

Description

The S358 consists of two independent high gain Internally frequency compensated operational amplifiers designed to operate from a single power supply over a wide range of voltage.

Features

- Input common mode voltage range includes ground
- Internally frequency compensated for unity gain
- Large DC voltage gain : 100dB
- Wide bandwidth for unity gain : 1 MHz
- Very low power consumption
- Wide supply voltage range : Single : 3V ~ 30V, Dual : $\pm 1.5 \sim \pm 15V$

Applications

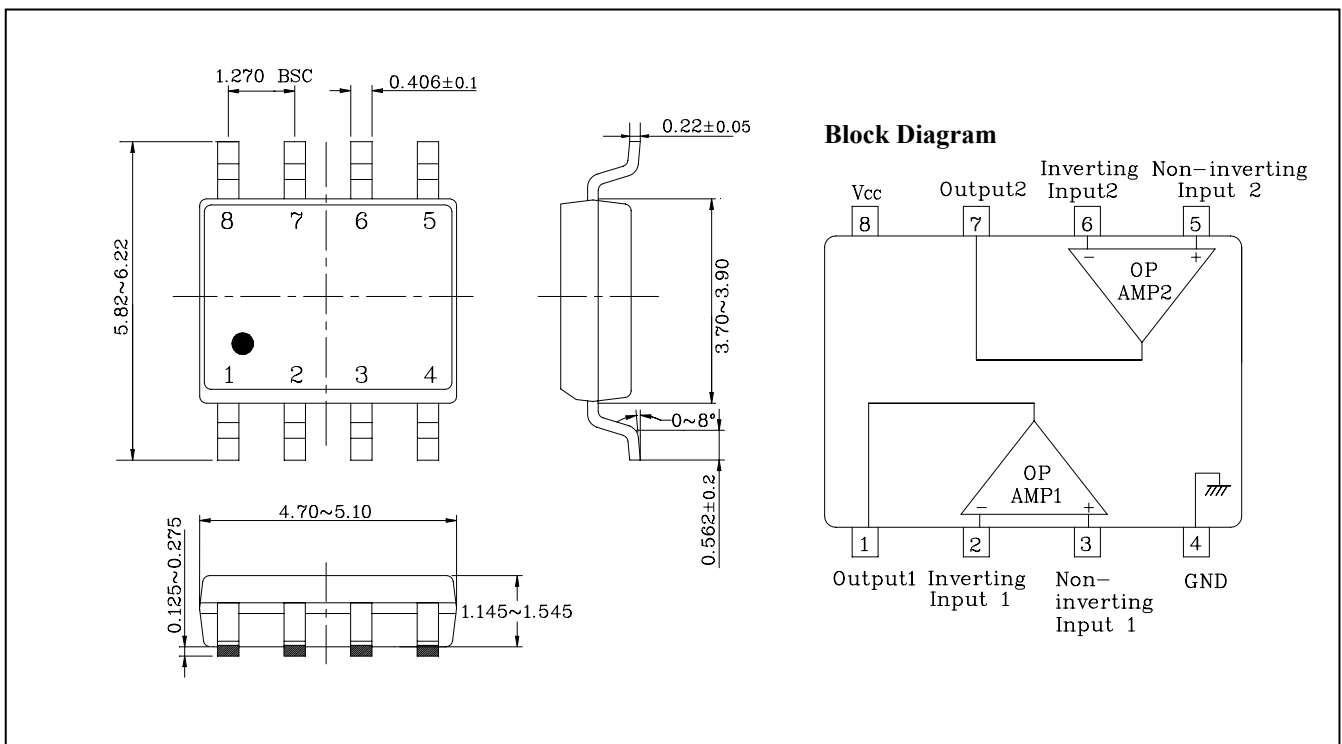
- Transducer amplifier
- DC gain blocks
- Conventional operational amplifiers

Ordering Information

Type NO.	Marking	Package Code
S358	S358	SOP-8

Outline Dimensions

unit : mm



Absolute maximum ratings

Characteristic	Symbol	Ratings	Unit
Supply voltage	V_{CC}	36 or ± 18	V
Differential input voltage	V_{IND}	32	V
Input voltage	V_{IN}	-0.3 ~ +32	V
Power Dissipation	P_D	300	mW
Operating temperature	T_{opr}	-45 ~ +85	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55 ~ 150	$^{\circ}\text{C}$

Electrical Characteristics

(Unless otherwise specified. $V_{CC} = 5\text{V}$ and $-45\text{ }^{\circ}\text{C} \leq T_a \leq +85\text{ }^{\circ}\text{C}$)

