



LM358

LINEAR INTEGRATED CIRCUIT

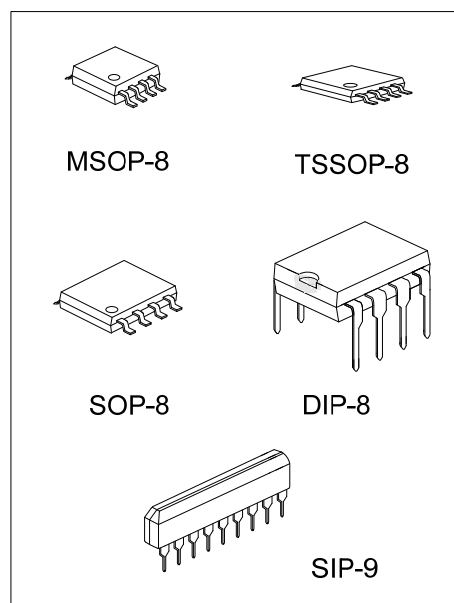
DUAL OPERATIONAL AMPLIFIER

DESCRIPTION

The UTC **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.

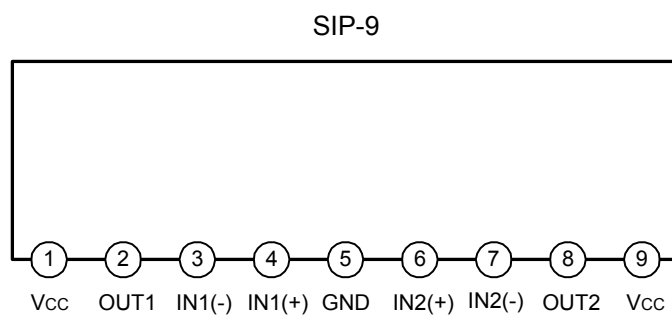
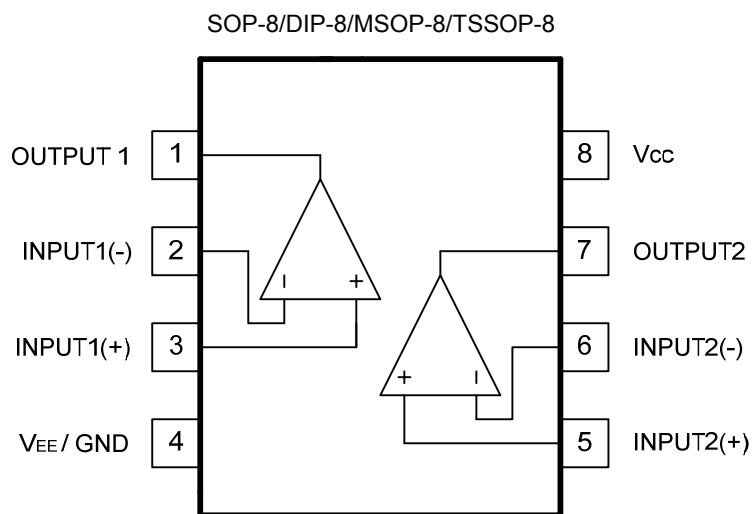


ORDERING INFORMATION

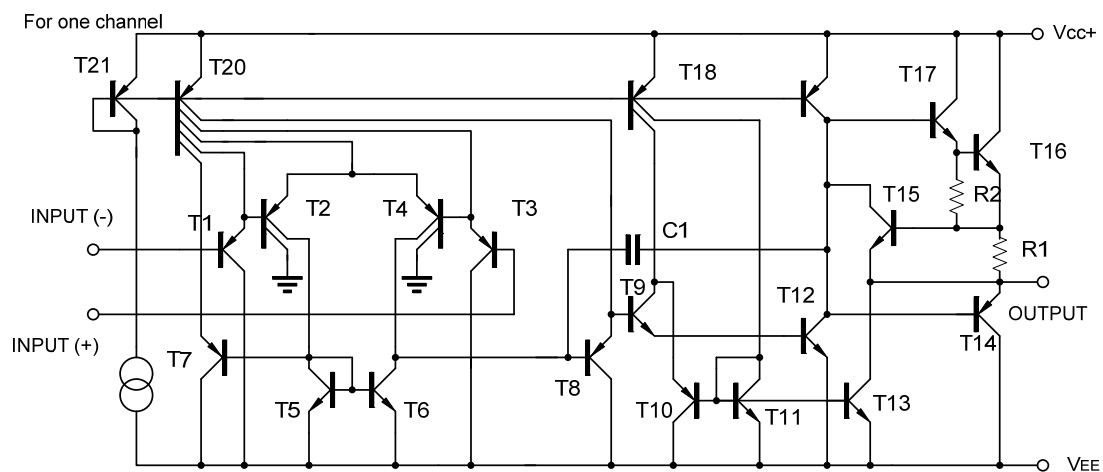
Ordering Number		Package	Packing
Lead Free	Halogen-Free		
LM358L-D08-T	LM358G-D08-T	DIP-8	Tube
LM358L-G09-T	LM358G-G09-T	SIP-9	Tube
LM358L-P08-R	LM358G-P08-R	TSSOP-8	Tape Reel
LM358L-P08-T	LM358G-P08-T	TSSOP-8	Tube
LM358L-S08-R	LM358G-S08-R	SOP-8	Tape Reel
LM358L-S08-T	LM358G-S08-T	SOP-8	Tube
LM358L-SM1-R	LM358G-SM1-R	MSOP-8	Tape Reel
LM358L-SM1-T	LM358G-SM1-T	MSOP-8	Tube

