

## Description

GM6350 is a group of positive voltage output, three - pin regulators, that provide a high current even when the input/output voltage differential is small. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies. Output voltage: 1.5V to 5.0V.

GM6350 consists a high-precision voltage reference, an error correction circuit, and a current limited output driver. Transient response to load variations have improved in comparison to the existing series.

GM6350 incorporates both over-temperature and over-current protection.

## Features

- ◆ **Maximum output current: 300mA**
- ◆ **Highly accurate: Output voltage  $\pm 2\%$**
- ◆ **Low power consumption.**
- ◆ **Over -Current and Over-Temperature protection**
- ◆ **Small input/ output differential: 0.3V at 300mA**

## Application

**Battery- Operated Systems**

**Portable Computers**

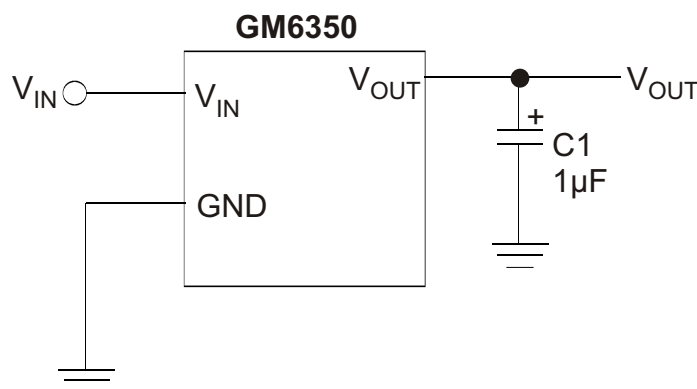
**Portable Cameras and Video Recorders**

**Reference voltage Sources**

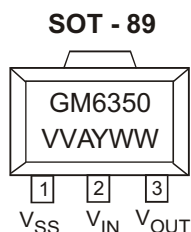
**Instrumentation**

**Pagers**

## TYPICAL APPLICATION



## ◆ MARKING INFORMATION & PIN CONFIGURATIONS (TOP VIEW)



VV = Voltage Code  
 A = Assembly Location  
 Y = Year  
 WW = Weekly

## ◆ ORDERING INFORMATION

| Ordering Number | Output Voltage | Package | Shipping                 |
|-----------------|----------------|---------|--------------------------|
| GM6350-1.5ST89R | 1.5            | SOT-89  | 1,000 Units/ Tape & Reel |
| GM6350-1.8ST89R | 1.8            | SOT-89  | 1,000 Units/ Tape & Reel |
| GM6350-2.5ST89R | 2.5            | SOT-89  | 1,000 Units/ Tape & Reel |
| GM6350-3.0ST89R | 3.0            | SOT-89  | 1,000 Units/ Tape & Reel |
| GM6350-3.3ST89R | 3.3            | SOT-89  | 1,000 Units/ Tape & Reel |
| GM6350-5.0ST89R | 5.0            | SOT-89  | 1,000 Units/ Tape & Reel |

\* For detail Ordering Number identification, please see last page.

## ◆ PIN DESCRIPTION

| Pin Name | Pin Name  | Function                  |
|----------|-----------|---------------------------|
| SOT-25   |           |                           |
| 1        | $V_{SS}$  | Unregulated Supply Input. |
| 2        | $V_{IN}$  | Ground Terminal.          |
| 3        | $V_{OUT}$ | Regulated Voltage Output. |

### ◆ ABSOLUTE MAXIMUM RATINGS

| PARAMETER                         | SYMBOL          | RATINGS                          | UNITS |
|-----------------------------------|-----------------|----------------------------------|-------|
| Input Voltage                     | $V_{IN}$        | 6.5                              | V     |
| Output Current                    | $I_{OUT}$       | 300                              | mA    |
| Output Voltage                    | $V_{OUT}$       | $V_{SS} - 0.3 \sim V_{IN} + 0.3$ | V     |
| Continuos Total Power Dissipation | SOT-89<br>$P_D$ | 500                              | mW    |
| Operating Ambient Temperature     | $T_{OPR}$       | -30 ~ +80                        | °C    |
| Storage Temperature               | $T_{STG}$       | -40 ~ +125                       | °C    |

