

### Description

The GM66102 of positive fixed output voltage regulators is designed to provide up to 1A output current with high accuracy, and extremely low dropout voltage performance. These regulators feature 300 to 350mV (full load) dropout voltages and very low ground current. Although designed for high current, and loads, these devices are also appreciated in those application systems where the lower current, extremely low dropout features are critical.

GM66102 is fully protected against over current, reversed input polarity (or reversed battery connection), reversed lead insertion, over temperature operation, and transient voltage spikes (positive or negative).

GM66102 is available in SOT-223, TO-252, TO-220 and TO-263 and TO-263 packages.

### Features

- ◆ Low Dropout Voltage 350mV @ 1A Low Ground Current
- ◆ Fixed Voltage Versions
- ◆ Output Current up to 1A
- ◆ Accurate 1% Guaranteed Tolerance
- ◆ Extremely Fast Transient Response
- ◆ Reverse-battery Protection
- ◆ "Load Dump" Protection
- ◆ Fast Transient Response

### Application

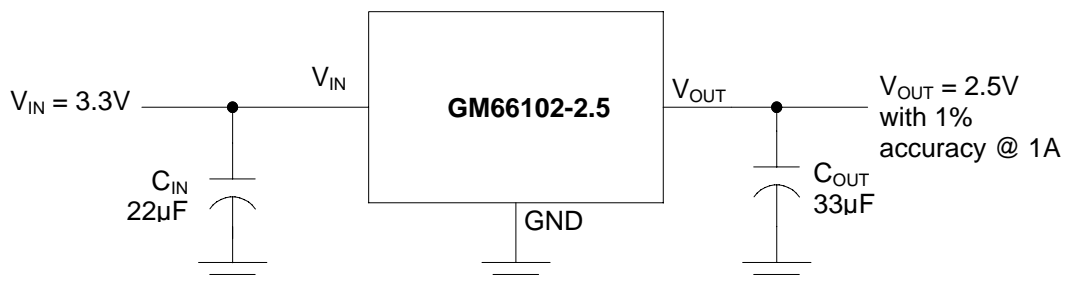
High Efficiency Linear Regulators

Battery Powered Equipment

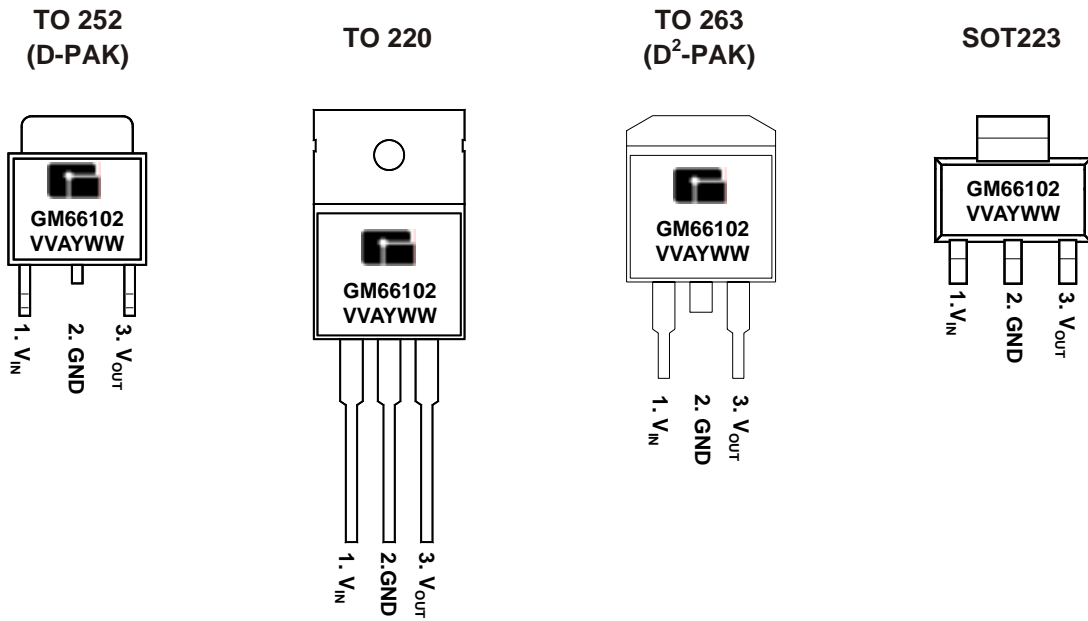
Post Regulators for Switching Supplies

Automotive Electronics

### Typical Application Circuits



## Marking Information and Pin Configurations (Top View)



VV: Voltage suffix (15 = 1.5V, 50 = 5.0V...A = Adj)  
