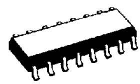
DUAL POWER OPERATIONAL AMPLIFIER

PRELIMINARY DATA

- OUTPUT CURRENT TO 1A
- OPERATES AT LOW VOLTAGES
- SINGLE OR SPLIT SUPPLY
- LARGE COMMON-MODE AND DIFFERENTIAL MODE RANGE
- GROUND COMPATIBLE INPUTS
- LOW SATURATION VOLTAGE
- THERMAL SHUTDOWN

The L272D is a monolithic integrated circuit in SO-16 packages intended for use as power operational amplifier in a wide range of applications including servo amplifiers and power supplies, compact disc, VCR, etc. The high gain and high output power capability provide superior performance wheatever an operational amplifier/power booster combination is required.



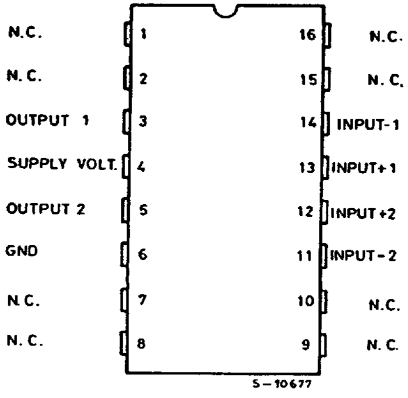
SO-16J

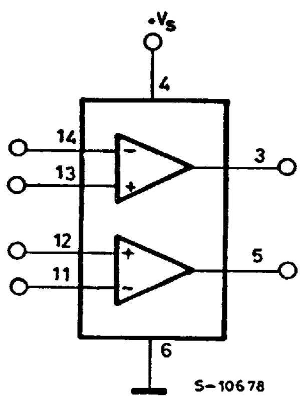
ORDERING NUMBER: L272D

ABSOLUTE MAXIMUM RATINGS

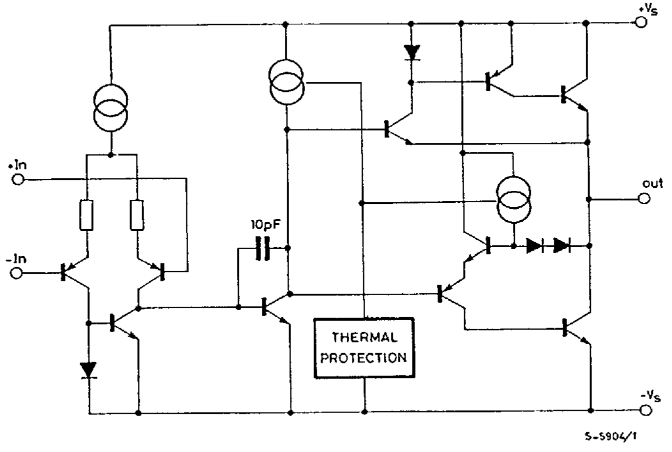
Symbol	Parameter	Value	Unit
V_s	Supply voltage	28	V
V_i	Input voltage	V_s	
V_i	Differential input voltage	$\pm V_s$	
I_o	DC Output current	1	A
I_p	Peak output current (non repetitive)	1.5	A
P_{tot}	Power dissipation at $T_{case} = 90°C$	1.2	W
T_{op}	Operating Temperature Range	−40 to +85	°C
T_{stg}, T_j	Storage and junction temperature	−40 to 150	°C

CONNECTION DIAGRAMS





SCHEMATIC DIAGRAM (one only)



THERMAL DATA

$R_{thj-alumina}$(*)	Thermal resistance junction-alumina	max 50	°C/W

(*) Thermal resistance junctions-pins with the chip soldered on the middle of an alumina supporting substrate measuring 15 x 20 mm; 0.65 mm thickness and infinite heathsink.

