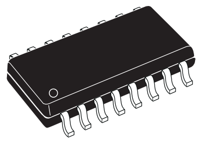
L2720D

LOW DROP DUAL POWER OPERATIONAL AMPLIFIER

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



SO-16 (narrow)
ORDERING NUMBER: L2720D

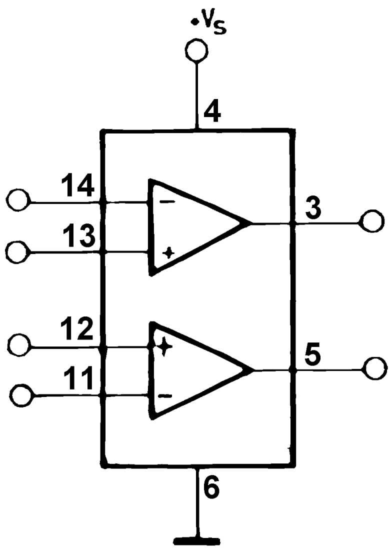
DESCRIPTION

The L2720D is a monolithic integrated circuits in SO-16 package, intended for use as power operational amplifiers in a wide range of applications including servo amplifiers and power supplies.

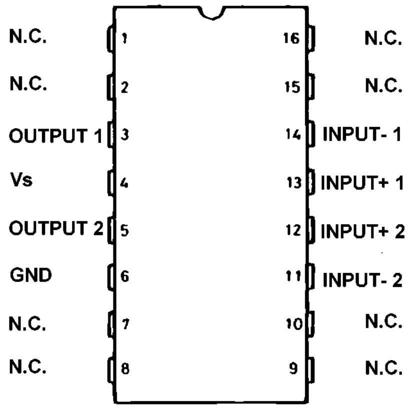
It is particularly indicated for driving, inductive loads, as motor and finds applications in compact-disc VCR automotive, etc.

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

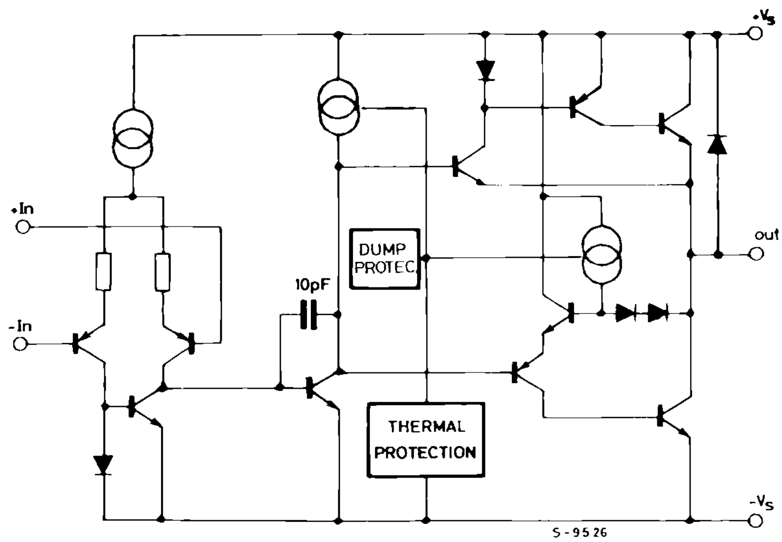
BLOCK DIAGRAM



PIN CONNECTION (Top view)



SCHEMATIC DIAGRAM (one section)



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_S	Supply Voltage	28	V
V_S	Peak Supply Voltage (50ms)	50	V
V_i	Input Voltage	Vs	
V_i	Differential Input Voltage	±Vs	
I_o	DC Output Current	1	A
I_p	Peak Output Current (non repetitive)	1.5	A
P_{tot}	Power Dissipation at T_{amb} = 50°C	800	mW
T_{op}	Operating Temperature	– 40 to 85	°C
T_{stg}, T_j	Storage and Junction Temperature	– 40 to 150	°C

