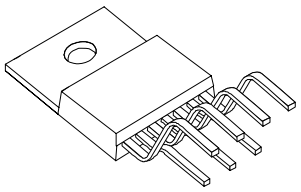
T8177 **LINEAR INTEGRATED CIRCUIT**

VERTICAL DEFLECTION BOOSTER



TO-220Z7

*Pb-free plating product number: T8177L

■ 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

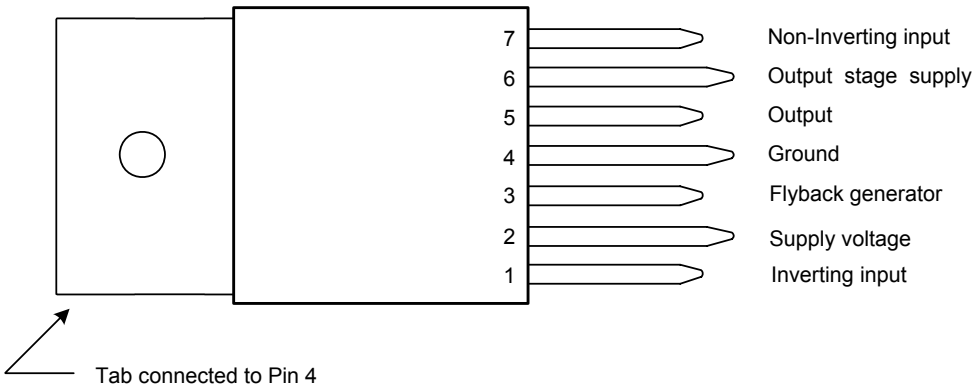
* Deflection current can be 3.0A peak value
* Deflection voltage up to 70V (on Pin 5)
* Flyback Generator
* Thermal Protection Circuit
* Supports DC Coupling

■ ORDERING INFORMATION

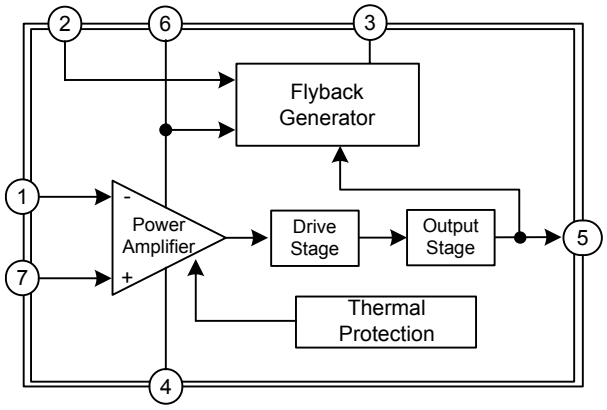
Order Number		Package	Packing
Normal	Lead Free Plating		
T8177-TB7-T	T8177L-TB7-T	TO-220Z7	Tube

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

■ 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	℃
Operating Ambient Temperature	T_{OPR}	-20 ~ +75	℃
Storage Temperature	T_{STG}	-40 ~ + 150	℃

Notes: 1. Reference to GND pin.
2. For t ≤ 10μS, 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

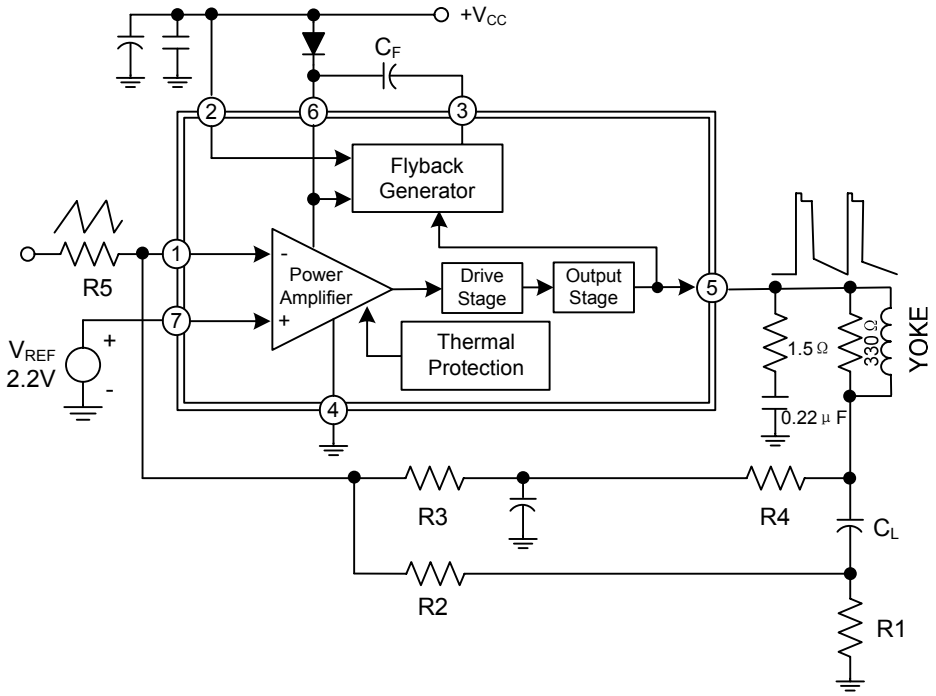
PARAMETER	SYMBOL	RATINGS	UNIT
Junction-Case Thermal Resistance	θ_{JC}	3	℃/W
Temperature for Thermal Shutdown	T_{SHDN}	150	℃
Maximum Junction Temperature	T_J	120	℃

