

LM358

LINEAR INTEGRATED CIRCUIT

DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

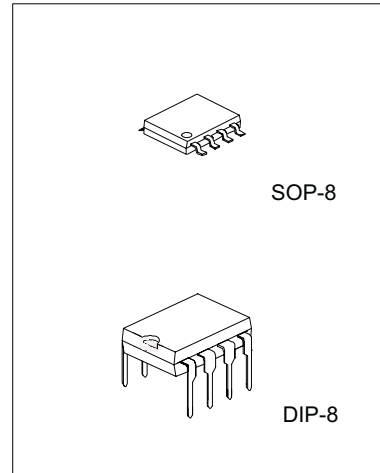
The Contek LM358 consists of two independent high gain, internally frequency compensated operational amplifier. It can be operated from a single power supply and also split power supplies.

FEATURES

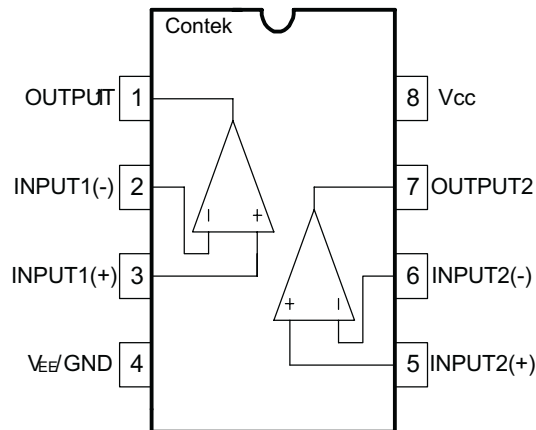
- *Internally frequency compensated for unity gain.
- *Wide power supply range 3V - 32V.
- *Input common-mode voltage range include ground.
- *Large DC voltage gain.

APPLICATIONS

- *General purpose amplifier.
- *Transducer amplifier.



PIN CONFIGURATIONS



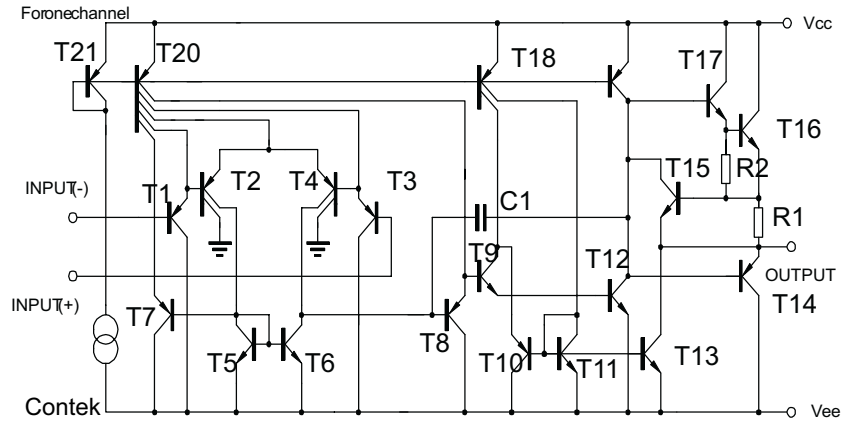
Contek Microelectronics Co.,Ltd.

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BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

PARAMETER	SYMBOL	VALUE	UNIT
Supply Voltage	V _{cc}	+16 or 32	V
Differential Input Voltage	V _{I(DIFF)}	+32	V
Input Voltage	V _I	-0.3 ~ +32	V
Output Short to Ground		Continuous	
Operating Temperature Range	TOPR	0 ~ +70	C
Storage Temperature Range	TSTG	-65 ~ +150	C



