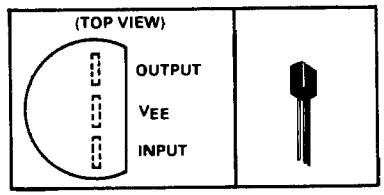
TYPE TL068C
3-PIN VOLTAGE FOLLOWER WITH JFET INPUT

D2660, AUGUST 1983

- Standard TO-92 Package
- Supply Current . . . . . 300 μA Max
- Wide Input/Output Voltage Range
- Low Input Bias Current
- Output Short-Circuit Protection
- High-Impedance Input . . . JFET Input Stage
- Internal Frequency Compensation
- Latch-Up-Free Operation

LP PACKAGE

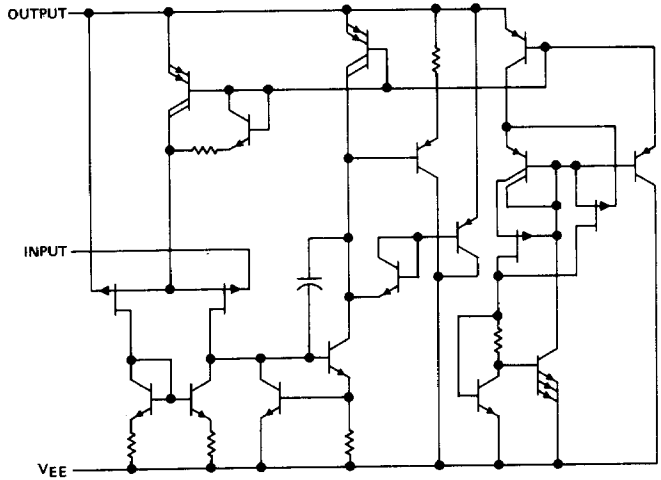


description

The TL068C is a JFET-input unity-gain amplifier featuring high input impedance, wide bandwidth, and low input bias current. A current-sourcing load such as a pull-up resistor is required for circuit operation.

The TL068C is characterized for operation over the commercial temperature range of 0°C to 70°C.

schematic



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)

Voltage from output to V_{EE}	36 V
Voltage from input to V_{EE}	36 V
Voltage from input to output	30 V
Duration of short circuit (see Note 1)	Unlimited
Continuous total dissipation at (or below) 25°C free-air temperature (see Note 2)	775 mW
Operating free-air temperature range	0°C to 70°C
Storage temperature range	−65°C to 150°C
Lead temperature 1,6 mm (1/16 inch) from case for 10 seconds	260°C

NOTES: 1. The output may be shorted to any point as long as the voltage from output to V_{EE} does not exceed 36 V. Temperature and/or V_{EE} must be limited to ensure that the dissipation rating is not exceeded.
2. For operation above 25°C free-air temperature, refer to Dissipation Derating Curves in Section 2.

ADVANCE INFORMATION

This document contains information on a new product. Specifications are subject to change without notice.

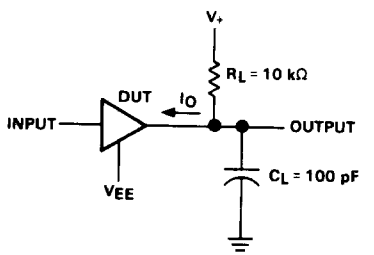
electrical characteristics, V_{EE} = −15 V, V_+ = +15 V, T_A = 25°C (unless otherwise noted)

PARAMETER		TEST CONDITIONS		MIN	TYP	MAX	UNITS
V_{IO}	Input offset voltage	I_O = 2 mA			3	15	mV
I_{IB}	Input bias current		T_A = 25°C		30	400	pA
			T_A = 0°C to 70°C			10	nA
V_{IR}	Input voltage range	V_{EE} = −15 V, V_+ = 15 V, R_L = 10 kΩ		12 to −11.5	13.5 to −12		V
A_V	Large-signal voltage amplification	V_{EE} = −15V, V_+ = 15 V, R_L = 10 kΩ		0.999	0.9997		V/V
k_{SVR}	Supply voltage rejection ratio	V_{EE} = −15 V to +10 V		70	78		dB
k_{LCS}	Load-circuit sensitivity ($\Delta V_{IO}/\Delta I_O$)	I_O = 0.5 mA to 5 mA			2	4	mV/mA
I_{OS}	Short-circuit output current				25		mA
I_{EE}	Supply current				−125	−300	μA

operating characteristics, V_{EE} = −15 V, V_+ = 15 V, T_A = 25°C, R_L = 10 kΩ, C_L = 100 pF

PARAMETER	TEST CONDITIONS		MIN	TYP	MAX	UNITS
Bandwidth				1		MHz
Slew rate	V_O = ±10 V	Positive-going edge		7		V/μs
		Negative-going edge		100		
Rise time	V_O = 100 mV			130		ns
Overshoot				20%		

PARAMETER MEASUREMENT INFORMATION



TEST CIRCUIT

TEXAS INSTRUMENTS
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