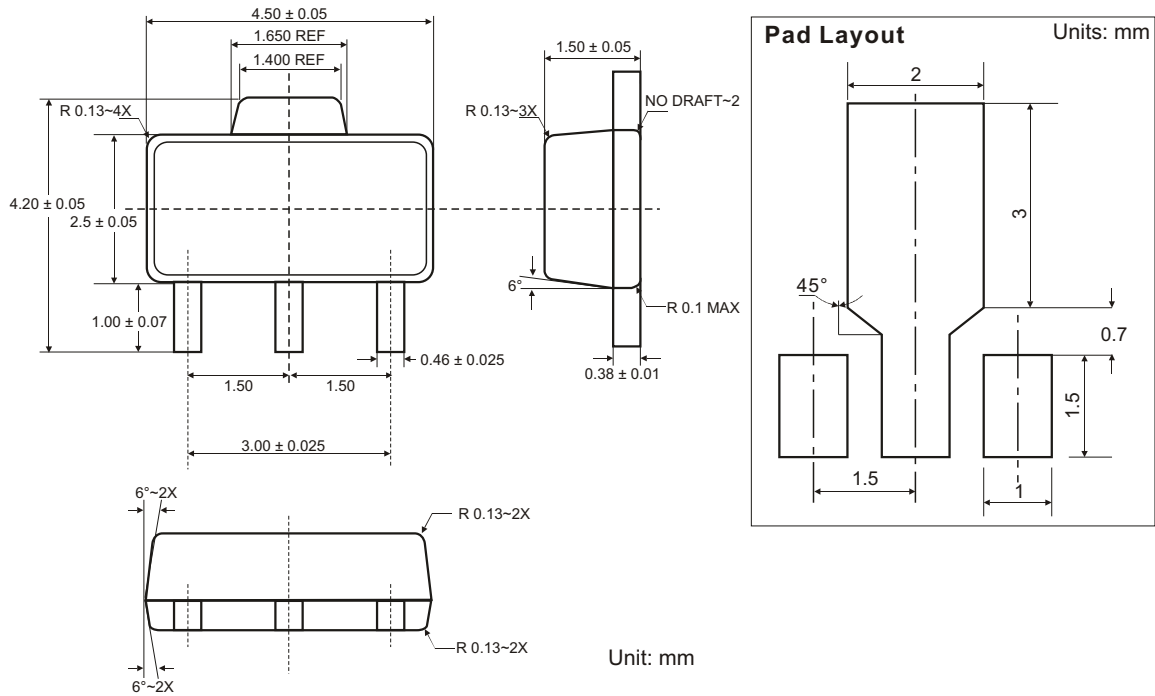
### ◆ ELECTRICAL CHARACTERISTICS

( $T_A = 25^\circ\text{C}$ ,  $V_{IN} = V_{OUT}$  (nominal) + 0.5V, unless otherwise noted)

