

**DUAL OPERATIONAL AMPLIFIERS**

**Description**

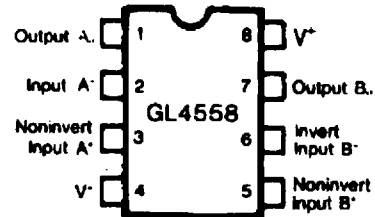
The GL4558 is dual general purpose operational amplifiers with half electrically similar to  $\mu$ A741 except that offset null capability is not provided.

The high common-mode input voltage range and the absence of latch-up make these amplifiers ideal for voltage follower application.

The devices are short circuit protected and the internal frequency compensation ensures stability without external components.

These are characterized for operation from 0°C to 70°C.

**PIN Configuration**



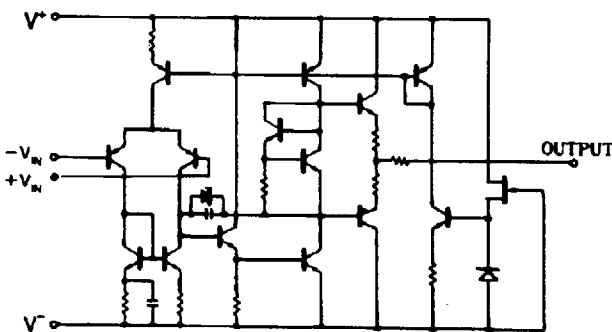
**Features**

- Short-Circuit Protection
- Wide common-mode and differential voltage ranges
- No frequency compensation required
- Low power consumption
- No latch-up
- 3 MHz unity gain bandwidth guaranteed
- Gain and phase match between amplifiers

**Absolute Maximum Ratings**

PARAMETER	GL4558	UNIT
Supply Voltage	$\pm 18$	V
Differential Input Voltage	$\pm 30$	V
Input Voltage	$\pm 15$	V
Power Dissipation	570	mW
Operating Temperature Range	0 to 70	°C
Storage Temperature Range	-55 to 125	°C
Lead Temperature	260	°C