Characteristic	Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input offset voltage	V_{IOS}	$5\text{V} \leq V_{CC} \leq 30\text{V}$ (Ta=25 $^{\circ}\text{C}$)	-	± 2	± 7	mV
		$R_g = 0\Omega, 0\text{V} \leq V_{IC} \leq V_{CC} - 1.5\text{V}$	-	-	± 9	
Input offset voltage drift	$\Delta V_{IOS}/\Delta T$	$R_g = 0\Omega$	-	7	-	$\mu\text{V}/^{\circ}\text{C}$
Input offset current	I_{IOS}	(Ta=25 $^{\circ}\text{C}$)	-	± 5	± 50	nA
			-		± 150	
Input offset current drift	$\Delta I_{IOS}/\Delta T$	-	-	10	-	$\text{pA}/^{\circ}\text{C}$
Input bias current	I_{IB}	(Ta=25 $^{\circ}\text{C}$)	-	45	250	nA
			-	40	500	
Input common mode voltage range	V_{ICR}	$V_{CC} = 30\text{V}$ (Ta=25 $^{\circ}\text{C}$)	0	-	$V_{CC} - 1.5$	V
			0	-	$V_{CC} - 2$	V
Supply current	I_{CC}	$V_{CC} = 30\text{V}, R_L = \infty$	-	1	2	mA
		$V_{CC} = 5\text{V}, R_L = \infty$	-	0.7	1.2	
Large signal voltage gain	G_V	$V_{CC} = 15\text{V}$ (Ta=25 $^{\circ}\text{C}$)	25	100	-	V/mV
		$R_L \geq 2\text{K}\Omega$	15	-	-	
Output voltage swing	V_{OH}	$V_{CC} = 30\text{V}$				V
			$R_L = 2\text{K}\Omega$	26	-	
		$R_L = 10\text{K}\Omega$	27	28	-	
	V_{OL}	$V_{CC} = 5\text{V}, R_L \leq 10\text{K}\Omega$	-	3	20	mV
Common mode rejection ratio	CMRR	(Ta=25 $^{\circ}\text{C}$)	65	90	-	dB
Power supply rejection ratio	PSRR	(Ta=25 $^{\circ}\text{C}$)	65	100	-	dB
Output source current	I_{O+}	$V_{CC} = 15\text{V}$ (Ta=25 $^{\circ}\text{C}$)	20	40	-	mA
		$V_{IN+} = 1\text{V}, V_{IN-} = 0\text{V}$	10	20	-	
Output sink current	I_{O-}	$V_{CC} = 15\text{V}$ (Ta=25 $^{\circ}\text{C}$)	10	20	-	mA
		$V_{IN+} = 0\text{V}, V_{IN-} = 1\text{V}$	5	8	-	
		$V_{OUT} = 200\text{mV}$, (Ta=25 $^{\circ}\text{C}$) $V_{IN+} = 0\text{V}, V_{IN-} = 1\text{V}$	12	50	-	μA
Output short circuit to ground	I_{SC}	Ta=25 $^{\circ}\text{C}$	-	40	60	mA

