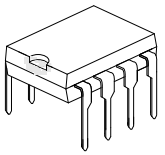
1.0A OUTPUT CURRENT, DUAL POWER, OPERATIONAL AMPLIFIERS



DIP-8

■ DESCRIPTION

The UTC **L272** as power operational amplifiers in a wide range of applications including servo amplifiers and power supplies, compacts disc, VCR, etc.

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

■ FEATURES

* Supply Voltage:4~28V
* Supply Current/Amplifier:6 mA (Max)
* Input Offset Voltage:60mV (Max)
* Common Mode Input Includes Ground
* Slew Rate: 3.2V/μs (Typ.)
*Output Current to 1.0A
*Internal Thermal Shutdown

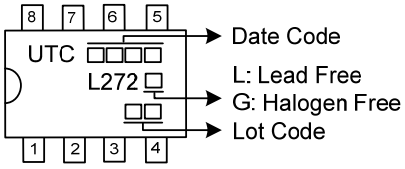
■ ORDERING INFORMATION

Ordering Number		Package	Packing
Lead Free	Halogen Free		
L272L-D08-T	L272G-D08-T	DIP-8	Tube

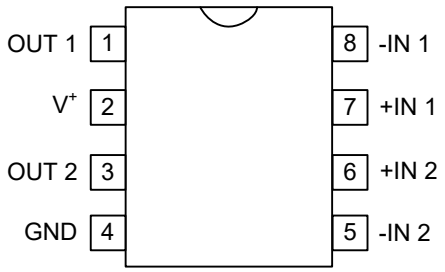
L272G-D08-T
(1)Packing Type
(2)Package Type
(3)Green Package

(1) T: Tube
(2) D08: DIP-8
(3) G: Halogen Free and Lead Free, L: Lead Free

■ MARKING



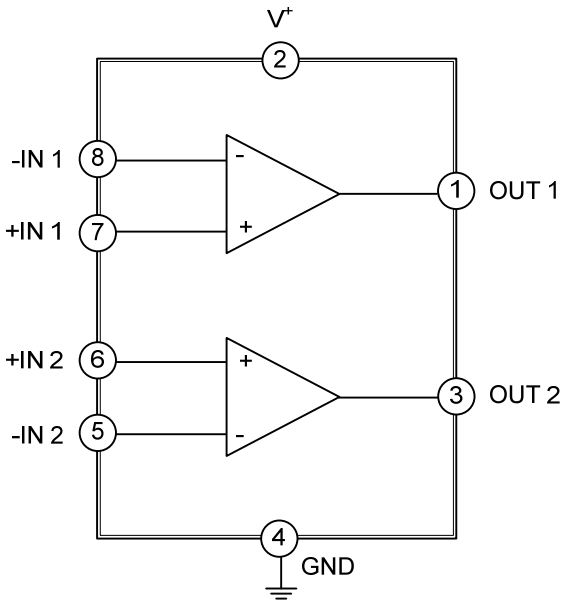
■ PIN CONFIGURATION



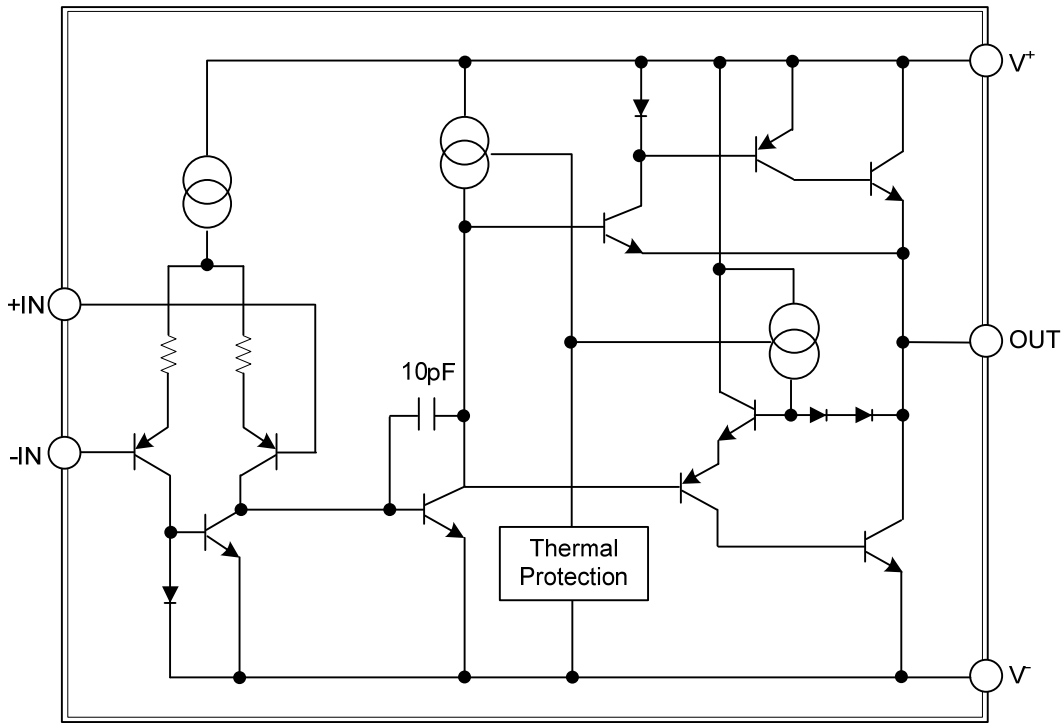
■ PIN DESCRIPTION

PIN NO.	PIN NAME	DESCRIPTION
1	OUT 1	Output of 1 AMP
2	-IN 1	Inverting input of 1 AMP
3	+IN 1	Non-inverting input of 1 AMP
4	V^-	Negative power supply
5	+IN 2	Non-inverting input of 2 AMP
6	-IN 2	Inverting input of 2 AMP
7	OUT 2	Output of 2 AMP
8	V^+	Positive power supply