THERMAL DATA

Symbol	Parameter		Value	Unit
$R_{th\ j\text{-}amb}$	Thermal Resistance Junction to ambient	Typ.	95	°C/W

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

Symbol	Parameter	Test Conditions	Min.	Typ.	Max.	Unit
V_S	Single Supply Voltage		4		28	V
V_S	Split Supply Voltage		± 2		± 14	V
I_S	Quiescent Drain Current	$V_O = \frac{V}{2}$ V_S = 24V V_S = 8V		10 9	15 15	mA mA
I_b	Input Bias Current			0.2	1	µA
V_{OS}	Input Offset Voltage				10	mV
I_{OS}	Input Offset Current				100	nA
SR	Slew Rate			2		V/µs
B	Gain-bandwidth Product			1.2		MHz
R_i	Input Resistance		500			kΩ
G_V	O.L. Voltage Gain	f = 100Hz f = 1kHz	70	80 60		dB
e_N	Input Noise Voltage	B = 22Hz to 22kHz		10		µV
I_N	Input Noise Voltage			200		pA
CMR	Common Mode Rejection	f = 1kHz	66	84		dB
SVR	Supply Voltage Rejection	f = 100Hz; V_S = 24V R_G = 10kΩ; Vs = ±12V V_R = 0.5V; Vs = ±6V	60	70 75 80		dB
$V_{DROP(H)}$	Drop voltage high	V_S = ±2.5V to ±12V I_p = 100mA I_p = 500mA		0.7 1	1.5	V
$V_{DROP(L)}$	Drop voltage low	V_S = ±2.5V to ±12V I_p = 100mA I_p = 500mA		0.3 0.5	1	V
C_S	Channel Separation	f = 1KHz; V_S = 24V R_L = 10Ω; V_S = 6V G_V = 30dB		60 60		dB
T_{sd}	Thermal Shutdown Junction Temperature			145		°C

Figure 1. Quiescent Current vs. Supply Voltage

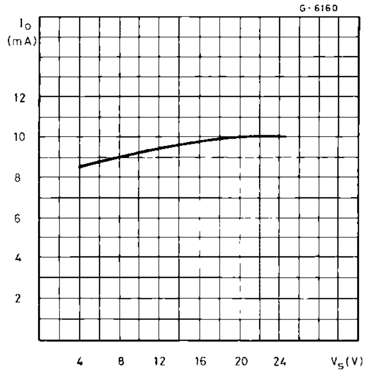


Figure 2. Open Loop Gain vs. Frequency

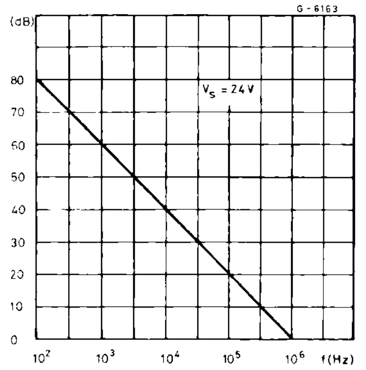


Figure 3. Common Mode Rejection vs. Frequency

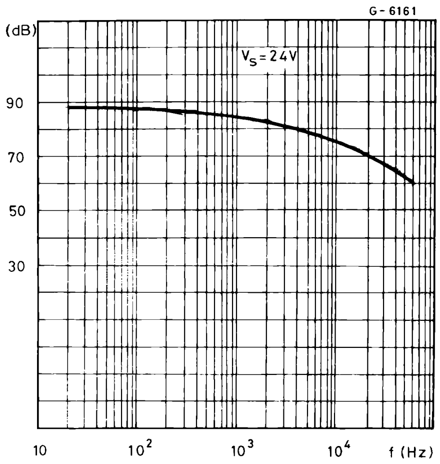


Figure 4. Output Swing vs. Load Current (V_S = ± 5V).