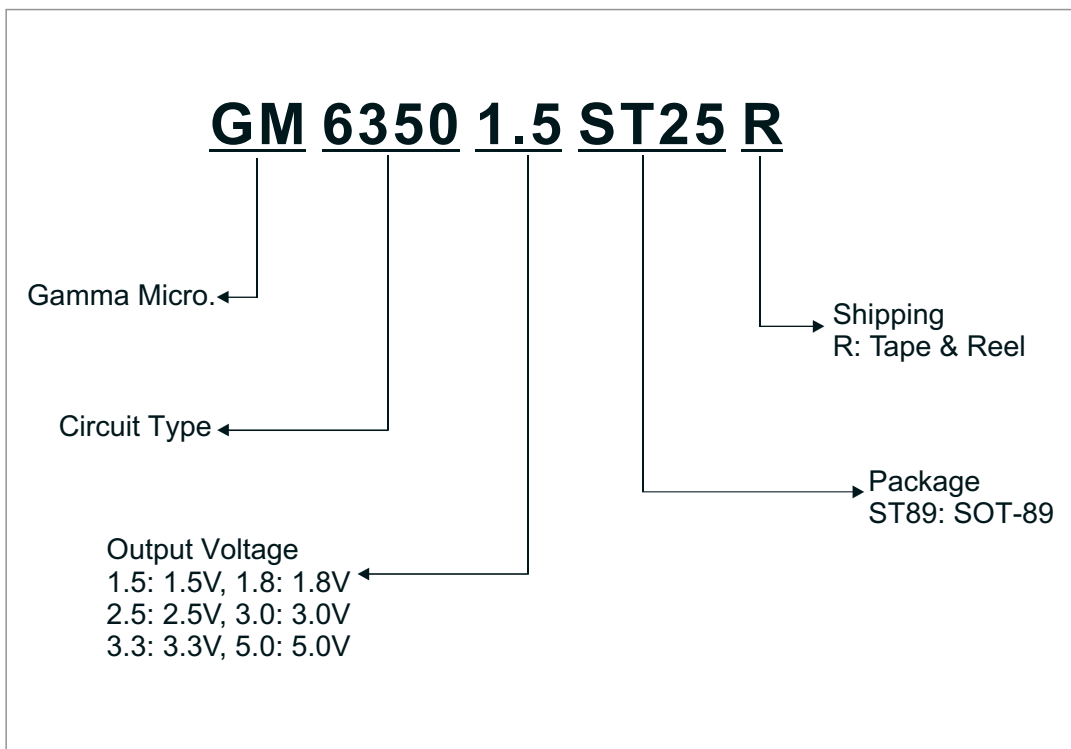
| Parameter                                     | Test Condition   | Min         | Typ   | Max          | Units         | Test Circuit |
|---|--|-------------|-------|--------------|---------------|--------------|
| Output Voltage Accuracy                       | $I_O = 1\text{mA}$ ,<br>$I_O = 0.1 \dots 300\text{mA}$                                   | -1.4<br>-3% |       | +1.4%<br>+2% | V             |              |
| Line Regulation<br>$V_{OUT} / V_{IN} V_{OUT}$ | $I_O = 1\text{mA}$ ,<br>$(V_{OUT} + 0.1\text{V}) < V_{IN} < 6.5\text{V}$                 |             | 0.1   | 0.3          | %/V           | 1            |
| Load Regulation<br>(Note 1)                   | $V_{IN} = 6\text{V}$ ,<br>$0.1\text{mA} < I_O < 300\text{mA}$ , $C_{OUT} = 1\mu\text{F}$ |             | 0.005 | 0.04         | %/mA          | 2            |
| Maximum Output Current                        | $V_{IN} = 5\text{V}$ ,<br>$V_{OUT} > 0.96 \cdot V_{rating}$                              | 300         | 500   |              | mA            |              |
| Current Limit                                 |  | 400         |       |              | mA            |              |
| Ground Pin Current                            | $I_{OUT} = 0 \dots 300\text{mA}$   |             | 15    | 30           | $\mu\text{A}$ | 3            |
| Dropout Voltage for $V_{OUT} > 2.5\text{V}$   | $I_O = 100\text{mA}$   |             | 100   | 180          | mV            |              |
|   | $I_O = 300\text{mA}$   |             | 300   | 550          |               |              |
| for $2.0\text{V} < V_{OUT} \leq 2.5\text{V}$  | $I_O = 100\text{mA}$   |             | 150   | 300          |               |              |
|   | $I_O = 300\text{mA}$   |             | 450   | 800          |               |              |
| for $V_{OUT} \leq 2.5\text{V}$                | $I_O = 100\text{mA}$   |             | 200   | 400          |               |              |
|   | $I_O = 300\text{mA}$   |             | 600   | 1100         |               |              |

Note 1: Load Regulation is measured using pulse techniques with duty cycle <5%



◆ SOT-89 PACKAGE OUTLINE DIMENSIONS



◆ ORDERING NUMBER



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