■ BLOCK DIAGRAM



■ SCHEMATIC DIAGRAM



■ ABSOLUTE MAXIMUM RATING (T_A=25°C, unless other specified)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+	28	V
Input Voltage	V_{IN}	V^- ~ V^+	V
Differential Input Voltage	V_{ID}	Supply Voltage	V
DC Output Current	I_O	1	A
Peak Output Current (Non Repetitive)	I_P	1.5	A
Junction Temperature	T_J	+150	°C
Power Dissipation (T_A= 50°C)	P_D	1.0	W
Storage Temperature	T_{STG}	-40 ~ +150	°C

Note: 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	RATING	UNIT
Junction to Ambient	θ_{JA}	100	°C/W

■ RECOMMENDED OPWRAING CONDITIONS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V^+ - V^-	4 ~28	V
Operating Free-Air Temperature	T_{OPR}	-40 ~ +85	°C

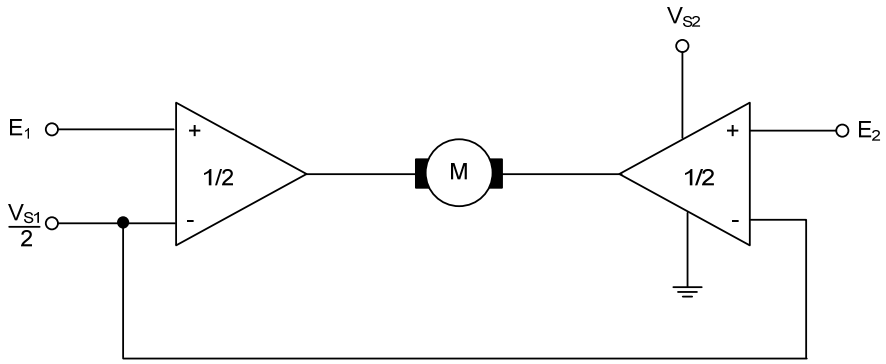
■ ELECTRICAL CHARACTERISTICS (T_A=25°C. V^+=24V, V^-=0V, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS		MIN	TYP	MAX	UNIT
Supply Current/Amplifier	I_Q	V^+=24V, V_O=V^+/2			4	6	mA
Power Supply Rejection Ratio	PSRR	$V^±$=±12V		54	75		dB
Input Offset Voltage	V_{OS}				10	60	mV
Input Bias Current	I_B				0.2	2.5	uA
Input Offset Current	I_{OS}				30	250	nA
Common Mode Rejection Ratio	CMRR			60	80		dB
Large Signal Voltage Gain	A_V	V_O=±10V, R_L=2.0k		60	80		dB
Output Voltage	V_O	I_L=0.1A	V_{OH}		V^+-0.6		V
			V_{OL}		V^-+0.4		V
		I_L=0.5A	V_{OH}	22.5	V^+-1		V
			V_{OL}		0.9	1.5	V
Slew Rate	SR				3.2		V/uS
Gain-Bandwidth Product	GBW				2.8		MHz
Input-Referred Voltage Noise	e_n	f=20kHz			9		uV
Input-Referred Current Noise	i_n	f=20kHz			180		pA
Total Harmonic Distortion	THD	f=1kHz, G_V=3dB			0.5		%
Channel Separation	C_S	f=1kHz, G_V=30dB	V_S=24V		60		dB
Thermal Shutdown Junction Temperature	T_{SD}				145		°C

■ TYPICAL APPLICATION CIRCUIT

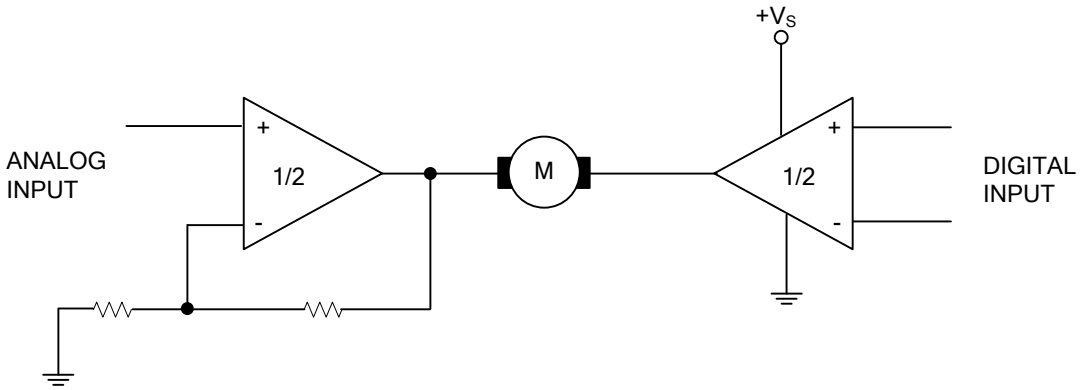
In order to avoid possible instability occurring into final stage the usual suggestions for the linear power stages are useful, as for instance:

1. layout accuracy
2. a 100nF capacitor corrected between supply pins and ground
3. boucherot cell (0.1 to 0.2 μF + 1 Ω series) between



V_{S1}=logic supply voltage
Must be V_{S2}>V_{S1}
E1, E2=logic inputs

Bidirectional DC Motor Control with μP Compatible Inputs



Capstan Motor Control in Video Recorders