LM358L-D08-T (1)Packing Type (2)Package Type (3)Lead Free	(1) R: Tape Reel, T: Tube (2) D08: DIP-8, G09: SIP-9, S08: SOP-8, SM1: MSOP-8, P08: TSSOP-8 (3) G: Halogen Free, L: Lead Free
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■ PIN DESCRIPTION



■ BLOCK DIAGRAM



■ ABSOLUTE MAXIMUM RATINGS

PARAMETER		SYMBOL	RATINGS	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	
Power Dissipation	SIP-9	P_D	750	mW
	DIP-8		625	
	SOP-8		440	
	TSSOP-8		360	
	MSOP-8		300	
Junction Temperature		T_J	+125	°C
Operating Temperature		T_{OPR}	-40 ~ +85	°C
Storage Temperature		T_{STG}	-65 ~ +150	°C

Note Absolute maximum ratings are those values beyond which the device could be permanently damaged. Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS ($V_{CC}=5.0V$, $V_{EE}=GND$, $T_A=25^\circ C$, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
Input Offset Voltage	$V_{I(OFF)}$	$V_{CM}=0V$ to $V_{CC}-1.5V$ $V_{O(P)}=1.4V$, $R_S=0\Omega$		2.0	5.0	mV
Input Common Mode Voltage	$V_{I(CM)}$	$V_{CC}=30V$	0		$V_{CC}-1.5$	V
Differential Input Voltage	$V_{I(DIFF)}$				V_{CC}	V
Output Voltage Swing	V_{OH}	$V_{CC}=30V$, $R_L=2K\Omega$	26			V
		$V_{CC}=30V$, $R_L=10K\Omega$	27	28		V
	V_{OL}	$V_{CC}=5V$, $R_L \geq 10K\Omega$		5	20	mV
Large Signal Voltage Gain	G_V	$V_{CC}=15V$, $R_L \geq 2K\Omega$ $V_{O(P)}=1V \sim 11V$	25	100		V/mV
Power Supply Current	I_{CC}	$R_L=\infty$, $V_{CC}=30V$		0.8	2.0	mA
		$R_L=\infty$, Full Temperature Range		0.5	1.2	mA
Input Offset Current	$I_{I(OFF)}$			5	50	nA
Input Bias Current	$I_{I(BIAS)}$			45	250	nA
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
		$V_I(+)=0V$, $V_I(-)=1V$ $V_{CC}=15V$, $V_{O(P)}=2V$	10	15		mA
	I_{SINK}	$V_I(+)=0V$, $V_I(-)=1V$ $V_{CC}=15V$, $V_{O(P)}=200mV$	12	100		μA
Common Mode Rejection Ratio	CMRR		65	80		dB
Power Supply Rejection Ratio	PSRR		65	100		dB
Channel Separation	CS	$f=1KHZ \sim 20KHZ$		120		dB

