

## 3D Micro-Laminated DC-DC Power Delivery SoC

### FEATURES

- Integrated power MOSFETs, controller and inductor
- Continuous output current: 2A
- Input voltage 2.3V to 6 V
- Output voltage from 0.6V to  $V_{IN}$
- Less than 1 $\mu$ A shutdown current
- Low quiescent current: 40 $\mu$ A
- 1 MHz fixed switching frequency
- PFM Mode for high efficiency in light load
- 100% duty cycle in dropout operation
- Power good output voltage monitor
- Integrated soft start
- Short circuit protection
- Thermal fault protection
- No acoustic noise in any operation conditions
- Improved EMC
- 4.0mm x 6.0mm x 1.56mm 16-Lead BGA package
- Lead free, halogen free and RoHS compliant

### GENERAL DESCRIPTION

The GRM2262 is a highly integrated power delivery sub-system SoC device of DC-DC power conversion. It includes power inductor, power switches and voltage regulation circuit. The compact and low profile device is in a BGA package of 4.0mm x 6.0mm x 1.56mm, allowing the system to achieve high density.

The device has a low quiescent current and synchronous switching, step-down converter. At medium-to-high load currents, these devices use a current mode, constant frequency pulse width modulation (PWM) control scheme for excellent stability and transient response. Under light load, it uses a pulse frequency modulation (PFM) control scheme that reduces switching frequency to save power.

Other key features include under voltage lockout(UVLO), integrated soft start to limit inrush current at startup and short circuit protection and thermal fault protection.

### APPLICATIONS

- Space and height constrained designs
- Battery operated systems
- Low EMI systems
- Industrial and medical systems
- Telecommunication/networking equipment
- Tablet, Ultrabook and notebook

### TYPICAL APPLICATION CIRCUIT

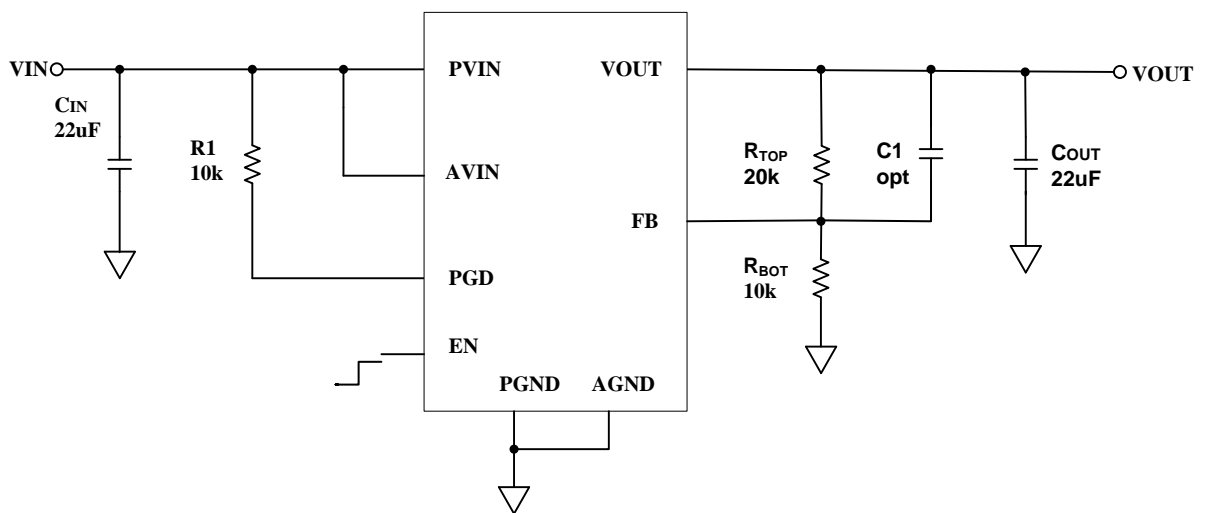


Figure 1.

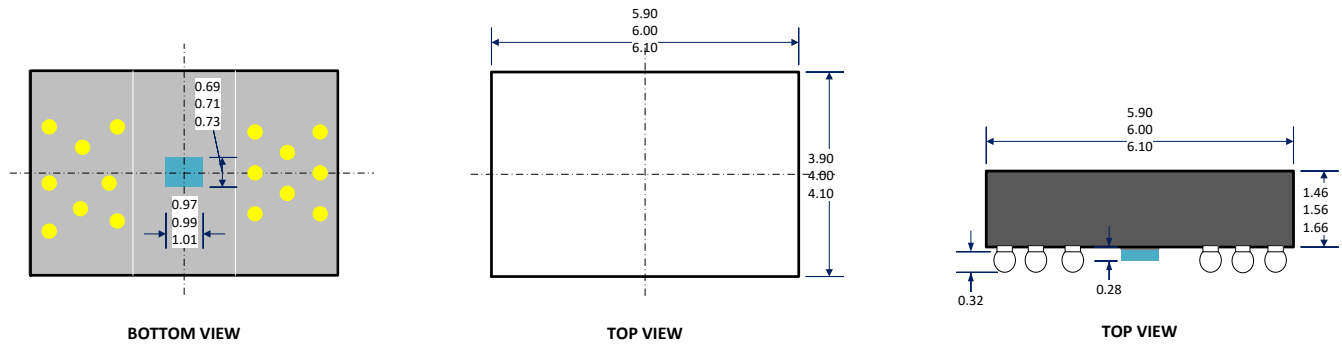


Table of pad coordinates and Pad opening size .

Pad No.	Pad Name	Pad Location/Coordinates		Pad Opening Size	
		X ( um )	Y ( um )	Radius ( um )	Geometry : Circle
A1	PVIN	350	-1100	140	
A2	AVIN	1678	-1100	140	
A3	FB	4370	-1200	140	
A4	VOUT	5640	-1200	140	
B1	PVIN	1000	-1500	140	
B2	VOUT	5005	-1600	140	
C1	TP1	350	-2200	140	
C2	PGND	1520	-2200	140	
C3	PGD	4370	-2000	140	
C4	VOUT	5640	-2000	140	
D1	PGND	960	-2700	140	
D2	VOUT	5005	-2400	140	
E1	TP2	350	-3140	140	
E2	AGND	1678	-2934	140	
E3	EN	4370	-2800	140	
E4	VOUT	5640	-2800	140	

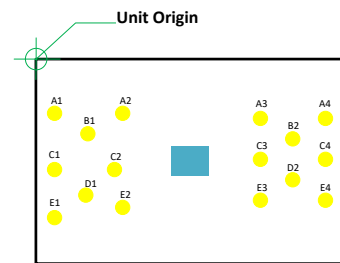


Figure 19. 4.0mm X 6.0mm X 1.56mm

## ORDERING GUIDE

Model	Output Current	Temperature Range	Output Voltage	Package Description	Quantity
GRM2262BAZ-R3 <sup>1</sup>	2A	-40°C to +125°C	Adjustable	BGA 16-Lead package	500
GRM2262BAZ-R7 <sup>2</sup>					2500

<sup>1</sup> BA-Package type, Z-lead free, R3-the reel type with 0.5k units per package

<sup>2</sup> BA-Package type, Z-lead free, R7-the reel type with 2.5k units per package