Suntac ELECTRONIC CORP

STC358 Low Power Dual OP AMP

Description

The STC358 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 : ±1.5 ~ ±15V

Applications

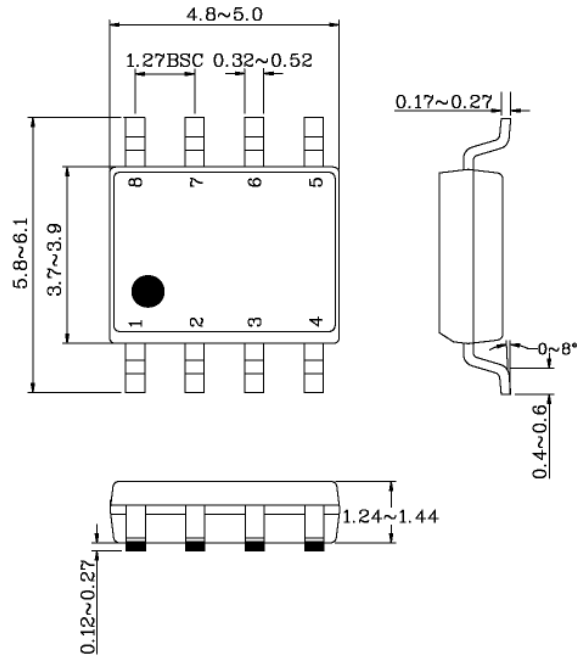
- Transducer amplifier
- DC gain blocks
- Conventional operational amplifiers

Ordering Information

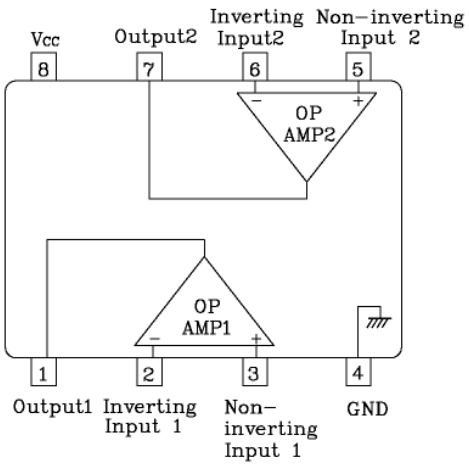
Type NO.	Marking	Package Code
STC358	STC358	SOP-8

Outline Dimensions

unit : mm



Block Diagram



STC358

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	°C
Storage temperature	T_{stg}	-55 ~ 150	°C

Electrical Characteristics

(Unless otherwise specified. V_{CC} = 5V and –45 °C ≤ Ta ≤ +85 °C)

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

Electrical Characteristic Curves

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

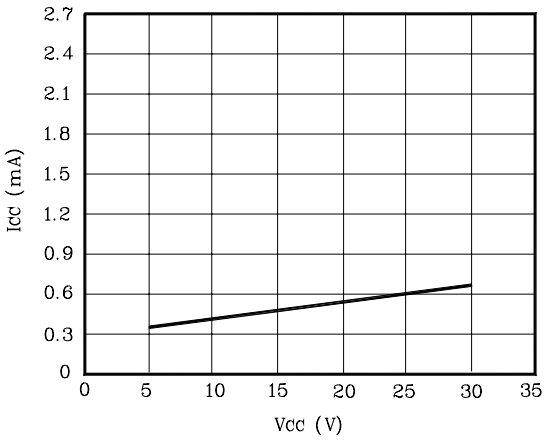


Fig. 2 I_{IB}-V_{CC}

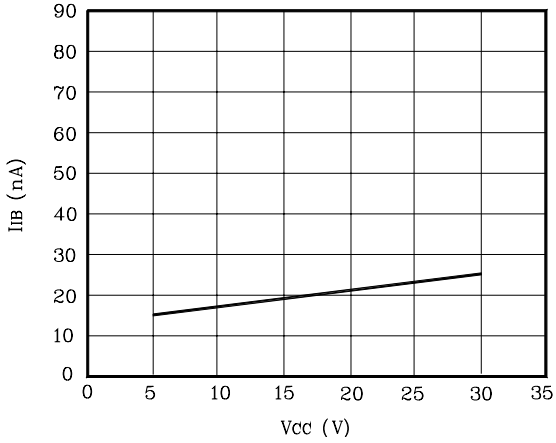


Fig. 3 V_{IOS}-T_a

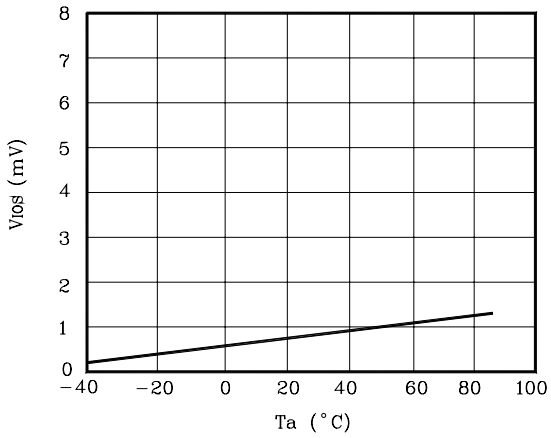


Fig. 4 I_O-T_a

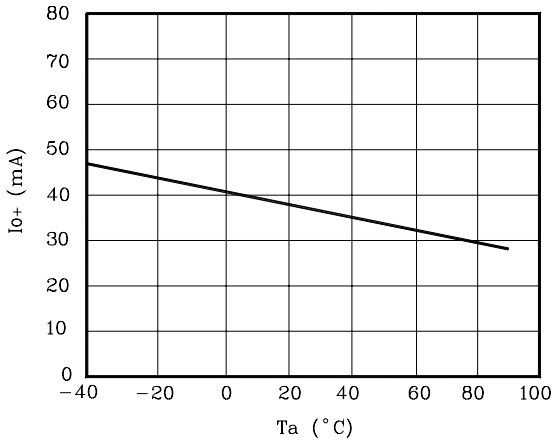


Fig. 5 CMRR-f

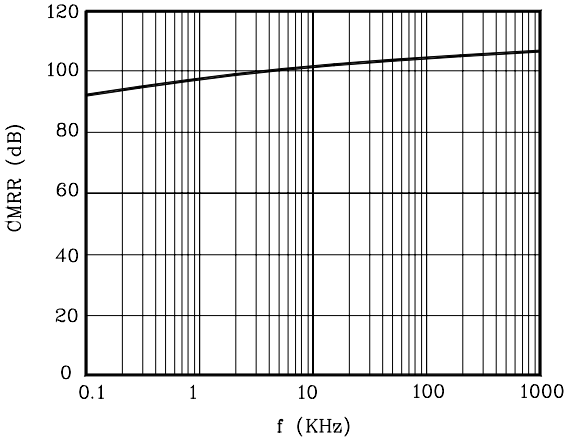


Fig. 6 V_{OR}-f