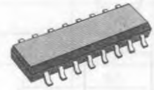
SGS-THOMSON
MICROELECTRONICS

L272D

DUAL POWER OPERATIONAL AMPLIFIERS

ADVANCE 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



SO-16J

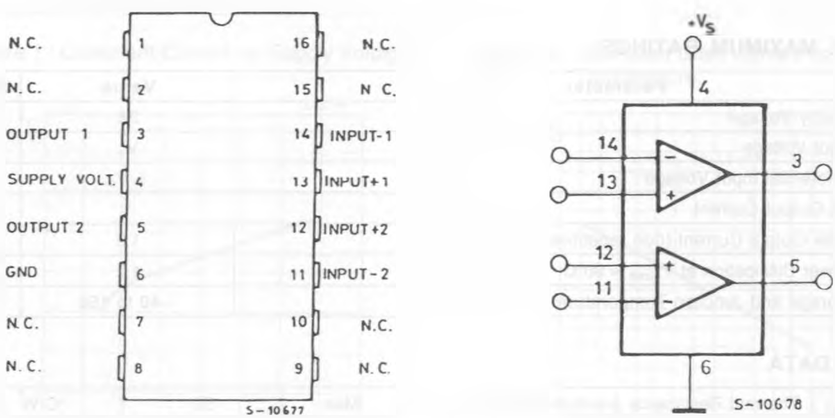
ORDER CODE : L272D

DESCRIPTION

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.

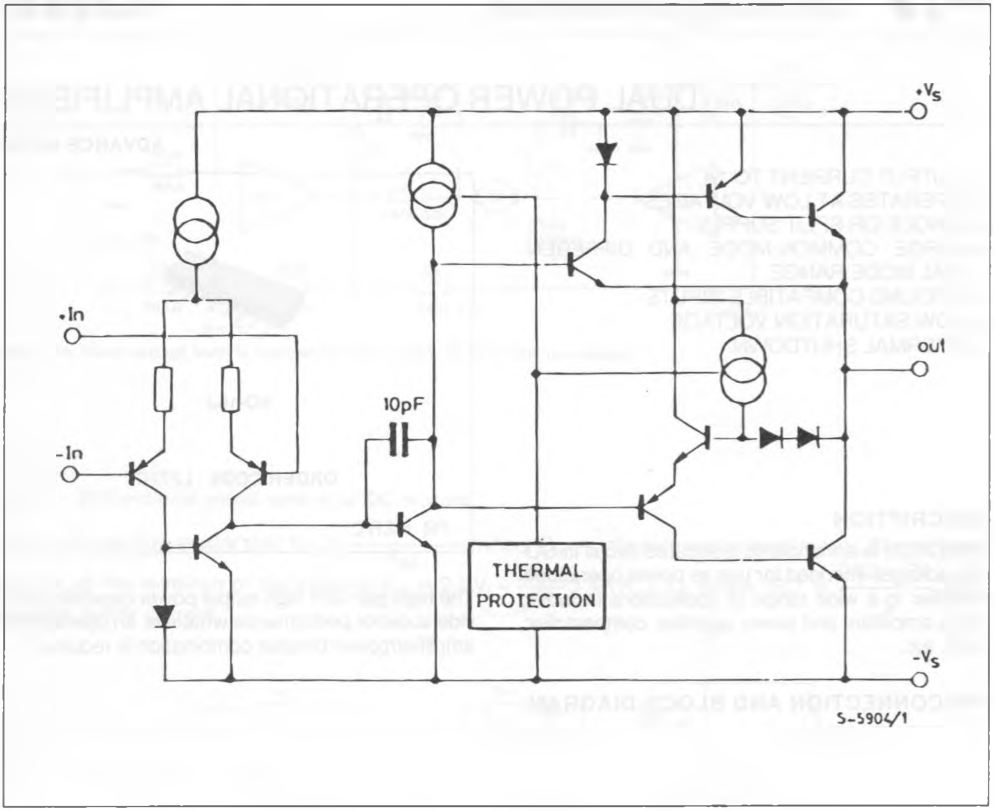
The high gain and high output power capability provide superior performance whatever an operational amplifier/power booster combination is required.

