3.5 AMP POWER OP AMP

DESCRIPTION

The SG1173 is a monolithic operational amplifier with a high current output stage capable of sinking or sourcing up to 3.5 amps. It operates with supply voltages up to ±24V. Internal current limit, thermal shutdown, and on-chip compensation make the SG1173 easy to use both for new designs and retrofit applications. The input specifications of the amplifier are competitive with industry standard devices that offer much lower output currents.

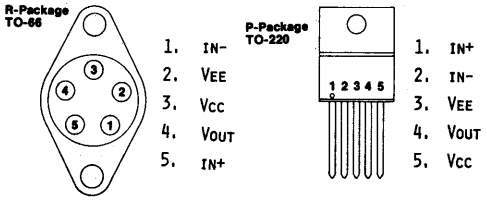
FEATURES

- **3.5 Amps output current**
- **Current limit and thermal shutdown protection**
- **Internal compensation**
- **Available in TO-220 and TO-66 packages**

APPLICATIONS

- **Motor drivers**
- **Servo systems**
- **Power amplifers**

CONNECTION DIAGRAMS (Top Views)

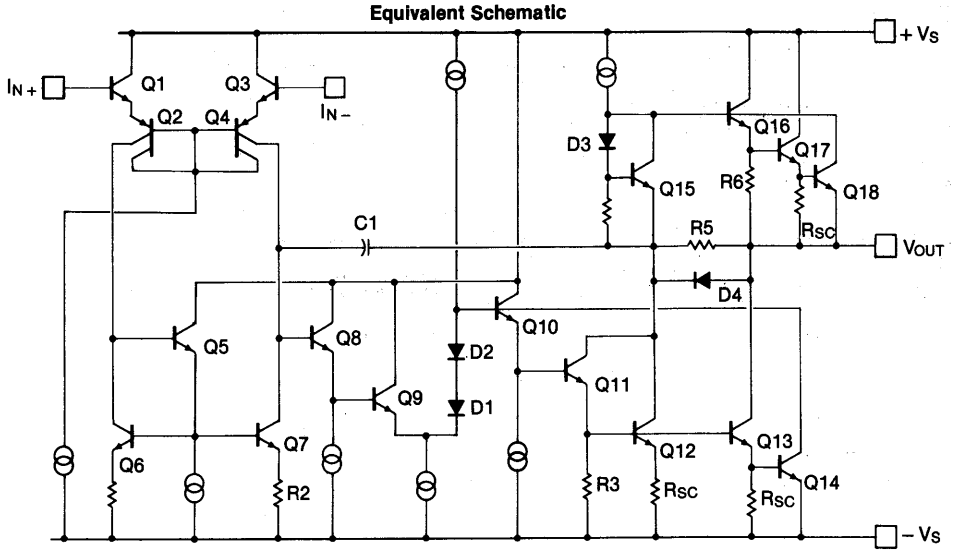


NOTE: CASE & TAB INTERNALLY CONNECTED TO VEE

PACKAGE INFORMATION

R-Package:TO-66	P-Package: TO-220
Θ_{JC} = 6°C/W max	Θ_{JC} = 5°C/W max
Θ_{JA} = 50°C/W max	Θ_{JA} = 65°C/W max
Order SG1173R SG3173R	Order SG1173P SG3173P

Equivalent Schematic



SG 1173

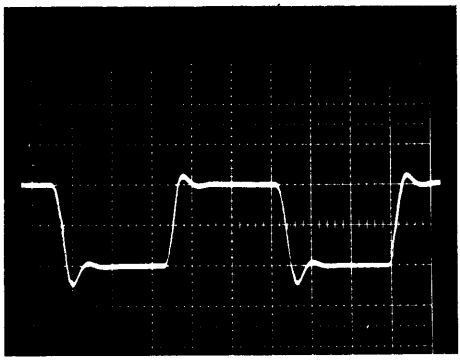
ABSOLUTE MAXIMUM RATINGS

Supply Voltage ..... ±25V
Output Current ..... Internally Limited
Differential Input Voltage ..... ±50V
Common Mode Voltage ..... ±25
Operating Junction Temp ..... 150°C

