



The GMV358L is CMOS low-voltage (2.0V to 7.0V) and low power consumption versions of the dual operational amplifiers.

The GMV358L are the most cost-effective solutions for applications where low-voltage operation, space saving, and low price are needed. They offer specifications that meet or exceed those of the familiar LM358 devices.

This devices have rail-to-rail output-swing capability, and the input common-mode voltage range includes ground. They all exhibit excellent speed-to-power ratios, achieving 1.5MHz of bandwidth at 2V/ $\mu$ s slew rate with low supply current. The GMV358L package saves space on printed circuit boards and enables the design of small portable electronic devices.

## Features

1. Low power consumption(<200uA).
2. Low supply voltage(2.0V).
3. Ultra high input impedance(>10G $\wedge$ ).
4. Large output Voltage swing(rail-to-rail).
5. Low cross distortion.
6. Low distortion, high slew rate(2V/uS).
7. Excellent power supply ripple rejection.

## Block diagram

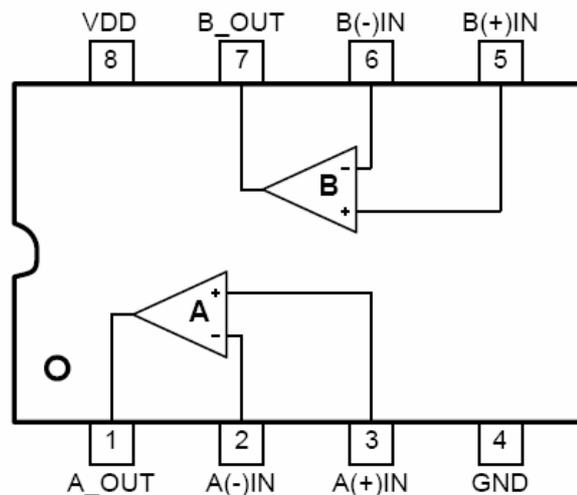


Fig. 1



General Purpose Low Voltage Rail-to-Rail Output OP

**GMV358L**

**Absolute maximum ratings (Ta=25°C)**

Parameter	Symbol	Limits	Unit
Applied voltage	Vmax	9	V
Power dissipation	Pd	350*	mW
Operating temperature	Topr	-40 ~ +85	°C
Storage temperature	Tstg	-55 ~ +125	°C

**Recommended operating conditions (Ta=25°C)**

Parameters	Symbol	Min.	Typ.	Max.	Unit
Power supply voltage	Vcc	2.0	--	7.0	V

**Electrical characteristics** (unless otherwise noted, Ta=25°C, VDD=5.0V, RL=1KΩ, VIN=0dBV, f=1KHz)

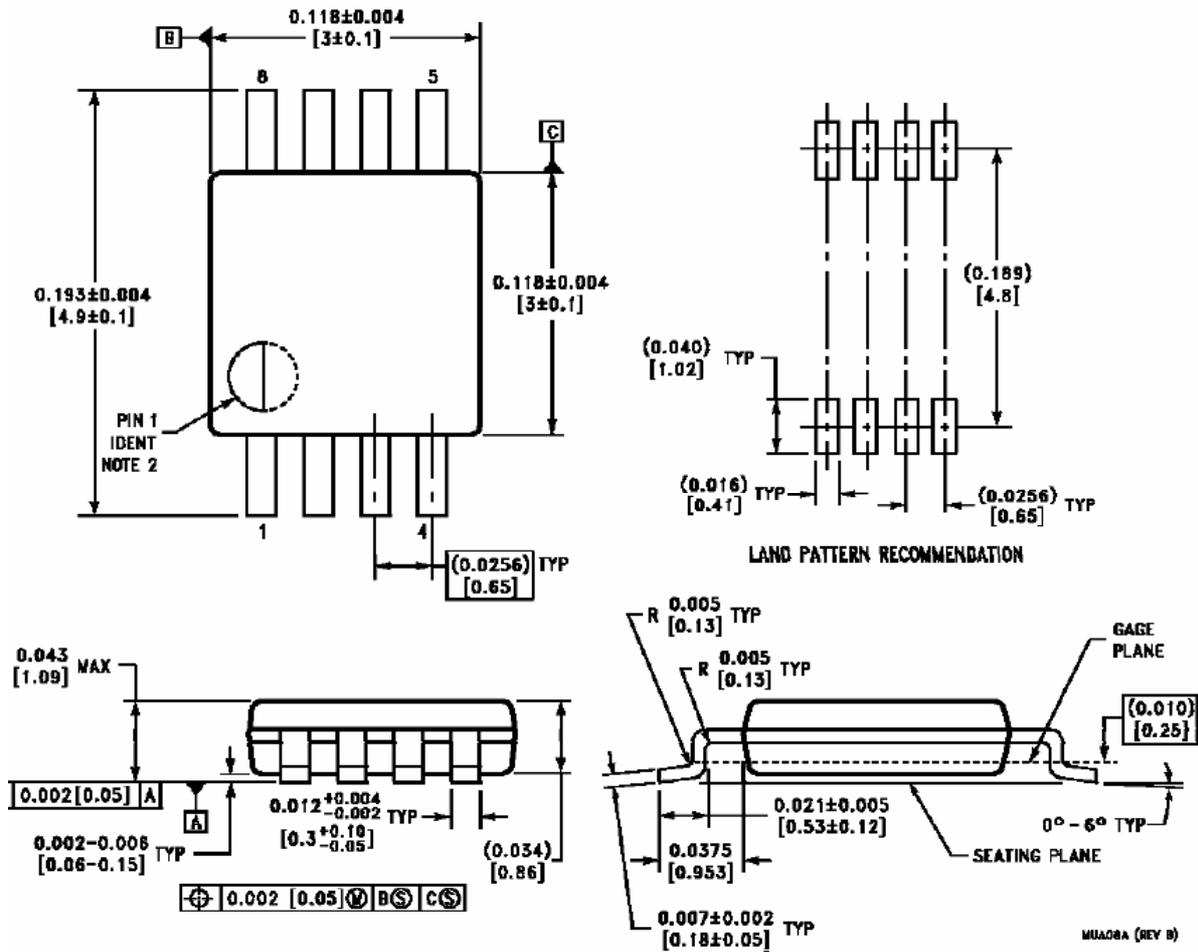
Parameter	Symbol	Min.	Typ.	Max.	Unit	Conditions
Input offset voltage	Vio		1	3	mV	
Supply current	IDD		180	300	uA	VIN=0V
Common-mode rejection ratio	CMRR	50	70		dB	VCM=0~4.0V
Supply-voltage rejection ratio	Ksvr	50	60		dB	VDD=2.0~7.0V
Open loop gain	GAV	80	86		dB	
Common-mode input voltage range	VICR	0~ VDD-0.9	-0.4~ VDD-0.7		V	25°C
Output swing	VOHI	VDD-120	VDD-60			RL=1KΩ to 2.5V
	VOLO		50	100	mV	
Output short current	ISOURCE	20	70		mA	VO=0V
	ISINK	20	80		mA	VO=5V
Slew rate	SR	1	2		V/uS	
Unity-gain bandwidth	UG	1	1.5		MHz	CL=100pF
Equivalent input noise voltage	VN		50		nV/	F=1KHz



