

Description

The GM6355 series is a low-dropout linear regulator. It is designed specifically for battery-operated systems with the ground current as low as 50µA typical. This feature significantly extends the battery life. Low power consumption and high accuracy is achieved through CMOS and programmable fuse technologies.

GM6355 offers adjustable output option with $V_{REF} = 0.9V$ as well fixed output voltages including from 0.9V to 6.0V with 0.1V increment.

GM6355 consists of a high-precision voltage reference, an error correction circuit, and a current limited output driver. With good transient responses, output remains stable even during load changes.

With its high ripple rejection ratios, this series can be used with power supply noise. A 470pF capacitor from the bypass (BY) input to ground reduces noise presenting on the internal reference, which in turn significantly reduces output noise. If output noise is not a concern, this input may be left unconnected. However, to use larger capacitor values C_{bp} it will result in a longer time to rated output voltage when power is initially applied.

GM6355 incorporates both over-temperature and over-current protection. SOT23-5 (300mW) packages is available.

- ◆ Maximum output current: 300mA
- ◆ Minimum output voltage as low as 0.9V
- ◆ High output voltage accuracy: $\pm 1.5\%$
- ◆ Low power consumption
- ◆ On chip thermal and short circuit protections
- ◆ Low dropout voltage – 300mV @ 300mA
- ◆ Minimum input voltage 2.0V

Application

Battery operated systems

Portable computers

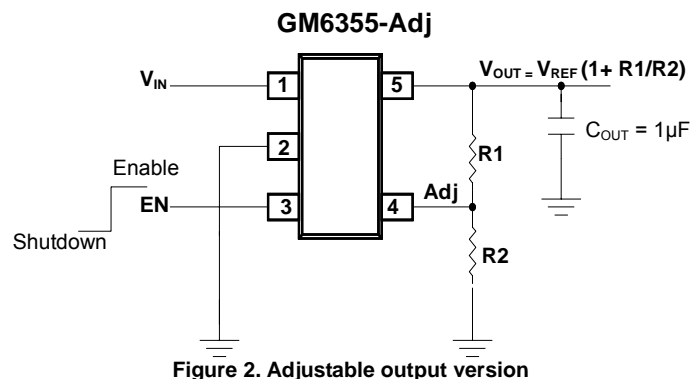
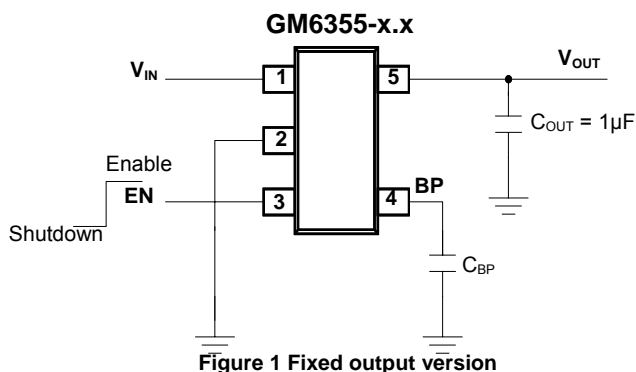
Portable cameras and video recorders

Reference voltage sources

Instruments

Pagers

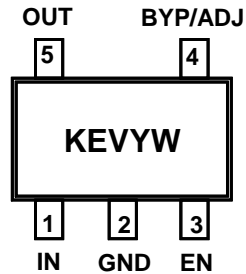
Typical Application Circuits



Note: EN (Pin 3) maybe connected directly to V_{IN} (Pin1)

Marking Information and Pin Configurations (Top View)

SOT25



KE: Device Code, Green Product

V: Voltage Code (see next page)

Y: Year

W: Week code

Week 1-26 : A – Z

Week 27-52 : A - Z

Week 53 : A

Pin Descriptions

Pin Number		Pin Name	Pin Function
1		IN	Supply Input
2		GND	Ground
3		EN	Enable/Shutdown (Input): CMOS compatible input. Logic high = Enable; logic low or open = shutdown
4	Fixed output	BYP	Reference Bypass: Connect external 470pF capacitor to GND to reduce output noise. May be left open.
	Adjustable output	ADJ	Adjust (Input): Adjustable regulator feedback input. Connect to resistor voltage divider
5		OUT	Regulator Output

Ordering Information – Green Products

Ordering Number	Output Voltage	Voltage Code	Package	Shipping
GM6355-AST25RG	Adj	A	SOT-25	3,000 Units/Tape and Reel
GM6355-1.2ST25RG	1.2V	C	SOT-25	3,000 Units/Tape and Reel
GM6355-2.5ST25RG	2.5V	G	SOT-25	3,000 Units/Tape and Reel
GM6355-3.3ST25RG	3.3V	K	SOT-25	3,000 Units/Tape and Reel

Absolute Maximum Ratings (Note 1)

PARAMETER	SYMBOL	RATINGS	UNITS
Input Voltage	V_{IN}	8	V
Enable Voltage	V_{EN}	8	V
Junction Temperature	T_J	- 40 to 125	°C
Storage Temperature	T_{stg}	- 65 to 150	°C
Lead Temperature (soldering, 5 sec)		260	°C