Electrical Characteristic Curves

Fig. 1 $I_{CC}-V_{CC}$

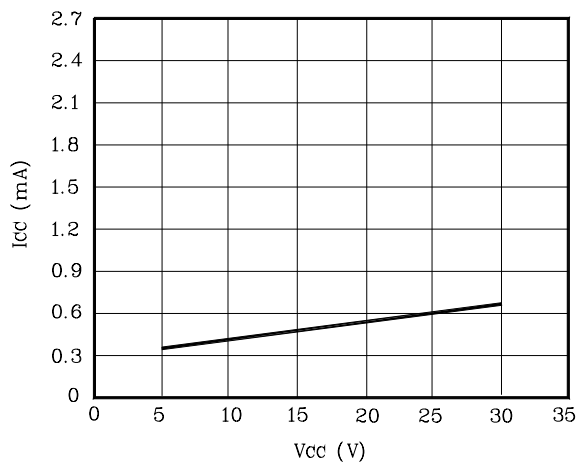


Fig. 2 $I_{IB}-V_{CC}$

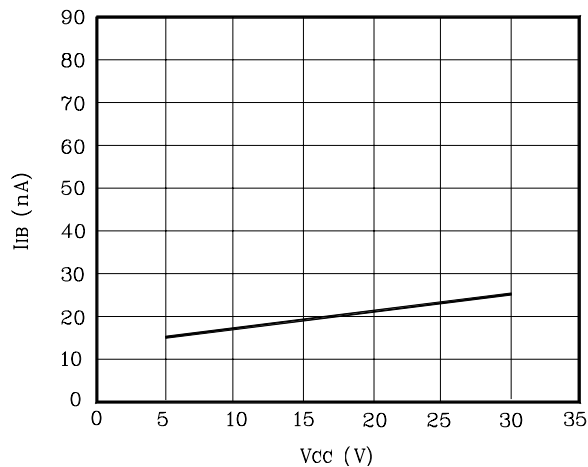


Fig. 3 $V_{IOS}-T_a$

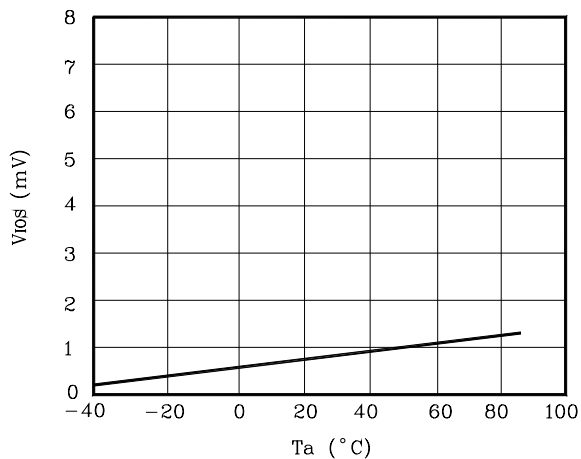


Fig. 4 I_O-T_a

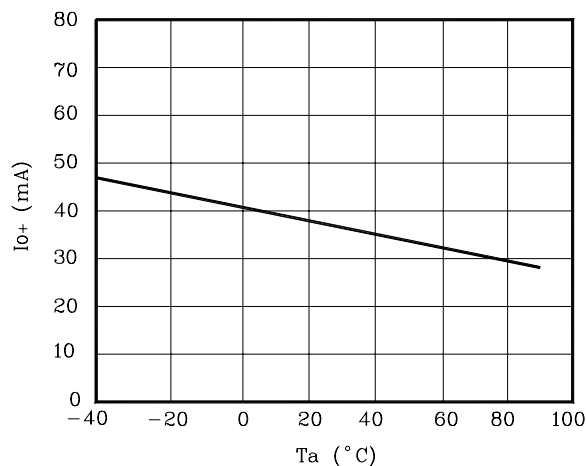


Fig. 5 CMRR-f

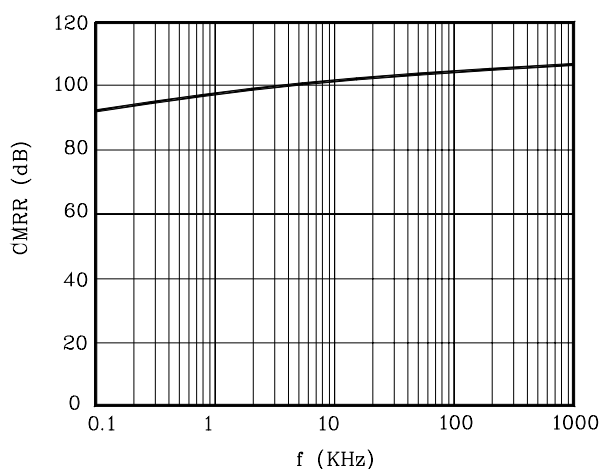
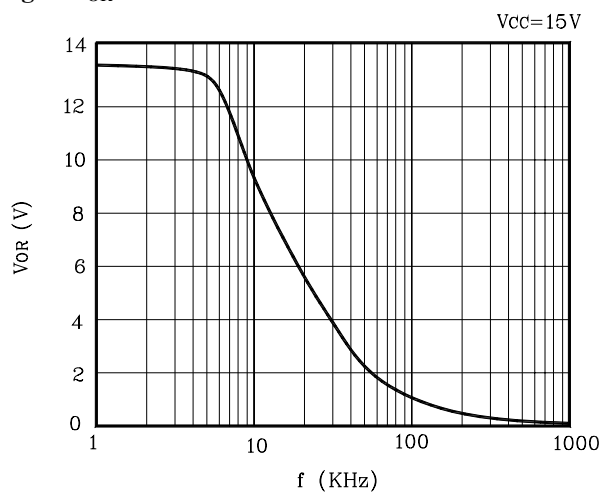


Fig. 6 $V_{OR}-f$



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