■ ELECTRICAL CHARACTERISTICS (V_{CC} = 35V, T_A = 25℃, unless otherwise specified)

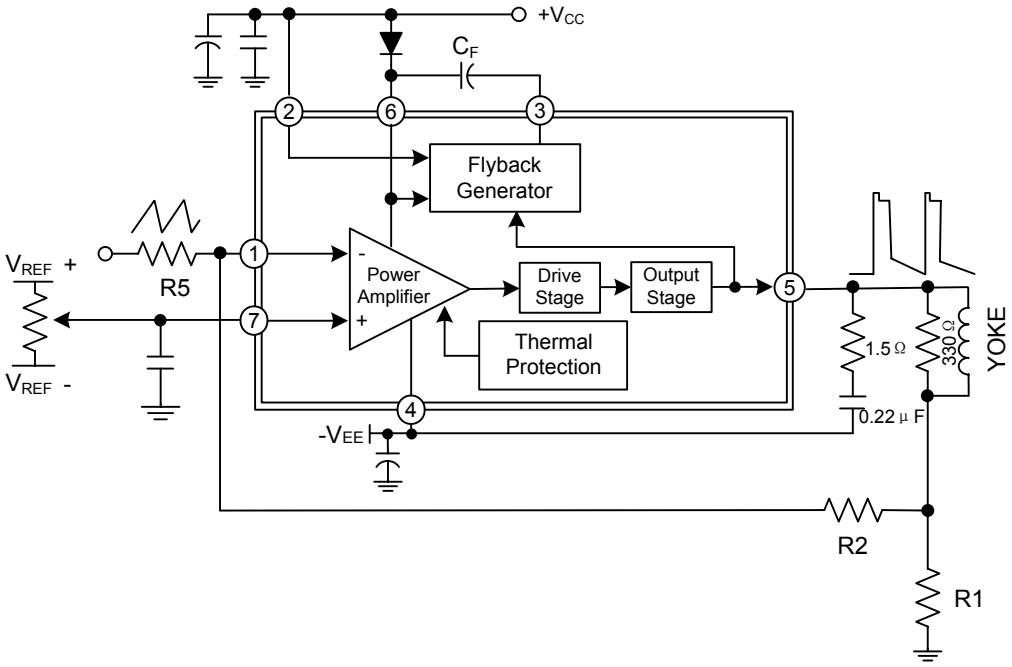
PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Operating Supply Voltage Range	V_{CC}		10		35	V
Output Saturation Voltage to GND (Pin 4)	V_{5L}	I_5 = 1.5A		1.0	1.7	V
Output Saturation Voltage to Supply (Pin 6)	V_{5H}	I_5 = -1.5A		1.8	2.3	V
Diode Forward Voltage Between Pins 5-6	V_{D5-6}	I_5 = 1.5A		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/℃
Voltage Gain	G_V		80			dB

■ APPLICATION CIRCUITS

AC COUPLING

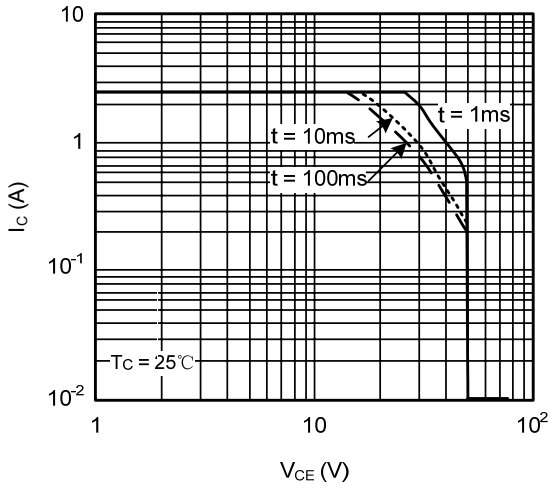


DC COUPLING



■ TYPICAL CHARACTERISTICS

Output Transistors SOA
(for secondary breakdown)



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