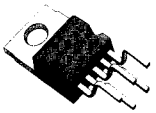
4A LINEAR DRIVER

- HIGH OUTPUT CURRENT (4A PEAK)
- HIGH CURRENT GAIN (10.000 TYP.)
- OPERATION UP TO ± 20V
- THERMAL PROTECTION
- SHORT CIRCUIT PROTECTION
- OPERATION WITHIN SOA
- HIGH SLEW-RATE (30V/μs)

The L149 is a general purpose power booster in Pentawatt® package consisting of a quasi-complementary darlington output stage with the associated biasing system and inhibit facility.

The device is particularly suited for use with an operational amplifier inside a closed loop configuration to increase output current.



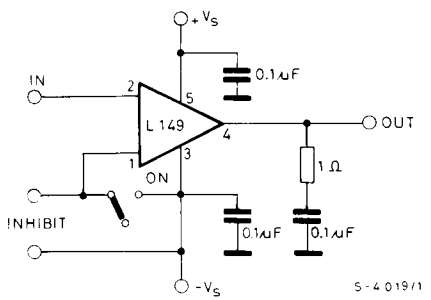
Pentawatt®

ORDERING NUMBER: L149V

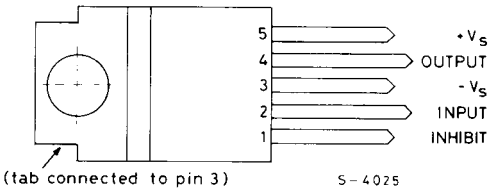
ABSOLUTE MAXIMUM RATINGS

V_s	Supply voltage	± 20	V
V_i	Input voltage	V_s	
$V_5 - V_4$	Upper power transistor V_{CE}	40	V
$V_4 - V_3$	Lower power transistor V_{CE}	40	V
I_o	DC output current	3	A
I_o	Peak output current (internally limited)	4	A
V_{INH}	Input inhibit voltage	$-V_s$ +5	V
		$-V_s$ -1.5	V
P_{tot}	Power dissipation at T_{case} = 75°C	25	W
T_{stg}, T_j	Storage and junction temperature	-40 to 150	°C

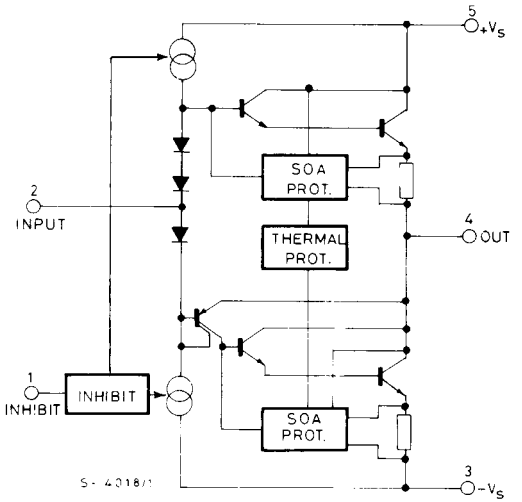
TEST CIRCUIT



CONNECTION DIAGRAM (top view)



SCHEMATIC DIAGRAM



THERMAL DATA

$R_{th\ j\text{-}case}$	Thermal resistance junction-case	max	3	°C/W

ELECTRICAL CHARACTERISTICS (T_j = 25°C, V_s = ± 16V)

Parameter		Test conditions	Min.	Typ.	Max.	Unit
V_s	Supply voltage				± 20	V
I_d	Quiescent drain current	V_s = ± 16V		30		mA
I_{in}	Input current	V_s = ± 16V V_i = 0V		200	400	µA
h_{FE}	DC current gain	V_s = ± 16V I_o = 3A	6000	10000		–
G_v	Voltage gain	V_s = ± 16V I_o = 1.5A		1		–
V_{CEsat}	Saturation voltage (for each transistor)	I_o = 3A			3.5	V
V_{os}	Input offset voltage	V_s = ± 16V			0.3	V
V_{INH}	Inhibit input voltage (pins 1-3)	ON condition			± 0.3	V
		OFF condition	± 1.8			
R_{INH}	Inhibit input resistance			2.0		KΩ
SR	Slew rate			30		V/µs
B	Power bandwidth	V_o = ± 10V, d = 1%, R_L = 8Ω		200		KHz