General Purpose Low Voltage Rail-to-Rail Output OP

GMV358L

Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



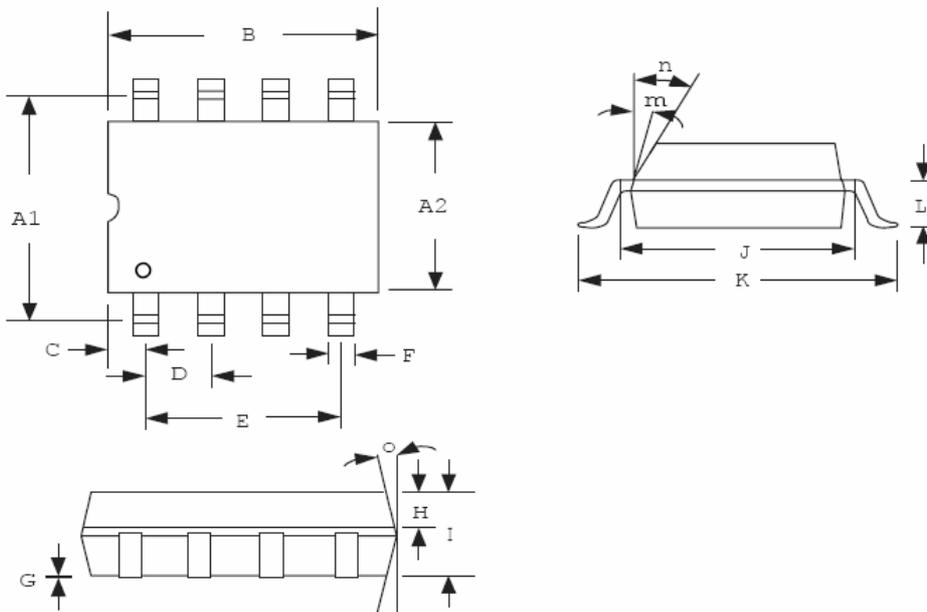
GMV358L Mini SOP8 Package



General Purpose Low Voltage Rail-to-Rail Output OP

**GMV358L**

**Physical Dimensions** inches (millimeters) unless otherwise noted (Continued)



DIM	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A1	4.80	5.00	0.190	0.200
A2	3.80	4.00	0.149	0.157
B	4.80	5.00	0.189	0.196
C	0.558		0.022	
D	1.2BSC		0.050BSC	
E	3.810		0.150	
F	0.33	0.51	0.013	0.069
G	0.152	0.202	0.006	0.008
H	0.406		0.016	
i	1.35	1.75	0.053	0.069
J	4.496	4.623	0.177	0.182
K	5.994	6.197	0.236	0.244
L	0.939		0.037	
m	7°		7°	
n	45°		45°	
o	8°		8°	

**GMV358L SOP8 Package**