



# MicroPower Direct



Tightly Regulated, 1W  
Ultra-Miniature DIP  
DC/DC Converters  
**G100R Series**

## Key Features

- Miniature DIP Package
- 1.0 kVDC Isolation
- ±0.5% Line/Load Regulation
- 1W Output Power
- 2.7 MH MTBF
- Low Cost

## Electrical Specifications

Specifications typical @ +25°C with nominal input voltage & rated output current, unless otherwise noted. Specifications subject to change without notice.

### Input

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Range	5 VDC Input	4.5	5.0	5.5	VDC
	12 VDC Input	10.8	12.0	13.2	
	24 VDC Input	21.6	24.0	26.4	
Input Filter	Internal Capacitor				

### Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±5.0	%
Line Regulation	For Vin Change of Min to Max			±0.5	%
Load Regulation	For Iout = 20% to 100%			±0.5	%
Ripple & Noise (20 MHz)				50	mV P - P
Output Power Protection		120			%
Temperature Coefficient			±0.01	±0.02	%/°C
Output Short Circuit	Momentary (0.5 Sec.)				

### General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage	60 Seconds	1,000			VDC
Isolation Resistance	500 VDC	1,000			MΩ
Isolation Capacitance	100 kHz, 1V		60		pF
Switching Frequency			80		kHz

### Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+85	°C
Storage Temperature Range		-40		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

### Physical

Case Size	0.80 x 0.40 x 0.27 Inches (20.32 x 10.16 x 6.85 mm)				
Case Material	Non-Conductive Black Plastic				
Weight	0.09 Oz (2.7g)				

### Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign		2.7		MHours

### Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		6.0	VDC
	12 VDC Input	-0.7		14.0	
	24 VDC Input	-0.7		28.0	
Internal Power Dissipation	All Models			450	mW

**Caution:** Exceeding Absolute Maximum Ratings may damage the module. These are not continuous operating ratings.

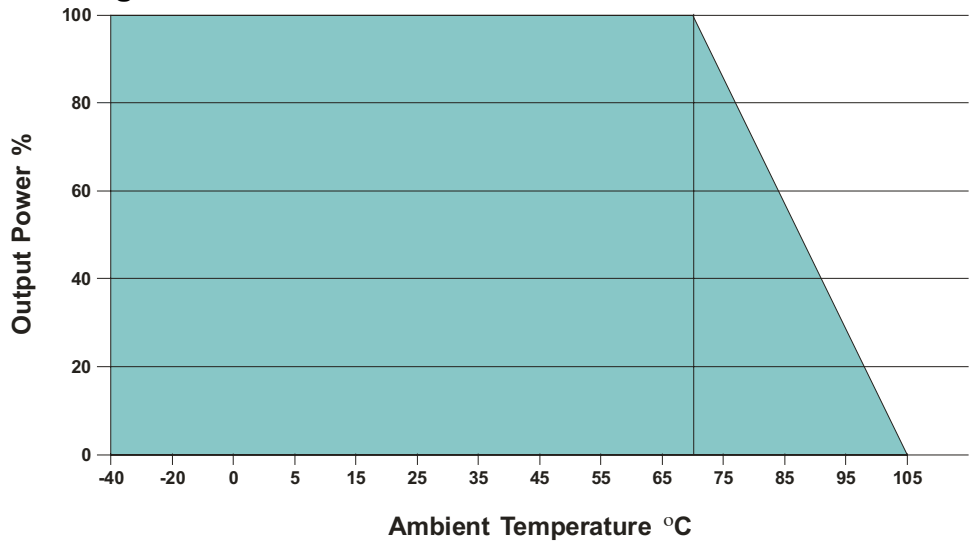
# Model Selection Guide

Model Number	Input				Output			Efficiency (% Typ)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)		Current (mA)		Voltage (VDC)	Current (mA, Max)	Current (mA, Min)		
	Nominal	Range	Full-Load	No-Load					
G101R	5	4.5 - 5.5	213	28	3.3	200.0	20.0	62	500
G102R	5	4.5 - 5.5	317	28	5.0	200.0	20.0	63	500
G103R	5	4.5 - 5.5	312	26	9.0	111.0	11.0	64	500
G104R	5	4.5 - 5.5	312	26	12.0	83.0	9.0	64	500
G105R	5	4.5 - 5.5	312	38	15.0	66.0	7.0	66	500
G111R	12	10.8 - 13.2	91	16	3.3	200.0	20.0	61	200
G112R	12	10.8 - 13.2	130	16	5.0	200.0	20.0	64	200
G113R	12	10.8 - 13.2	130	16	9.0	111.0	11.0	64	200
G114R	12	10.8 - 13.2	130	16	12.0	83.0	9.0	64	200
G115R	12	10.8 - 13.2	130	16	15.0	66.0	7.0	64	200
G121R	24	21.6 - 26.4	43	7	3.3	200.0	20.0	63	100
G122R	24	21.6 - 26.4	64	7	5.0	200.0	20.0	65	100
G123R	24	21.6 - 26.4	65	9	9.0	111.0	11.0	64	100
G124R	24	21.6 - 26.4	65	9	12.0	83.0	9.0	64	100
G125R	24	21.6 - 26.4	65	9	15.0	66.0	7.0	64	100

**Notes:**

- These units do not require external components to operate, but the use of an input capacitor (10  $\mu$ F) may enhance performance in some applications. An output capacitor (4.7  $\mu$ F to 10  $\mu$ F) may be used to reduce ripple.

### Derating Curve



### Capacitive Load

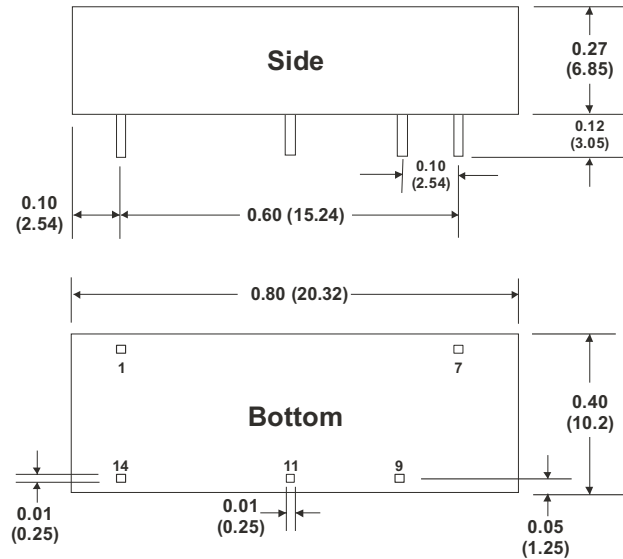
$\mu$ F Max
33

### Pin Connections

Pin	Single
1	-Vin
7	NC
9	+Vout
11	-Vout
14	+Vin

NC = No Connection

### Mechanical Dimensions



**Notes:** All dimensions are typical in inches (mm)  
Tolerance x.xx =  $\pm 0.01$  ( $\pm 0.25$ )  
Pin 1 is marked by a "dot" or indentation on the side of the unit



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