APPLICATION INFORMATION

Fig. 1 - High slew-rate power operational amplifier (SR = 13V/µs)

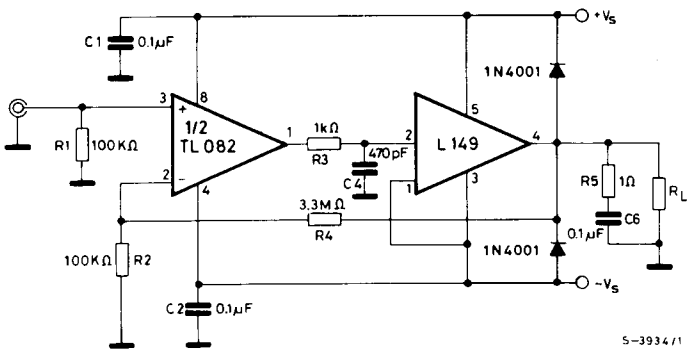


Fig. 2 - Maximum saturation voltage vs. output current

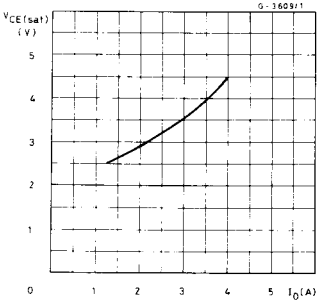


Fig. 3 - Current limiting characteristics

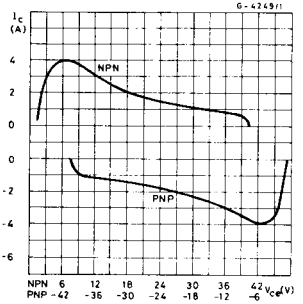


Fig. 4 - Supply voltage rejection vs. frequency

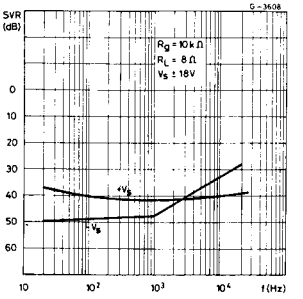


Fig. 5 - Distortion vs. output power (f = 1 KHz)

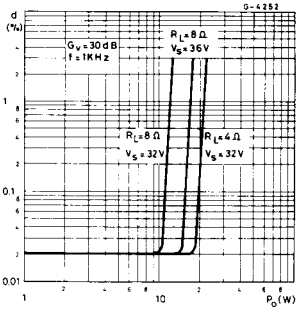


Fig. 6 - Distortion vs. output power (f= 10 KHz)

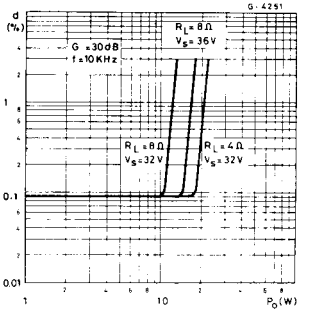


Fig. 7 - Output power vs. supply voltage

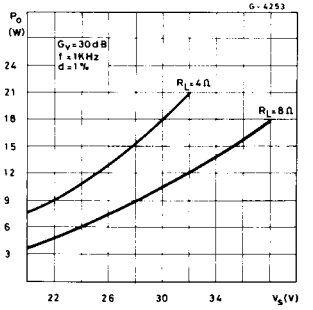
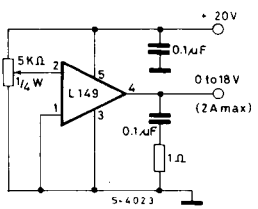


Fig. 8 - Electronic potentiometer (short-circuit protected)



MECHANICAL DATA

(Dimensions in mm)