 A: Assembly / Test site code  
 Y: Year  
 WW: Week

### Ordering Information

Ordering Number	Output Voltage	Package	Shipping
GM66102-1.5TA3T	1.5V	TO-263	50 Units/Tube
GM66102-1.5TA3R	1.5V	TO-263	800 Units / Reel
GM66102-1.5TB3T	1.5V	TO-220	50 Units/Tube
GM66102-1.5TC3T	1.5V	TO-252	80 Units/Tube
GM66102-1.5TC3R	1.5V	TO-252	2,500 Units / Reel
GM66102-1.5ST3T	1.5V	SOT-223	80 Units/Tube
GM66102-1.5ST3R	1.5V	SOT-223	2,500 Units / Reel
GM66102-1.8TA3T	1.8V	TO-263	50 Units/Tube
GM66102-1.8TA3R	1.8V	TO-263	800 Units / Reel
GM66102-1.8TB3T	1.8V	TO-220	50 Units/Tube
GM66102-1.8TC3T	1.8V	TO-252	80 Units/Tube
GM66102-1.8TC3R	1.8V	TO-252	2,500 Units / Reel
GM66102-1.8ST3T	1.8V	SOT-223	80 Units/Tube
GM66102-1.8ST3R	1.8V	SOT-223	2,500 Units / Reel
GM66102-2.5TA3T	2.5V	TO-263	50 Units/Tube
GM66102-2.5TA3R	2.5V	TO-263	800 Units / Reel
GM66102-2.5TB3T	2.5V	TO-220	50 Units/Tube
GM66102-2.5TC3T	2.5V	TO-252	80 Units/Tube
GM66102-2.5TC3R	2.5V	TO-252	2,500 Units / Reel
GM66102-2.5ST3T	2.5V	SOT-223	80 Units/Tube
GM66102-2.5ST3R	2.5V	SOT-223	2,500 Units / Reel
GM66102-3.0TA3T	3.0V	TO-263	50 Units/Tube
GM66102-3.0TA3R	3.0V	TO-263	800 Units / Reel
GM66102-3.0TB3T	3.0V	TO-220	50 Units/Tube
GM66102-3.0TC3T	3.0V	TO-252	80 Units/Tube
GM66102-3.0TC3R	3.0V	TO-252	2,500 Units / Reel
GM66102-3.0ST3T	3.0V	SOT-223	80 Units/Tube
GM66102-3.0ST3R	3.0V	SOT-223	2,500 Units / Reel

