



The CMV358H is CMOS low-voltage (2.0V to 7.0V) and low power consumption versions of the dual operational amplifiers.

The CMV358H 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 $7V/\mu s$ slew rate with low supply current. The CMV358H package saves space on printed circuit boards and enables the design of small portable electronic devices.

Features

1. Low power consumption($800\mu A$).
2. Low supply voltage(2.0V).
3. Ultra high input impedance(>10G Ω).
4. Large output Voltage swing(rail-to-rail).
5. Low cross distortion.
6. Low distortion, high slew rate(7V/uS).
7. Excellent power supply ripple rejection.

Block diagram

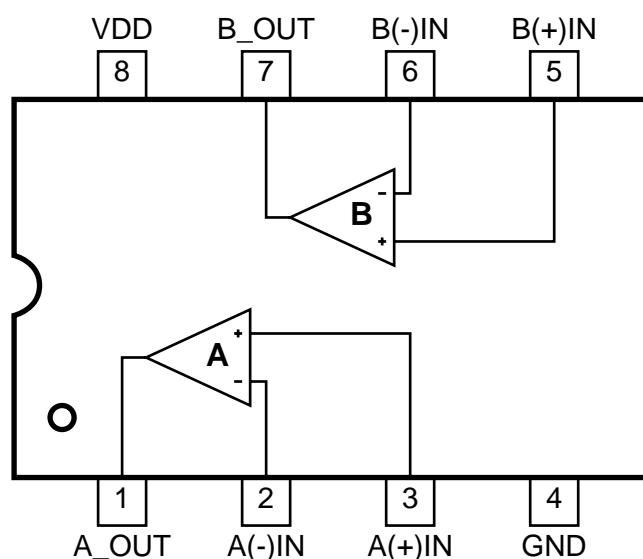


Fig. 1



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)

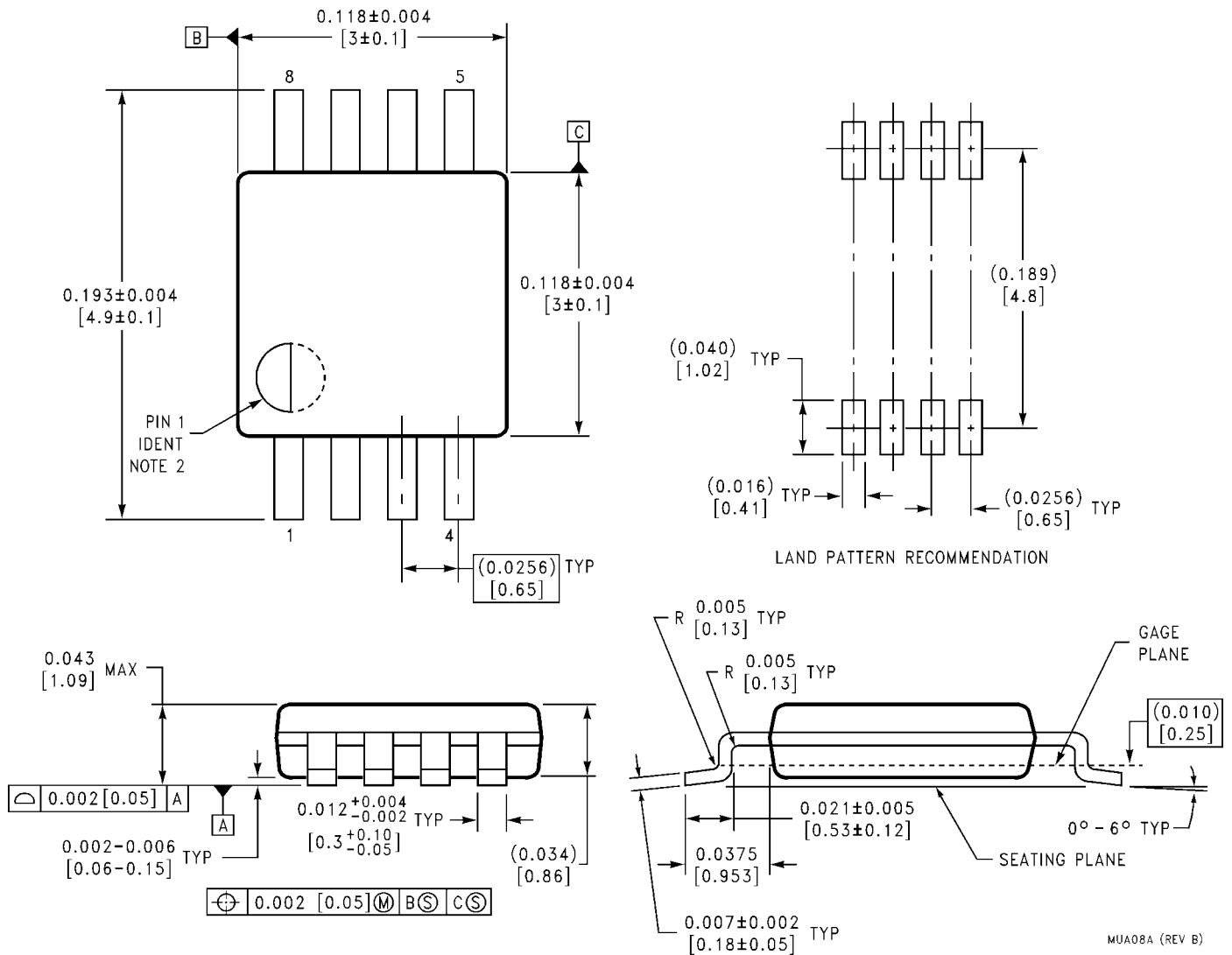
| Parameters | Symbol | Min. | Typ. | Max. | Unit |
|----------------------|--------|------|------|------|------|
| Power supply voltage | Vcc | 2.0 | -- | 7.0 | V |