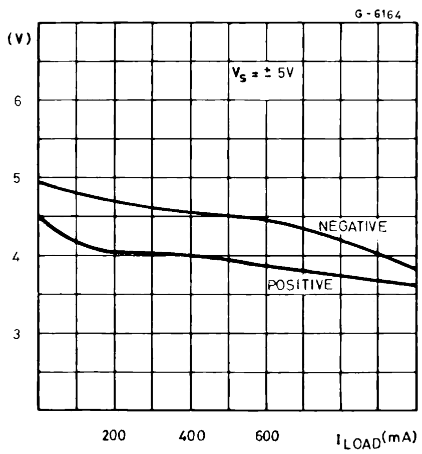


Figure 5. Output Swing vs. Load Current (V_S = ± 12V).

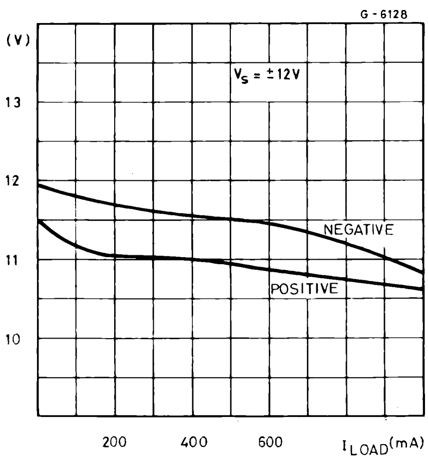


Figure 6. Supply Voltage rejection vs. Frequency

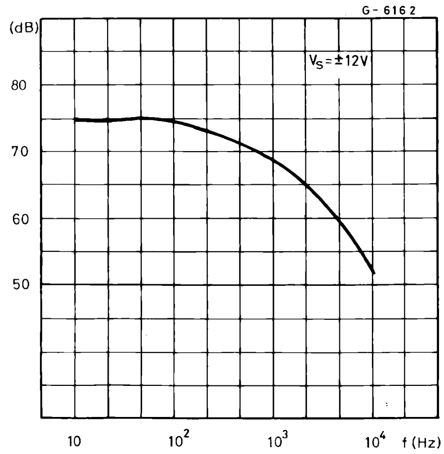
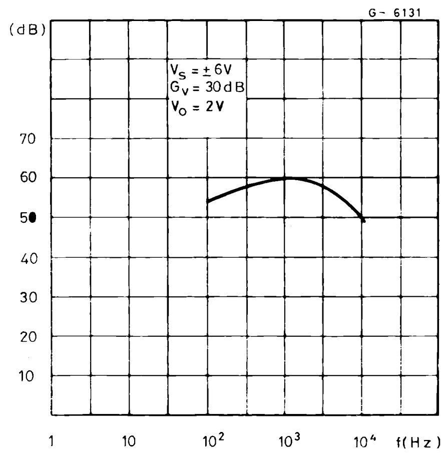
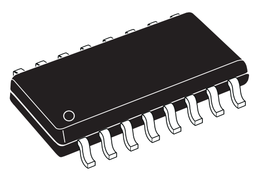


Figure 7. Channel Separation vs. Frequency



DIM.	mm			inch		
	MIN.	TYP.	MAX.	MIN.	TYP.	MAX.
A			1.75			0.069
a1	0.1		0.25	0.004		0.009
a2			1.6			0.063
b	0.35		0.46	0.014		0.018
b1	0.19		0.25	0.007		0.010
C		0.5			0.020	
c1	45° (typ.)					
D (1)	9.8		10	0.386		0.394
E	5.8		6.2	0.228		0.244
e		1.27			0.050	
e3		8.89			0.350	
F (1)	3.8		4	0.150		0.157
G	4.6		5.3	0.181		0.209
L	0.4		1.27	0.016		0.050
M			0.62			0.024
S	8°(max.)					

OUTLINE AND MECHANICAL DATA



SO16 Narrow

(1) D and F do not include mold flash or protrusions. Mold flash or potrusions shall not exceed 0.15mm (.006inch).