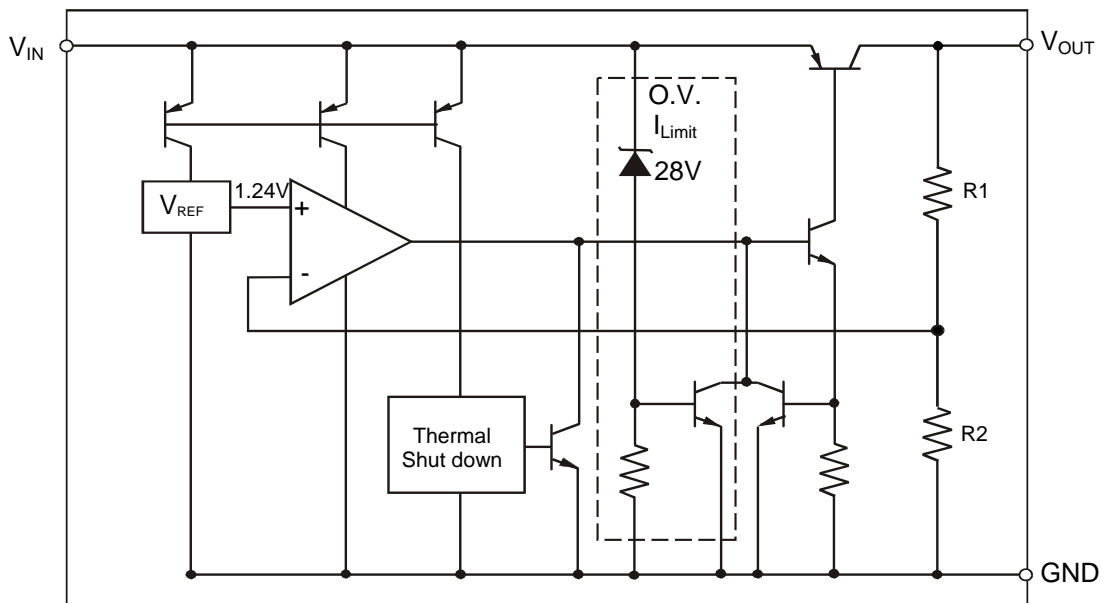
## Ordering Information (continued)

Ordering Number	Output Voltage	Package	Shipping
GM66102-3.3TA3T	3.3V	TO-263	50 Units/Tube
GM66102-3.3TA3R	3.3V	TO-263	800 Units / Reel
GM66102-3.3TB3T	3.3V	TO-220	50 Units/Tube
GM66102-3.3TC3T	3.3V	TO-252	80 Units/Tube
GM66102-3.3TC3R	3.3V	TO-252	2,500 Units / Reel
GM66102-3.3ST3T	3.3V	SOT-223	80 Units/Tube
GM66102-3.3ST3R	3.3V	SOT-223	2,500 Units / Reel
GM66102-5.0TA3T	5.0V	TO-263	50 Units/Tube
GM66102-5.0TA3R	5.0V	TO-263	800 Units / Reel
GM66102-5.0TB3T	5.0V	TO-220	50 Units/Tube
GM66102-5.0TC3T	5.0V	TO-252	80 Units/Tube
GM66102-5.0TC3R	5.0V	TO-252	2,500 Units / Reel
GM66102-5.0ST3T	5.0V	SOT-223	80 Units/Tube
GM66102-5.0ST3R	5.0V	SOT-223	2,500 Units / Reel
GM66102-12TA3T	12V	TO-263	50 Units/Tube
GM66102-12TA3R	12V	TO-263	800 Units / Reel
GM66102-12TB3T	12V	TO-220	50 Units/Tube
GM66102-12TC3T	12V	TO-252	80 Units/Tube
GM66102-12TC3R	12V	TO-252	2,500 Units / Reel
GM66102-12ST3T	12V	SOT-223	80 Units/Tube
GM66102-12ST3R	12V	SOT-223	2,500 Units / Reel

### Absolute Maximum Ratings (Note 1)

Rating	Symbol	Value	Unit
Maximum Supply Voltage	$V_{IN}$	26	V
Power Dissipation	$P_D$	Internally Limited	-
Package Thermal Resistance			
TO-220	$\theta_{JA}$	2.0	°C/W
TO-263		2.0	
TO-252		6.0	
SOT-223		15.0	
Storage Temperature Range	$T_{STG}$	- 65 to 150	
Operating Temperature Range	$T_J$	- 40 to 125	
Lead Temperature (Soldering, 10 sec)		+ 260	