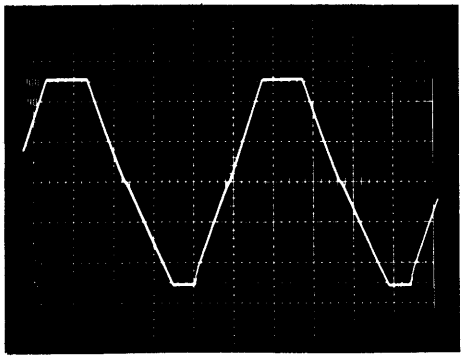
ELECTRICAL CHARACTERISTICS Vs = ±24V

SYMBOL	PARAMETER	CONDITIONS	1173			3173			UNITS
			MIN	TYP	MAX	MIN	TYP	MAX	
V_{IO}	Input Offset Voltage	25°C		2.0	4.0		2.0	6.0	mV
		$T_{low} - T_{high}$			6.0			8.0	mV
I_{IB}	Input Bias Current	25°C		250	500		250	700	nA
		$T_{low} - T_{high}$			750		1000		nA
I_{IO}	Input Offset Current	25°C		50	150		50	200	nA
		$T_{low} - T_{high}$			250			300	nA
V_{OUT}	Output Voltage Swing	R_L = 10Ω 25°C	±18	±20		±18	±20		Volts
		$T_{low} - T_{high}$	±17.5			±17.5			Volts
I_{OS}	Output Short Circuit Current	25°C	±3.5			±3.5			Amps
CMRR	Common Mode Rejection Ratio	ΔV_{CM} = ±12V 25°C	76	90		70	90		dB
		$T_{low} - T_{high}$	70						dB
PSRR	Power Supply Rejection Ratio	ΔV_S = 12V 25°C	80	90		76	90		dB
		$T_{low} - T_{high}$	74						dB
A_{VOL}	Open Loop Voltage Gain	$R_{L=10\Omega}$ $V_{OUT=10V}$ 25°C	40K	100k		25K	100k		V/V
		$T_{low} - T_{high}$	25K						V/V
I_S	Supply Current	25°C			20			20	mA
		$T_{low} - T_{high}$			30				mA

Notes: T_{low} = −55°C for SG1173R, 0°C for SG1173P and SG3173
T_{high} = 125°C for SG1173R, 70°C for SG1173P and SG3173



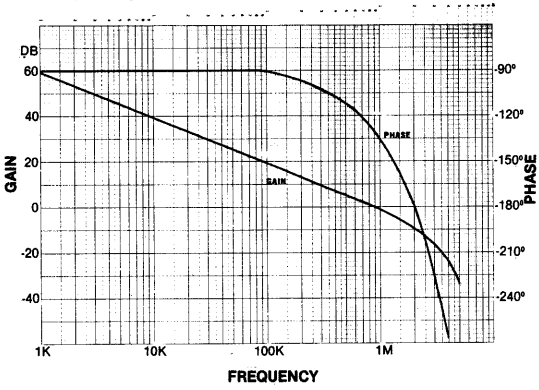
Small Signal Transient Response
50mV/vertical division
1μsec/horizontal division



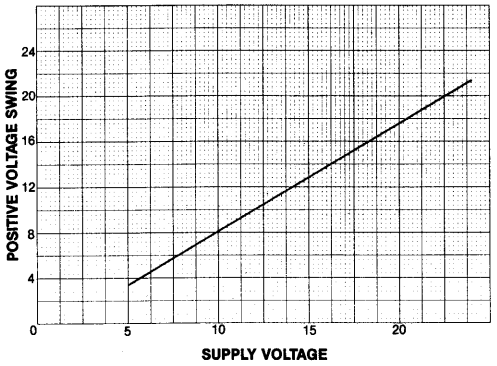
Large Signal Transient Response
5 V/vertical division
20μ sec/horizontal division

TYPICAL PERFORMANCE CHARACTERISTICS

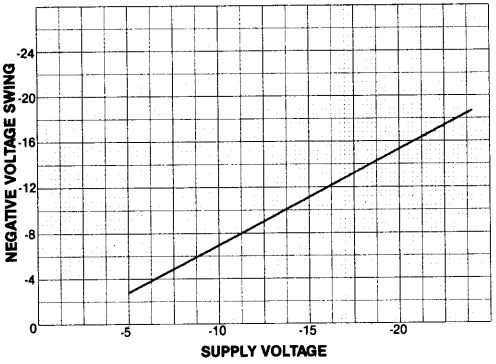
Frequency Response



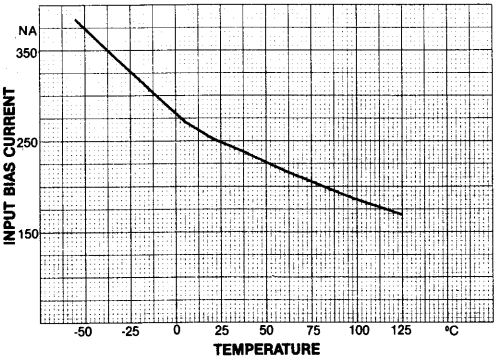
Positive Voltage Swing



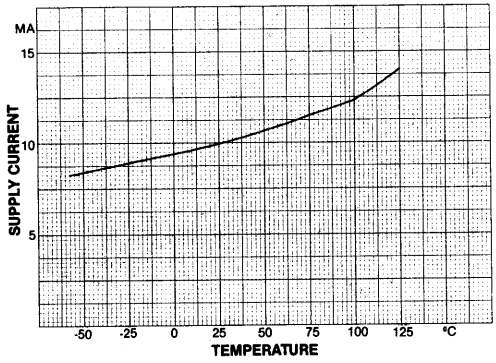
Negative Voltage Swing



Input Bias Current



Supply Current



Short Circuit Current