PIN CONNECTION AND BLOCK DIAGRAM



This is advanced information on a new product now in development or undergoing evaluation. Details are subject to change without notice

SCHEMATIC DIAGRAM (one only)



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_{stg}, T_j	Storage and Junction Temperature	– 40 to 150	°C

THERMAL DATA

$R_{thj\text{-}alumina(*)}$	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)

Symbol	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_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	V_s = 24V		70		dB
		R_G = 10KΩ	V_s = ± 12V	54	62		dB
		V_R = 0.5V	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

Figure 1 : Quiescent Current vs. Supply Voltage.

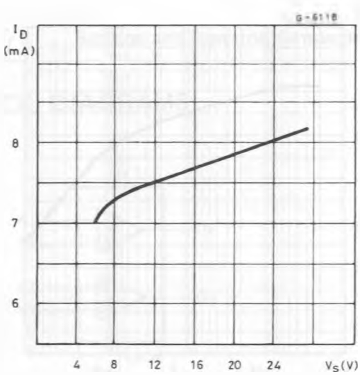


Figure 2 : Quiescent Drain Current vs. Temperature.

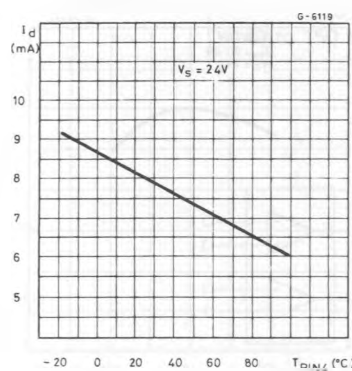


Figure 3 : Open Loop Voltage Gain.

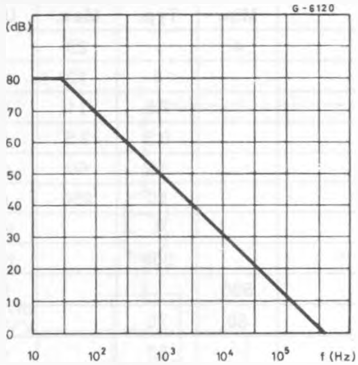


Figure 4 : Output Voltage Swing vs.Load Current.

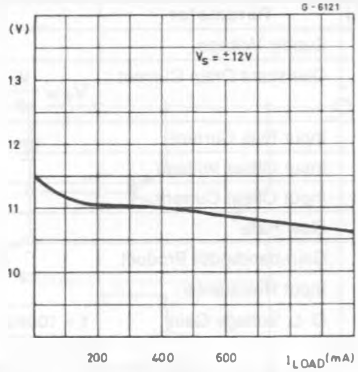


Figure 5 : Output Voltage Swing vs. Load Current.

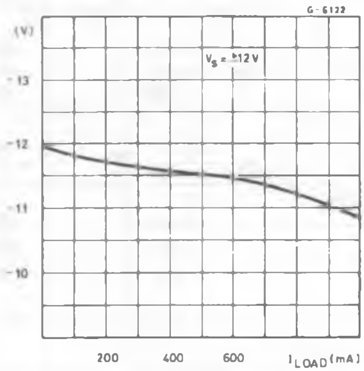


Figure 6 : Supply Voltage Rejection vs. Frequency.

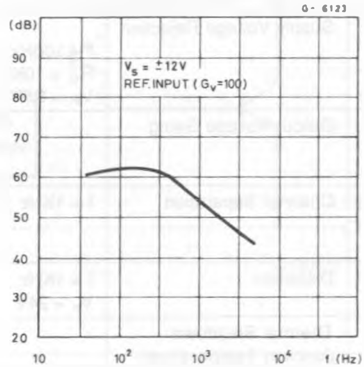


Figure 7 : Channel Separation vs. Frequency.

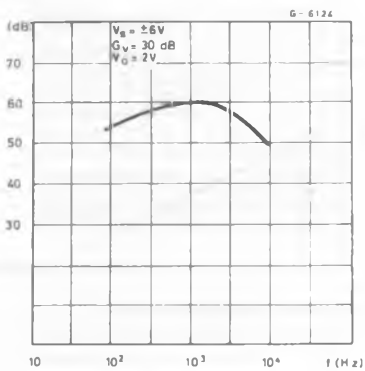


Figure 8 : Common Mode Rejection vs. Frequency.