TYPICAL CHARACTERISTICS

Fig.1 Input Voltage Range

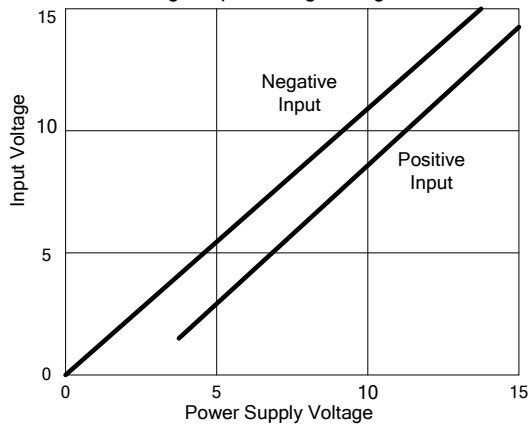


Fig.2 Input Current vs Temperature

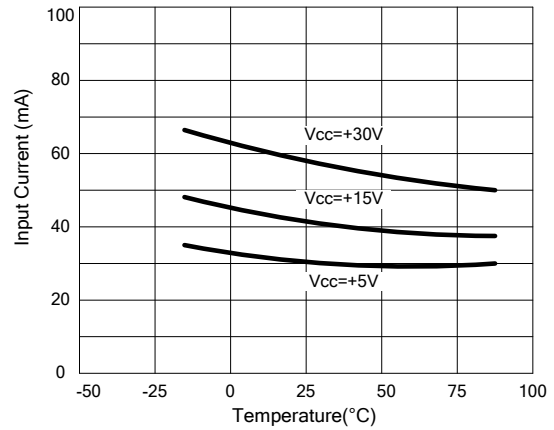


Fig.3 Supply Current vs Supply Voltage

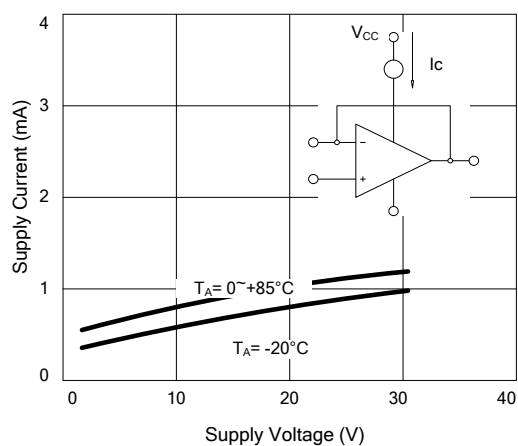


Fig.4 Voltage Gain vs Supply Voltage

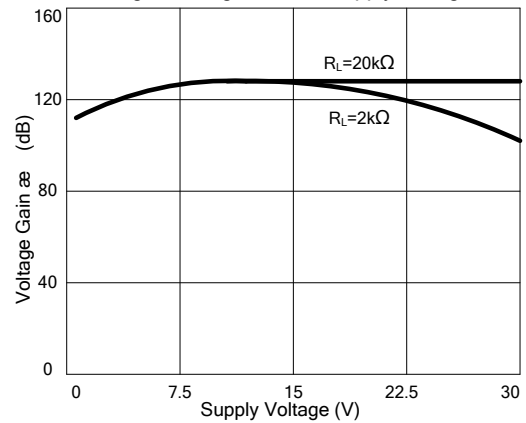


Fig.5 Open Loop Gain vs Frequency

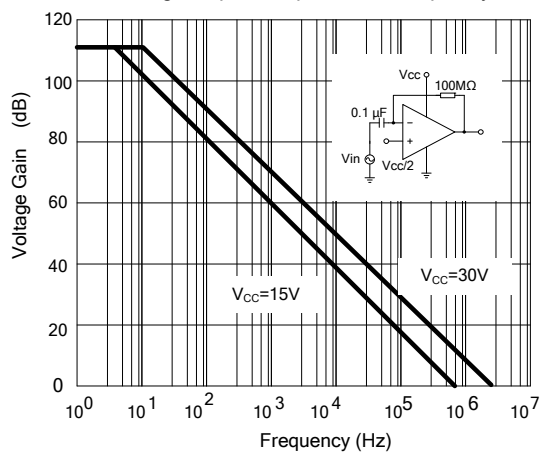
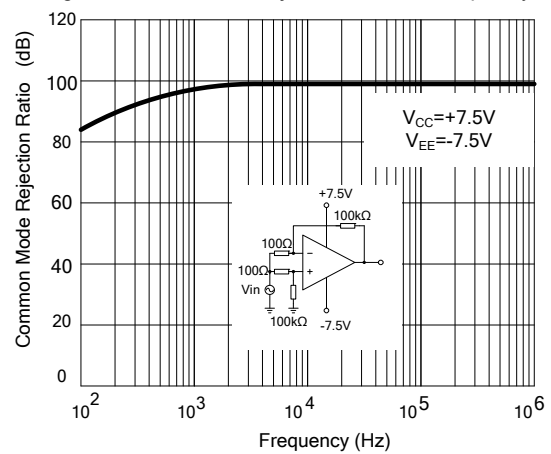


Fig.6 Common Mode Rejection Ratio vs Frequency



■ TYPICAL CHARACTERISTICS(Cont.)

