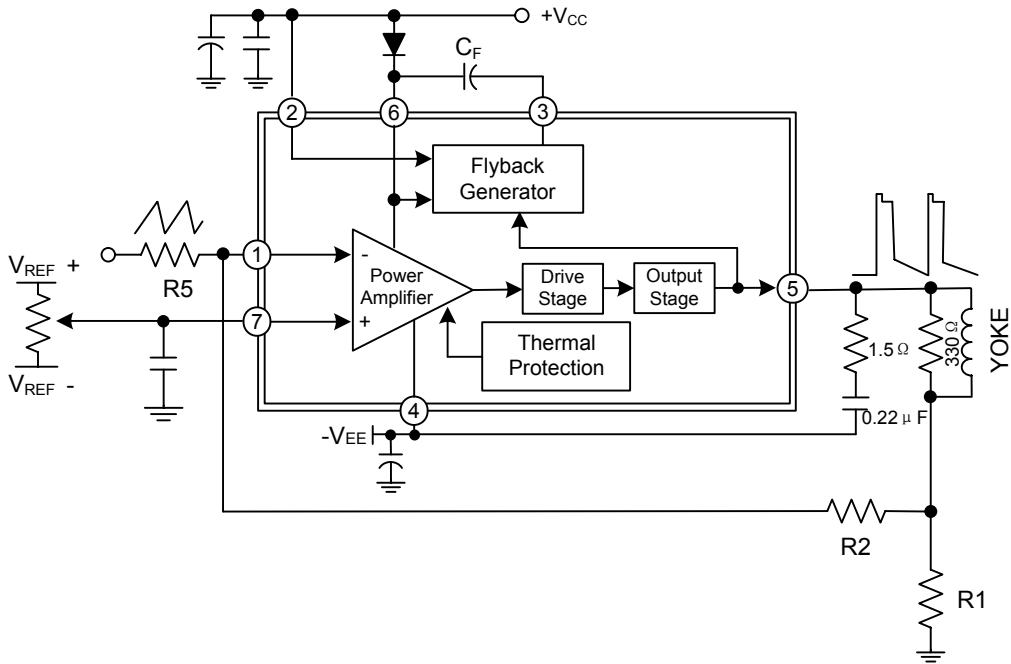
| PARAMETER | SYMBOL | TEST CONDITIONS | MIN | TYP | MAX | UNIT |
|---|------------------|-------------------------------|-----|-------|------|-------|
| Operating Supply Voltage Range | V_{CC} | | 10 | | 35 | V |
| Output Saturation Voltage to GND (Pin 4) | V_{5L} | $I_5 = 1.5A$ | | 1.0 | 1.7 | V |
| Output Saturation Voltage to Supply (Pin 6) | V_{5H} | $I_5 = -1.5A$ | | 1.8 | 2.3 | V |
| Diode Forward Voltage Between Pins 5-6 | V_{D5-6} | $I_5 = 1.5A$ | | 1.8 | 2.3 | V |
| Diode Forward Voltage Between Pins 3-2 | V_{D3-2} | $I_3 = 1.5A$ | | 1.6 | 2.2 | V |
| Saturation Voltage on Pin 3 | V_{3SL} | $I_3 = 20mA$ | | 0.4 | 1.0 | V |
| Saturation Voltage to Pin 2 (2nd part of flyback) | V_{3SH} | $I_3 = -1.5A$ | | 2.1 | 2.8 | V |
| Max. Peak Output Current | I_O | | | | 1.5 | A |
| Pin 2 Quiescent Current | I_2 | $I_3 = 0, I_5 = 0$ | | 9 | 20 | mA |
| Pin 6 Quiescent Current | I_6 | $I_3 = 0, I_5 = 0, V_6 = 35V$ | 8 | 15 | 30 | mA |
| Amplifier Bias Current | I_1 | $V_1 = 22V, V_7 = 23V$ | | -0.15 | -1.0 | μA |
| Amplifier Bias Current | I_7 | $V_1 = 23V, V_7 = 22V$ | | -0.15 | -1.0 | μA |
| Offset Voltage | $V_{I(OFF)}$ | | | | 7 | mV |
| Offset Drift Versus Temperature | $DV_{I(OFF)}/dt$ | | | -10 | | μV/°C |
| Voltage Gain | G_V | | 80 | | | dB |

APPLICATION CIRCUITS

AC COUPLING

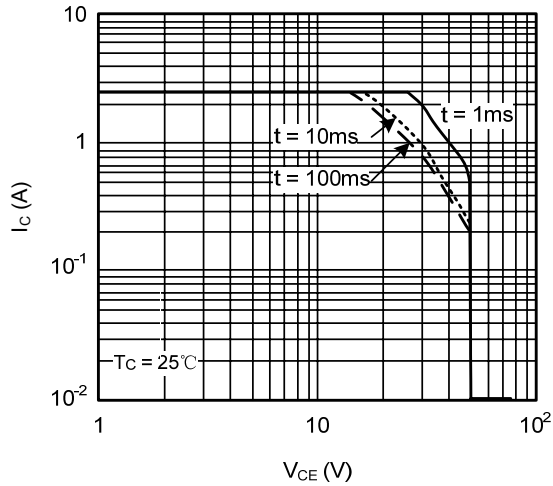


DC COUPLING

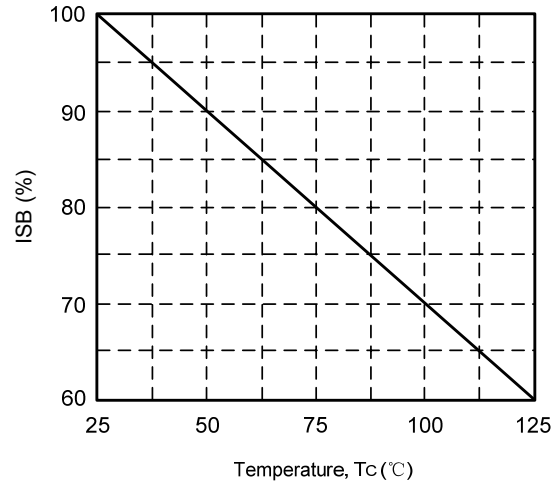


■ TYPICAL CHARACTERISTICS

Output Transistors SOA
(for secondary breakdown)



Secondary Breakdown Temperature Derating Curve
(ISB = secondary breakdown current)



UTC assumes no responsibility for equipment failures that result from using products at values that exceed, even momentarily, rated values (such as maximum ratings, operating condition ranges, or other parameters) listed in products specifications of any and all UTC products described or contained herein. UTC products are not designed for use in life support appliances, devices or systems where malfunction of these products can be reasonably expected to result in personal injury. Reproduction in whole or in part is prohibited without the prior written consent of the copyright owner. The information presented in this document does not form part of any quotation or contract, is believed to be accurate and reliable and may be changed without notice.