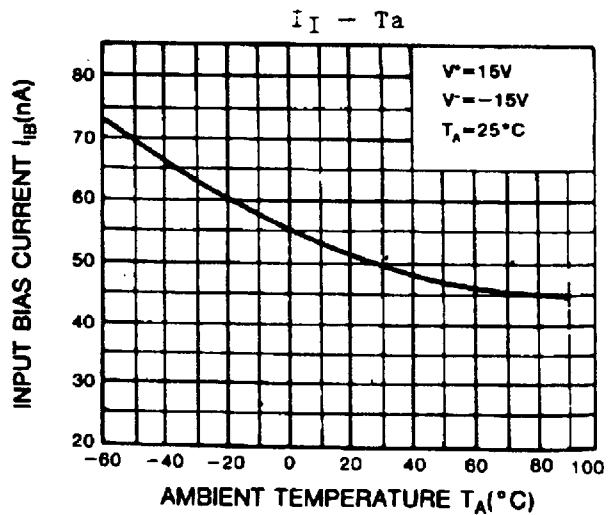
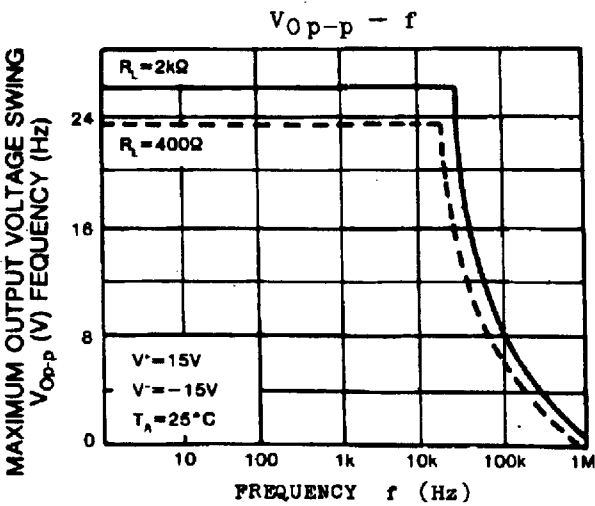
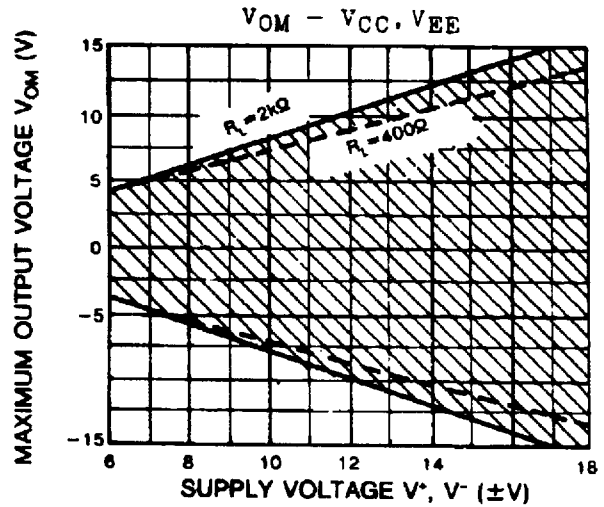
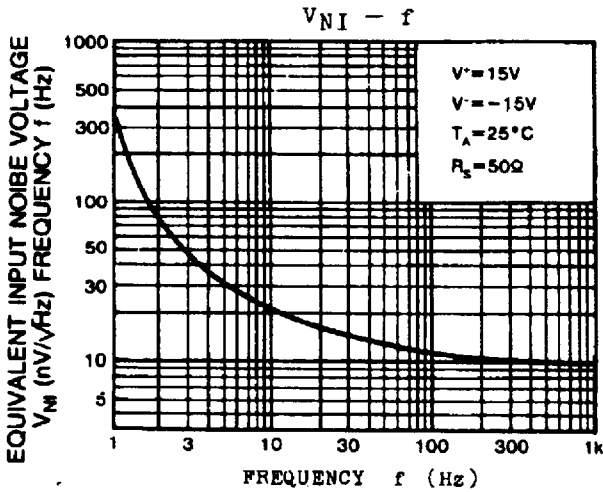
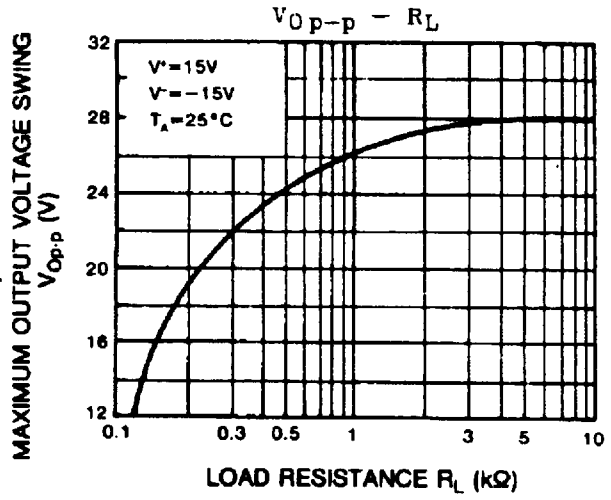
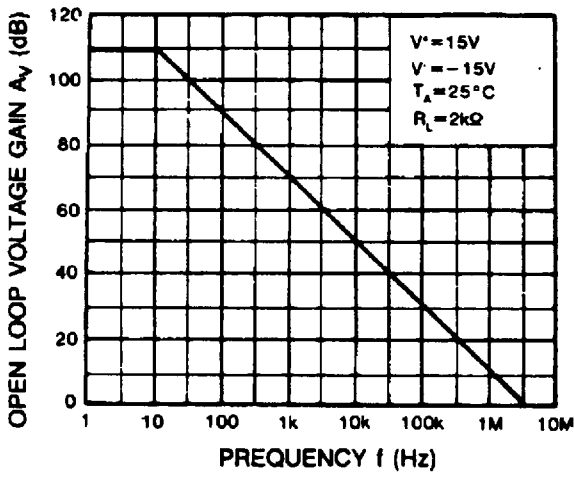
**Schematic Diagram (Each Amplifier)**