Fig. 7 Voltage Follower Pulse Response

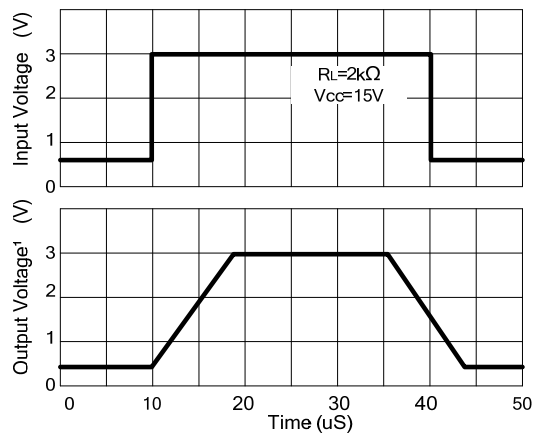


Fig. 8 Voltage Follower Response (Small Signal)

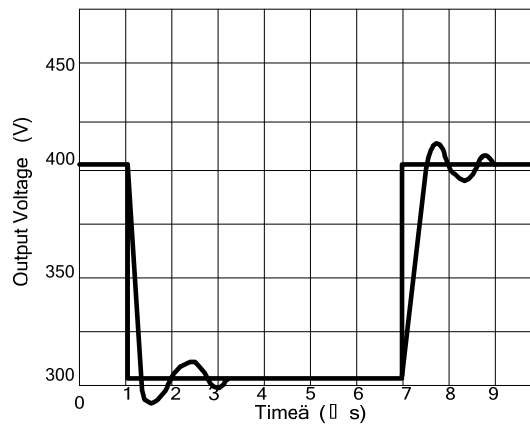


Fig. 9 Gain vs Large Signal Frequency

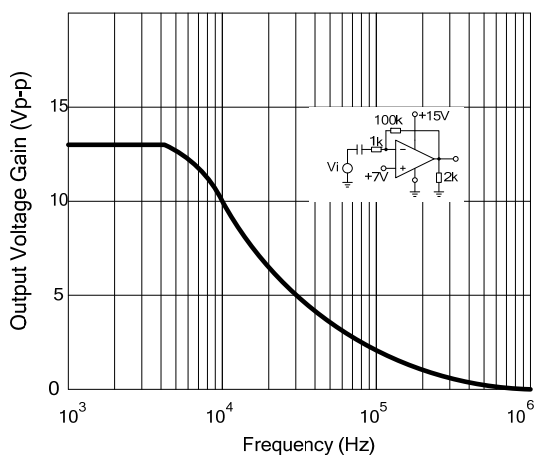


Fig. 10 Output Source Current vs Output Voltage

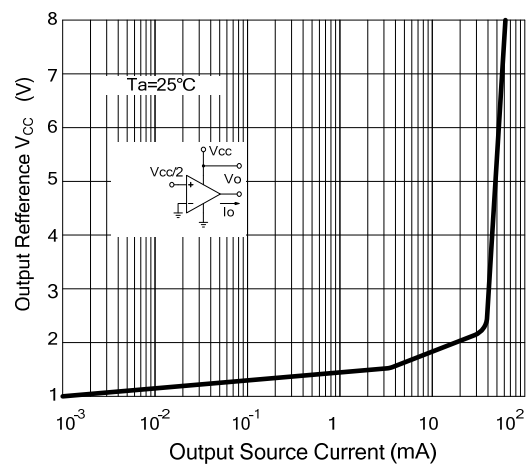


Fig. 11 Output Sink Current vs Output Voltage

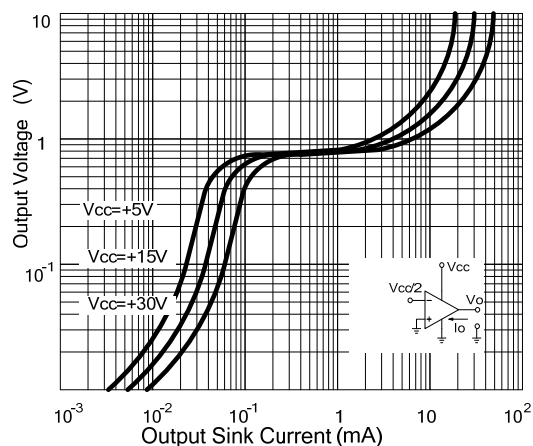
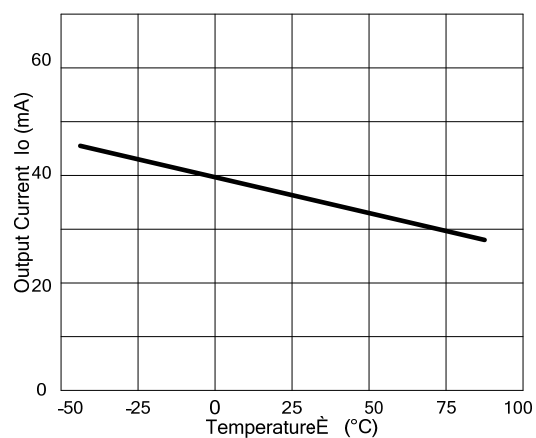


Fig. 12 Current Limiting vs Temperature



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Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

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- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

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