ELECTRICAL CHARACTERISTICS ($V_s = 24V$, $T_{amb} = 25°C$ unless otherwise specified)

Parameter		Test Conditions	Min.	Typ.	Max.	Unit
V_s	Supply voltage		4		28	V
I_s	Quiescent drain current	$V_o = \frac{V_s}{2}$; $V_s = 24V$		8	12	mA
		$V_o = \frac{V_s}{2}$; $V_s = 12V$		7.5	11	mA
I_b	Input bias current			0.3	2.5	μA
V_{os}	Input offset voltage			15	60	mV
I_{os}	Input offset current			50	250	nA
SR	Slew rate			1		V/μs
B	Gain-bandwidth product			350		KHz
R_i	Input resistance		500			KΩ
G_v	O.L. voltage gain	f = 100Hz	60	70		dB
		f = 1KHz		50		dB
e_N	Input noise voltage	B = 20KHz		10		μV
I_N	Input noise current	B = 20KHz		200		pA
CRR	Common Mode rejection	f = 1KHz	60	75		dB
SVR	Supply voltage rejection	f = 100Hz, R_G = 10KΩ, V_R = 0.5V; V_s = 24V	54	70		dB
		V_s = ±12V		62		dB
		V_s = ± 6V		56		dB
V_o	Output voltage swing	I_p = 0.1A		23		V
		I_p = 0.5A	21	22.5		V
C_s	Channel separation	f = 1KHz; R_L = 10Ω; G_v = 30dB; V_s = 24V		60		dB
		V_s = ± 6V		60		dB
d	Distortion	f = 1KHz, V_s = 24V, G_v = 30dB, R_L = ∞		0.5		%
T_{sd}	Thermal shutdown junction temperature			145		°C

Fig. 1 - Quiescent current vs. supply voltage

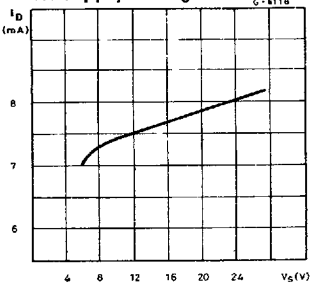


Fig. 2 - Quiescent drain current vs. temperature

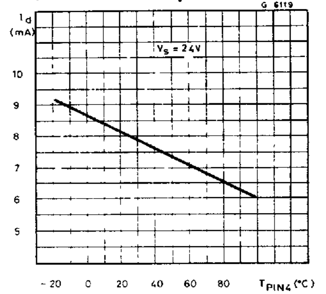


Fig. 3 - Open loop voltage gain

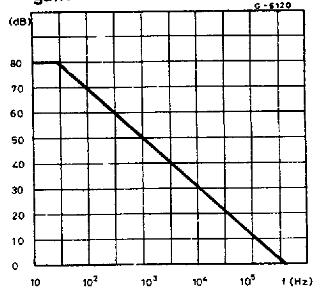


Fig. 4 - Output voltage swing vs. load current

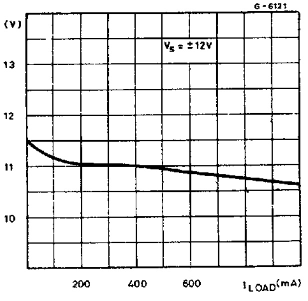


Fig. 5 - Output voltage swing vs. load current

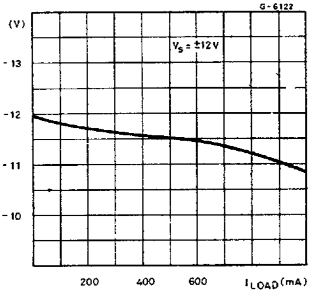


Fig. 6 - Supply voltage rejection vs. frequency

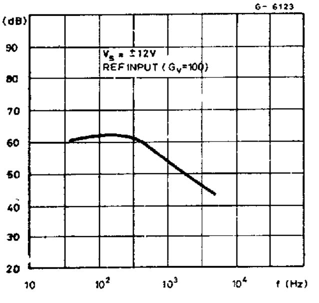


Fig. 7 - Channel separation vs. frequency

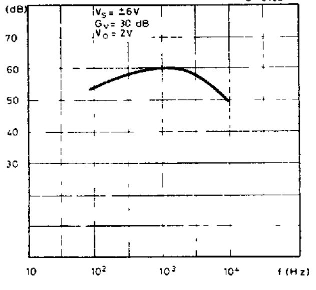


Fig. 8 - Common mode rejection vs. frequency