### Block Diagram

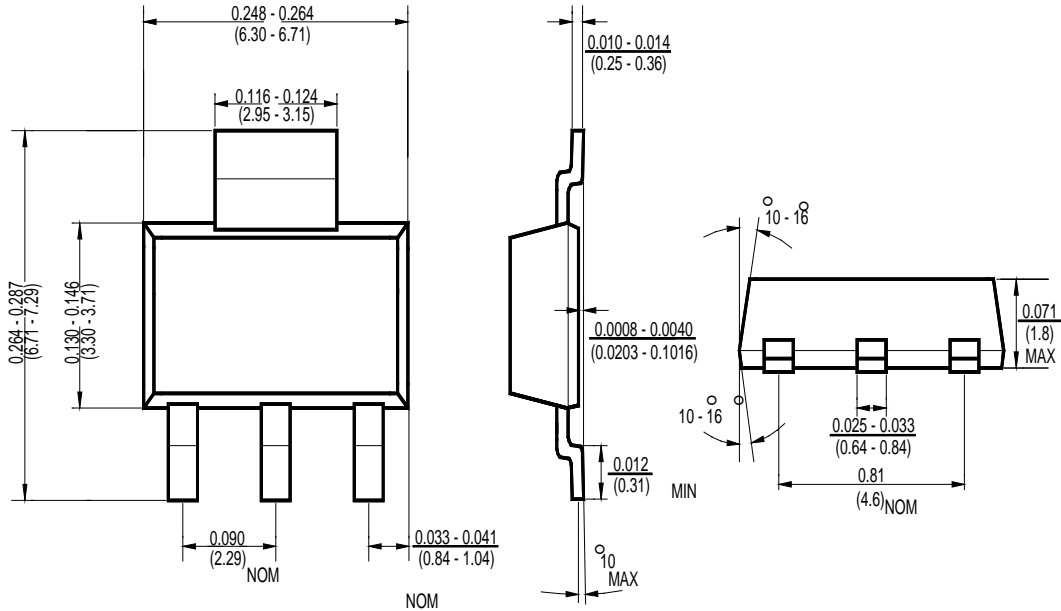


### Electrical Characteristics:

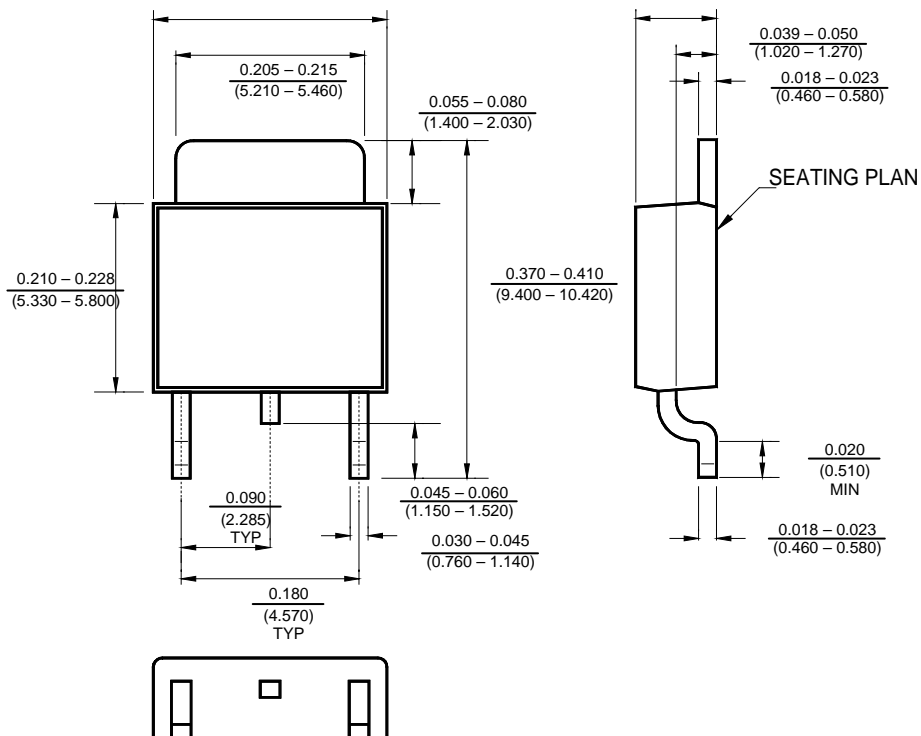
(Unless otherwise specified:  $T_J = 25^\circ\text{C}$ , Bold values are guaranteed across the full operating temperature range)