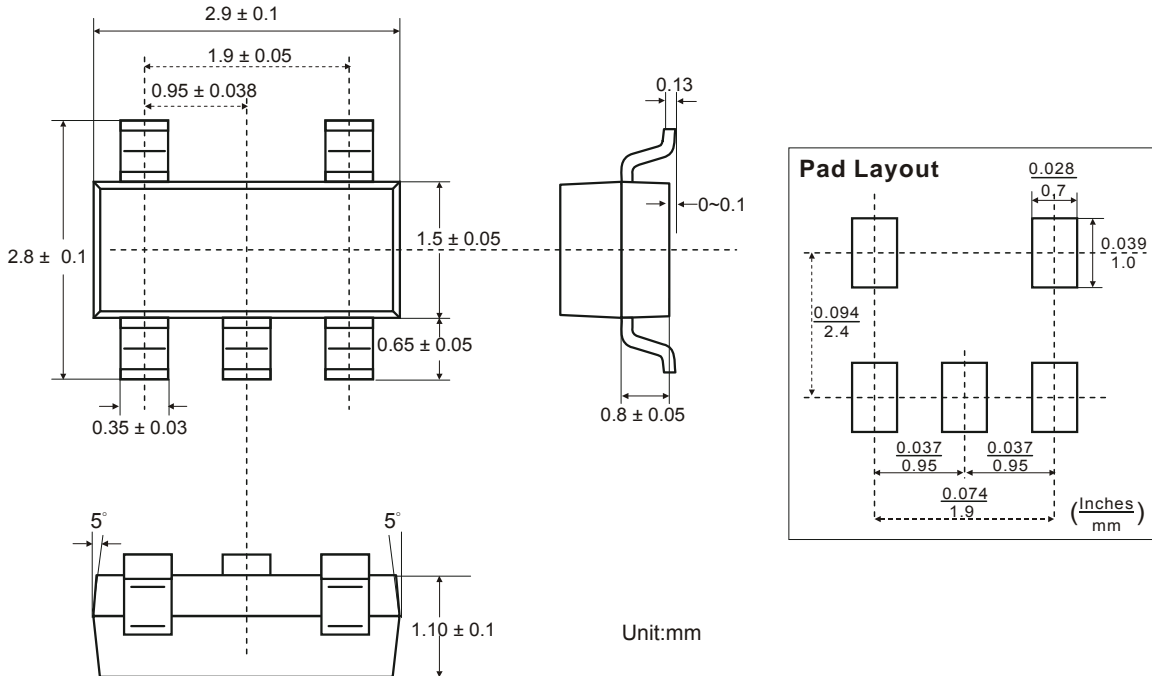
Electrical Characteristics ($V_{IN} = V_{OUT} + 1V$, $T_A = 25^\circ C$ unless otherwise noted)

Parameter	Symbol	Condition	Min	Typ	Max	Unit	
Output Voltage Accuracy (Note 2)	V_O	$I_O = 1mA$	-1.5		1.5	%	
		$I_O = 1mA$ to 300mA	-3		+2		
Line Regulation	$\Delta V_O / \Delta V_I$	$I_O = 1mA$, $2V < V_{IN} < 6V$	-0.3	0.05	0.3	%/V	
Load Regulation (Note 1)	$\Delta V_O / \Delta I_L$	$1mA \leq I_O < 300mA$, $C_{OUT} = 1\mu F$		0.5	1.5	%	
Dropout Voltage		$I_O = 300mA$		$V_O > 2.8V$	300	500	mV
				$2.0V < V_O \leq 2.8V$	450	650	
				$1.5V < V_O \leq 2.0V$	900	1200	
				$V_O < 1.5V$	1300	1600	
Maximum Output Current	I_{OMIN}	$V_O > 0.96 \times V_{RAGING}$	300			mA	
Current Limit	C_L			1300		mA	
EN Exit Delay	EN_{Delay}	$C_{BP} = 0\mu F$, $C_{OUT} = 1\mu F$ $I_O = 100mA$		600		μsec	
EN Input High Bias Current	I_{BH}	$V_{EN} = V_{IN}$			100	nA	
EN Input Low Bias Current	I_{BL}	$V_{EN} = Gnd$	-1	-0.3		μA	
EN Input Threshold Low	V_{TL}	$V_{IN} = 2.5V$ to $5.5V$			0.4V	V	
EN Input Threshold High	V_{TH}	$V_{IN} = 2.5V$ to $5.5V$	1.6V			V	
Ground Pin Current	I_Q	$I_O = 0mA$ to $300mA$		50	85	μA	
Quiescent Current	I_{QS}	$V_{EN} = Gnd$		0.01	1	μA	
PSRR		$I_O = 100mA$, $C_{OUT} = 2.2\mu F$, $f = 100Hz$		55		dB	

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

Note 2: The nominal value of reference voltage for adjustable version is 0.9V

Package Outline Dimensions – SOT 25



Ordering Number

GM 6355 - 1.8 ST25 R G

APM Gamma Micro	Circuit Type	Output Voltage	Package Type	Shipping Type	
		A = Adj 1.8 = 1.8V 2.5 = 2.5V 3.3 = 3.3V 5.0 = 5.0V	ST25: SOT 25	R: Tape & Reel	Blank:Pb-free G:Green

Note:

Pb-free products:

- ◆ RoHS compliant and compatible with the current requirements of IPC/JEDEC J-STD-020.
- ◆ Suitable for use in SnPb or Pb-free soldering processes with 100% matte tin (Sn) plating.

Green products:

- ◆ Lead-free (RoHS compliant)
- ◆ Halogen free (Br or Cl does not exceed 900ppm by weight in homogeneous material and total of Br and Cl does not exceed 1500ppm by weight)