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ELECTRICAL CHARACTERISTICS (V_{CC}=5.0V, V_{EE}=GND, T_A=25 °C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN	TYP	MAX	UNIT
Input Offset Voltage	V _{IO}	V _{CM} =0V to V _{CC} -1.5V V _{O(P)} =1.4V, R _S =0Ω		2.9	7.0	mV
Input Offset Current	I _{IO}			5	50	nA
Input Bias Current	I _{BIAS}			45	250	nA
Input Common Mode Voltage	V _{I(R)}	V _{CC} =30V	0		V _{CC} -1.5	V
Power Supply Current	I _{CC}	R _L = , V _{CC} =30V		0.8	2.0	mA
		R _L = , Full Temperature Range		0.5	1.2	mA
Large Signal Voltage Gain	G _V	V _{CC} =15V, R _L >=2KΩ V _{O(P)} =1V to 11V	25	100		V/mV
Output Voltage Swing	V _{O(H)}	V _{CC} =30V, R _L =2KΩ	26			V
		V _{CC} =30V, R _L =10KΩ	27	28		
	V _{O(L)}	V _{CC} =5V, R _L >=10KΩ		5	20	mV
Common Mode Rejection Ratio	CMRR		65	80		dB
Power Supply Rejection Ratio	PSRR		65	100		dB
Channel Separation	CS	f=1KHZ to 20KHZ		120		dB
Short Circuit Current to Ground	I _{SC}			40	60	mA
Output Current	I _{SOURCE}	V _{I(+)} =1V, V _{I(-)} =0V V _{CC} =15V, V _{O(P)} =2V	10	30		mA
	I _{SINK}	V _{I(+)} =0V, V _{I(-)} =1V V _{CC} =15V, V _{O(P)} =2V	10	15		mA
		V _{I(+)} =0V, V _{I(-)} =1V V _{CC} =15V, V _{O(P)} =200mV	12	100		mA
Differential Input Voltage	V _{I(DIFF)}				V _{CC}	V

TYPICAL PERFORMANCE CHARACTERISTICS

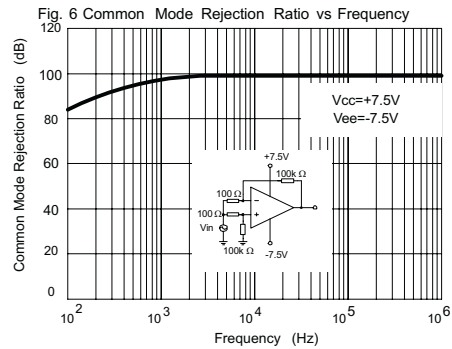
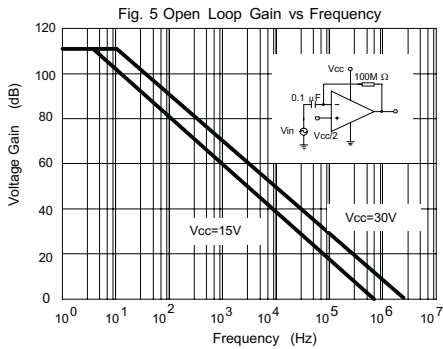
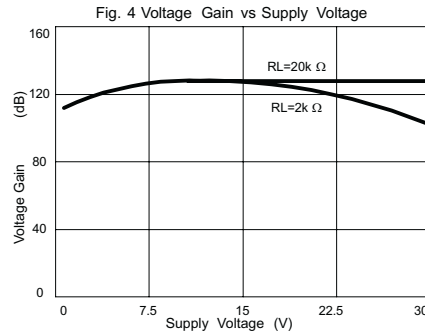
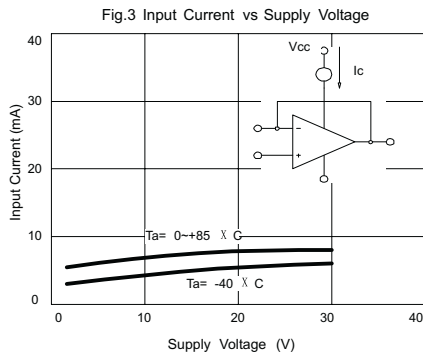
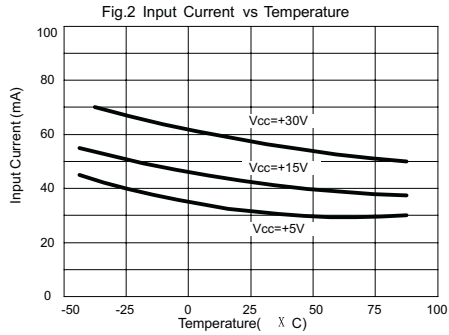
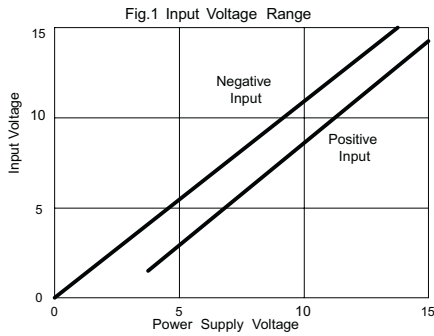