Parameter	Condition	Symbol	Min	Typ	Max	Unit	
Output Voltage	$I_O = 10\text{mA}$	$V_{OUT}$	-1		1	%	
	$10\text{mA} \leq I_O \leq 1\text{A}, V_{OUT} + 1\text{V} \leq V_{IN} \leq 26\text{V}$		<b>-2</b>		<b>-2</b>		
Line Regulation	$I_O = 10\text{mA}, V_{OUT} + 1\text{V} \leq V_{IN} \leq 26\text{V}$	$\Delta V_{OI}$		0.06	0.5	%	
Load Regulation	$V_{IN} = V_{OUT} + 5\text{V}, 10\text{mA} \leq I_O \leq 1\text{A}$	$\Delta V_{OL}$		0.2	1.0	%	
Output Temperature Coefficient		$\Delta V_{OUT} / \Delta T$		20	100	ppm/	
Dropout Voltage	$V_{OUT} = 1.5\text{V}$	$I_O = 100\text{mA}$			<b>0.6</b>	V	
		$I_O = 1\text{A}$			<b>0.8</b>		
	$V_{OUT} = 1.8\text{V}$	$I_O = 100\text{mA}$			300	<b>0.3</b>	
		$I_O = 1\text{A}$				<b>0.5</b>	
	Other $V_{OUT}$ options	$I_O = 100\text{mA}$	$V_{DO}$		80	<b>200</b>	mV
		$I_O = 750\text{mA}$			220		
$I_O = 1\text{A}$				300	<b>500</b>		
Ground Current	$I_O = 750\text{mA}, V_{IN} = V_{OUT} + 1\text{V}$	$I_{GND}$		8	<b>20</b>	mA	
	$I_O = 1\text{A}$			22			
Current Limit	$V_{OUT} = 0\text{V}$	$I_{CL}$		2.1	<b>3.5</b>	A	

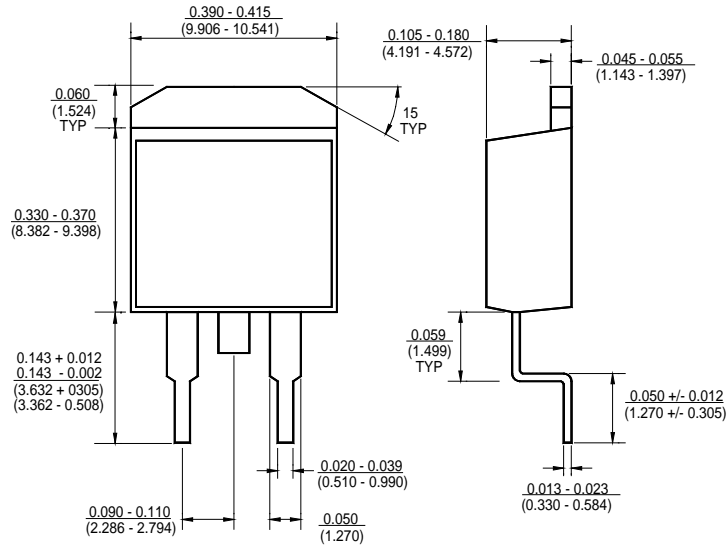
### Package Outline Dimensions – SOT223



### Package Outline Dimensions – TO252



### Package Outline Dimensions – TO263





### Ordering Number

<u>GM</u>	<u>66102</u>	<u>1.5</u>	<u>ST3</u>	<u>R</u>
APM Gamma Micro	Circuit Type	Output Voltage	Package Type	Shipping Type
		1.5 = 1.5V 1.8 = 1.8V 2.5 = 2.5V 3.0 = 3.0V 3.3 = 3.3V 5.0 = 5.0V	ST3: SOT223 TA3: TO263 TB3: TO220 TC3: TO252	R: Taping & Reel T: Tube