MicroPower Direct



Compact MiniDIP, 2W
Single & Dual Output
DC/DC Converters
G200 Series

Key Features

- Miniature DIP Package
- 2W Output Power
- 3.6 MH MTBF
- 1.0 kVDC Isolation
- Single & Dual Outputs
- **Low Cost**

Electrical Specifications

Specifications typical @ +251C 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	
	48 VDC Input	43.2	48.0	52.8	
Input Filter	Internal Capacitor				
Reverse Polarity Input Current				0.3	A

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy			±1.0	±3.0	%
Output Voltage Balance	Dual Output , Balanced Loads		±0.1	±1.0	%
Line Regulation	For Vin Change of 1%		±1.2	±1.5	%
Load Regulation	See Model Selection Guide				
Ripple & Noise (20 MHz)			100	150	mV P - P
Ripple & Noise (20 MHz)	Over Line, Load & Temp.			200	mV P - P
Ripple & Noise (20 MHz)				5	mV rms
Output Power Protection		120			%
Temperature Coefficient			±0.01	±0.02	%/1C
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		80	120	pF
Switching Frequency		50	80	100	kHz

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range		-40	+25	+70	1C
Storage Temperature Range		-40		+125	1C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size, 5V, 12V & 24V Input Models	0.80 x 0.40 x 0.27 Inches (20.32 x 10.16 x 6.85 mm)
Case Size, 48VDC Input Models	0.80 x 0.40 x 0.30 Inches (20.32 x 10.16 x 7.50 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, 251C, Gnd Benign		3.6		MHours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Voltage Surge (1 Sec)	5 VDC Input	-0.7		9.0	VDC
	12 VDC Input	-0.7		18.0	
	24 VDC Input	-0.7		30.0	
	48 VDC Input	-0.7		55.0	
Internal Power Dissipation	All Models			650	mW

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

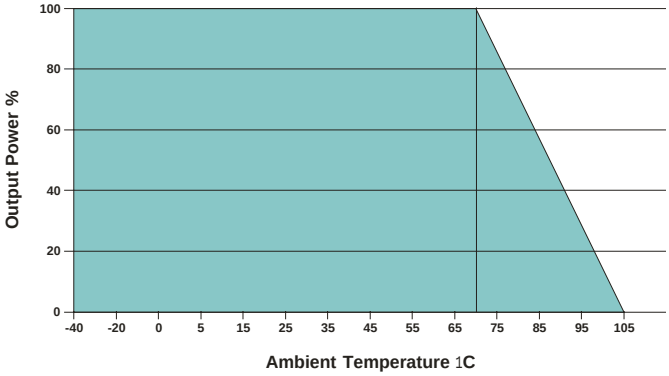
Model Selection Guide

Model Number	Input				Output			Load Regulation (%, Max)	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						
G201	5	4.5 - 5.5	452	35	3.3	500.0	10.0	11	73	1,000
G202	5	4.5 - 5.5	526	35	5.0	400.0	8.0	11	76	1,000
G203	5	4.5 - 5.5	495	35	12.0	165.0	3.0	7	80	1,000
G204	5	4.5 - 5.5	499	35	15.0	133.0	2.5	7	80	1,000
G205	5	4.5 - 5.5	519	35	±5.0	±200.0	±4.0	10	77	1,000
G206	5	4.5 - 5.5	504	35	±12.0	±83.0	±1.5	7	79	1,000
G207	5	4.5 - 5.5	501	35	±15.0	±66.0	±1.0	7	79	1,000
G211	12	10.8 - 13.2	185	25	3.3	500.0	10.0	8	74	500
G212	12	10.8 - 13.2	212	25	5.0	400.0	8.0	8	78	500
G213	12	10.8 - 13.2	200	25	12.0	165.0	3.0	5	82	500
G214	12	10.8 - 13.2	200	25	15.0	133.0	2.5	5	83	500
G215	12	10.8 - 13.2	222	25	±5.0	±200.0	±4.0	8	75	500
G216	12	10.8 - 13.2	201	25	±12.0	±83.0	±1.5	5	82	500
G217	12	10.8 - 13.2	200	25	±15.0	±66.0	±1.0	5	82	500
G221	24	21.6 - 26.4	92	10	3.3	500.0	10.0	8	74	200
G222	24	21.6 - 26.4	108	10	5.0	400.0	8.0	8	77	200
G223	24	21.6 - 26.4	101	10	12.0	165.0	3.0	5	81	200
G224	24	21.6 - 26.4	101	10	15.0	133.0	2.5	5	82	200
G225	24	21.6 - 26.4	111	10	±5.0	±200.0	±4.0	8	75	200
G226	24	21.6 - 26.4	102	10	±12.0	±83.0	±1.5	5	81	200
G227	24	21.6 - 26.4	100	10	±15.0	±66.0	±1.0	5	82	200
G231	48	43.2 - 54.8	28	6	3.3	500.0	10.0	8	74	100
G232	48	43.2 - 54.8	27	6	5.0	400.0	8.0	8	77	100
G233	48	43.2 - 54.8	26	6	12.0	165.0	3.0	5	81	100
G234	48	43.2 - 54.8	25	6	15.0	133.0	2.5	5	82	100
G235	48	43.2 - 54.8	28	6	±5.0	±200.0	±4.0	8	75	100
G236	48	43.2 - 54.8	26	6	±12.0	±83.0	±1.5	5	81	100
G237	48	43.2 - 54.8	25	6	±15.0	±66.0	±1.0	5	82	100

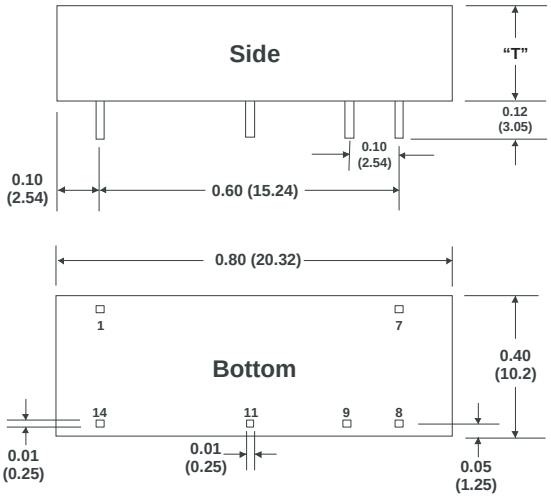
Notes:

1. Dual output units may be connected to provide a 10V, 24V or 30 VDC output. To do this, connect the load across the positive (+Vout) and negative (-Vout) outputs and float the output common.
2. These units do not require external comonents to operate, but the use of an input capacitor (10 µF) may enhance performance in some applications. An output capacitor (4.7 µF to 10 µF) may be used to reduce ripple.

Derating Curve



Mechanical Dimensions



Note: "T" = 0.27 (6.85) For 5, 12 & 24 VDC Input Models
0.30 (7.50) For 48 VDC Input Models

Pin Connections

Pin	Single	Dual
1	-Vin	-Vin
7	NC	NC
8	No Pin	Common
9	+Vout	+Vout
11	-Vout	-Vout
14	+Vin	+Vin

NC = No Connection

Capacitive Load

Single Output µF Max	Dual Output µF Max
470	±390

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

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