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 | | 0.7 | 1.2 | mA | 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-1.6 | VDD-1.4 | | V | RL=32Ω to 2.5V |
| | VOLO | | 0.9 | 1.2 | V | |
| Output short current | ISOURCE | 40 | 80 | | mA | VO=0V |
| | ISINK | 45 | 90 | | mA | VO=5V |
| Slew rate | SR | 4 | 7 | | V/μS | |
| Unity-gain bandwidth | UG | 1 | 1.5 | | MHz | CL=100pF |
| Equivalent input noise voltage | VN | | 50 | | nV/√Hz | F=1KHz |



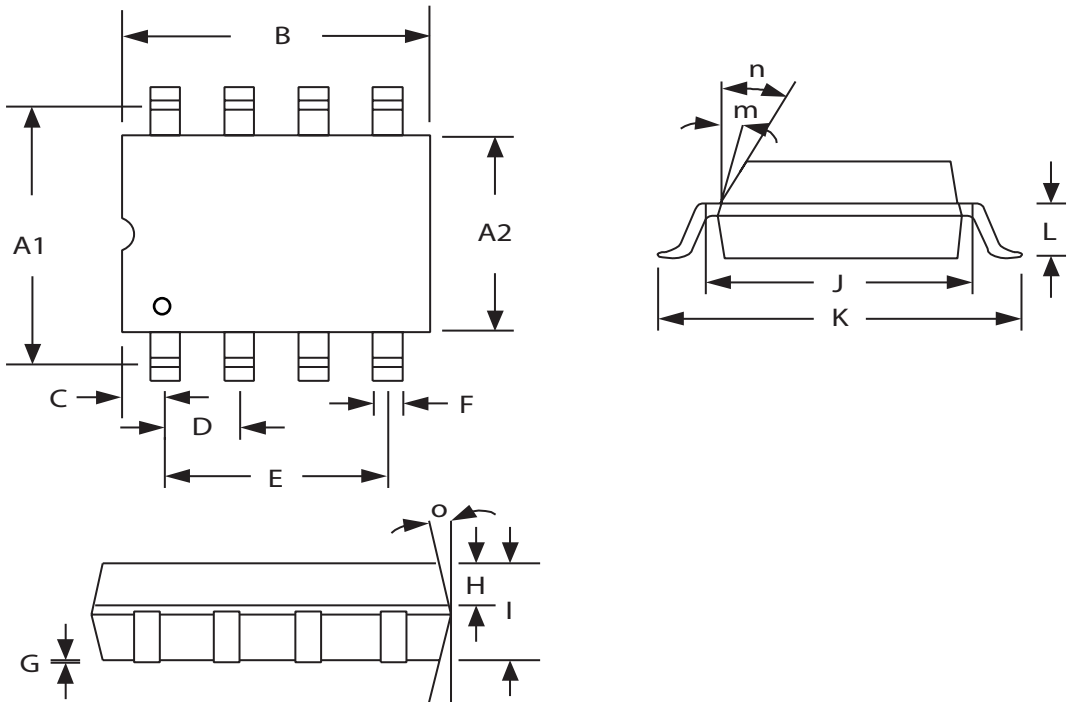
Physical Dimensions inches (millimeters) unless otherwise noted (Continued)



CMV358HM Mini SOP8 Package



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



| DIM | Millimeters | | Inches | |
|-----|-------------|-------|----------|-------|
| | Min. | Max. | Mn. | 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° | |

CMV358H SOP8 Package