Fig. 7 Voltage Follower Pulse Response

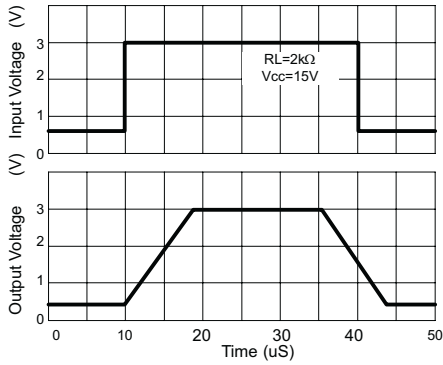


Fig. 8 Voltage Follower Response (Small Signal)

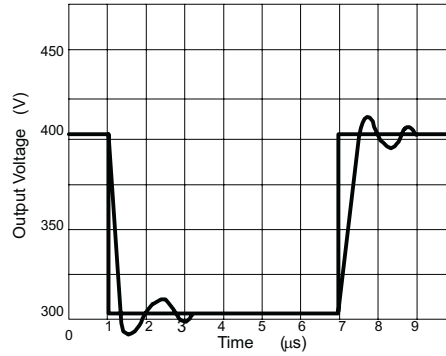


Fig. 9 Gain vs Large Signal Frequency

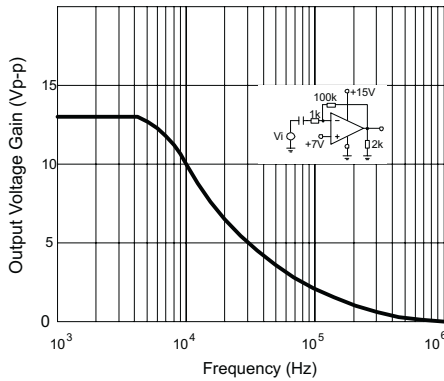


Fig. 10 Output Current Sinking vs Output Voltage

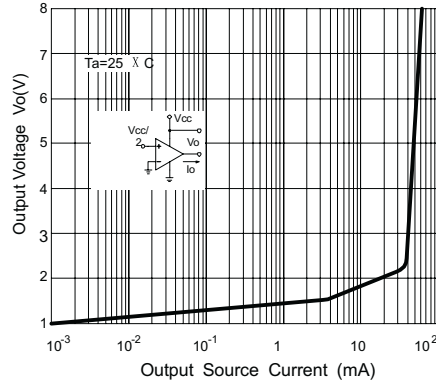


Fig. 11 Output Sink Current vs Output Voltage

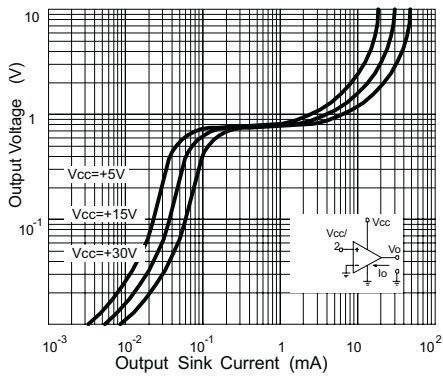


Fig.12 Current Limiting vs Temperature