**Electrical Characteristics ( $V^+ = +15V$ ,  $V^- = -15V$ ,  $T_A = 25^\circ C$ )**

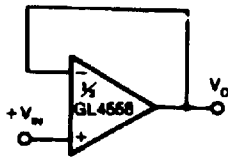
PARAMETER	SYMBOL	TEST CONDITIONS	GL4558				UNIT
			MIN	TYP	MAX	MIN	
Input Offset Voltage	$V_{IO}$	$R_s \leq 10k\Omega$	—	$\pm 0.5$	$\pm 5$	—	mV
Input Offset Current	$I_{IO}$		—	$\pm 5$	$\pm 200$	—	nA
Input Bias Current	$I_{IB}$		—	50	500	—	nA
Input Resistance	$r_i$		0.3	2.0	—	0.3	M $\Omega$
Large-Signal Voltage Gain	$A_V$	$R_L \geq 2k\Omega$ , $V_C = \pm 10V$	20	200	—	20	V/mV
Output Voltage Swing	$V_{OM}$	$R_L \geq 10k\Omega$	$\pm 12$	$\pm 14$	—	$\pm 12$	V
		$R_L \geq 2k\Omega$	$\pm 10$	$\pm 13$	—	$\pm 10$	V
Input Common-Mode Voltage range	$V_{ICR}$		$\pm 12$	$\pm 13$	—	$\pm 12$	V
Common Mode Rejection Ratio	CMRR	$R_s \leq 10k\Omega$	70	90	—	70	dB
Supply Voltage Rejection Ratio		$R_s \leq 10k\Omega$	—	30	150	—	$\mu V/V$
Supply Current	$I_{CC}$		—	2.3	5.6	—	mA
Slew Rate	SR	$R_L \geq 2k\Omega$	—	1.0	—	—	V/ $\mu s$
Power Consumption	$P_C$	$R_L = \infty$	—	100	170	—	mW
Input Noise Voltage	$V_N$	$R_s = 1k\Omega$ $f = 30Hz \sim 30KHz$	—	2.5	—	—	$\mu V_{rms}$
Source Current	$I_{source}$		—	40	—	—	mA
Sink Current	$I_{sink}$		—	40	—	—	mA

**Typical Performance Curves**

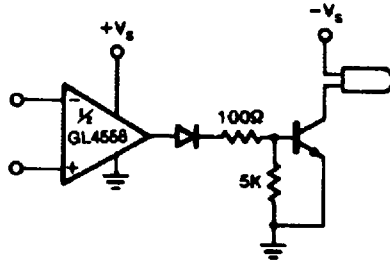


**Typical Applications**

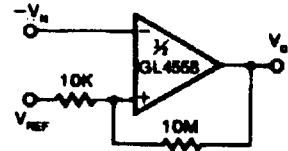
**Voltage Follower**



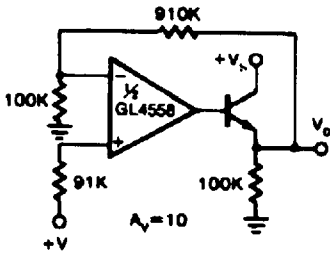
**Lamp Driver**



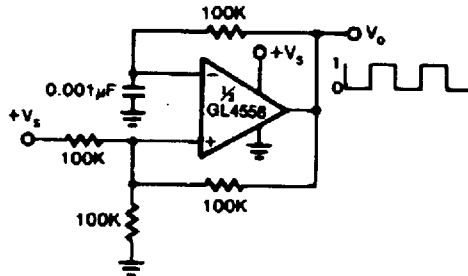
**Comparator With Hysteresis**



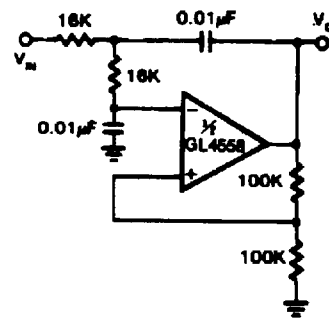
**Power Amplifier**



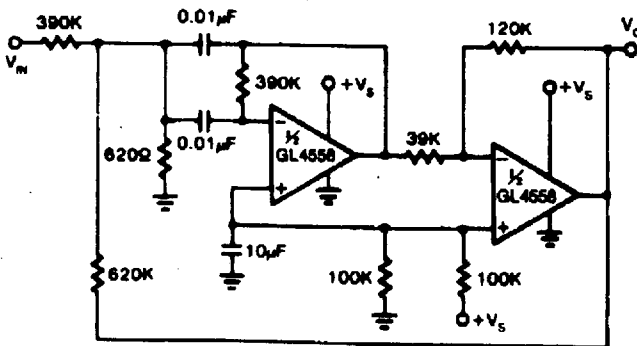
**Squarewave Oscillator**



**DC Coupled 1kHz Low-Pass Active Filter**



**1kHz Bandpass Active Filter**



**AC Coupled Inverting Amplifier**

