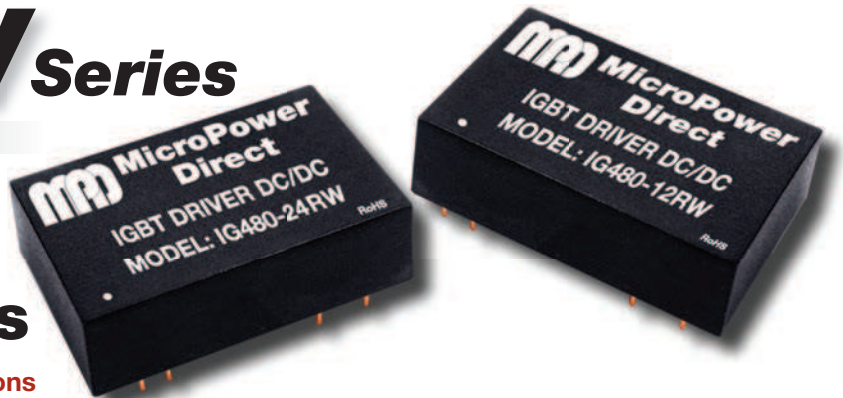


IG480RW Series

High Isolation IGBT Driver DC/DC Converters



Key Features:

- Operates With xx962 Drivers
- 4.8W Output Power
- Independent Outputs
- 3,000 VDC Isolation
- Miniature DIP Case
- >1.0 MHour MTBF
- Short Circuit Protection
- Overvoltage Protection

The IG480 series is designed to operate with the IGD962 IGBT driver.



Electrical Specifications

Specifications typical @ +25°C, 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	IG480-12W	9	12	18	VDC
	IG480-24W	18	24	36	
No-Load Input Power			0.2	0.3	W
Input Filter	Pi (π) Filter				

Output

Parameter	Conditions	Min.	Typ.	Max.	Units
Output Voltage Accuracy	+15V Output (1)		±1.0	±2.0	%
	-9V Output (2)		±3.0	±5.0	
Line Regulation	For V_{IN} Change of Min to Max		±0.2	±0.5	%
Load Regulation	For I_{OUT} Change of 5% to 100%		±0.5	±1.0	%
Ripple (20 MHz)			15	30	mV P-P
Noise (20 MHz)			100	200	mV P-P
Transient Recovery Time, See Note 2	25% Load Change		300	500	μ S
Transient Response Deviation			±3.0	±5.0	%
Temperature Coefficient				±0.03	%/°C
Output Overvoltage Protection		110	120	140	% V_{OUT}
Output Short Circuit	Continuous (Autorecovery)				

General

Parameter	Conditions	Min.	Typ.	Max.	Units
Isolation Voltage		3,000			VDC
Isolation Resistance		1,000			M Ω
Isolation Capacitance	100 kHz/0.1V		100		pF
Switching Frequency			300		kHz

EMI Characteristics

Parameter	Conditions	Min.	Typ.	Max.	Units
Radiated Emissions	See Note 3 EN 55022				Class A
Conducted Emissions	See Note 3 EN 55022				Class A
ESD	EN 61000-4-2				Criteria B; ±4 kV Contact
RS	EN 61000-4-3				Criteria A; 10V/m
EFT	See Note 4 EN 61000-4-4				Criteria B; ±2 kV
Surge	See Note 4 EN 61000-4-5				Criteria B; ±2 kV
CS	EN 61000-4-6				Criteria A; 3 Vrms
Voltage Dips	EN 61000-4-29				Criteria B; 0% - 70%

Environmental

Parameter	Conditions	Min.	Typ.	Max.	Units
Operating Temperature Range	Ambient	-40	+25	+85	°C
Storage Temperature Range		-55		+125	°C
Cooling	Free Air Convection				
Humidity	RH, Non-condensing			95	%

Physical

Case Size	1.244 x 0.800 x 0.402 Inches (31.60 x 20.30 x 10.20 mm)
Case Material	Non-Conductive Black Plastic (UL94-V0)
Weight	0.496 Oz (14.0g)

Reliability Specifications

Parameter	Conditions	Min.	Typ.	Max.	Units
MTBF	MIL HDBK 217F, 25°C, Gnd Benign	1.0			MHours

Absolute Maximum Ratings

Parameter	Conditions	Min.	Typ.	Max.	Units
Input Surge Voltage (1 Sec)	IG480-12RW	-0.7		25	VDC
	IG480-24RW	-0.7		50	
Lead Temperature	1.5 mm From Case For 10 Sec			300	°C

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

MicroPower Direct

292 Page Street
Suite D
Stoughton, MA 02072
USA

T: (781) 344-8226

F: (781) 344-8481

E: sales@micropowerdirect.com

W: www.micropowerdirect.com



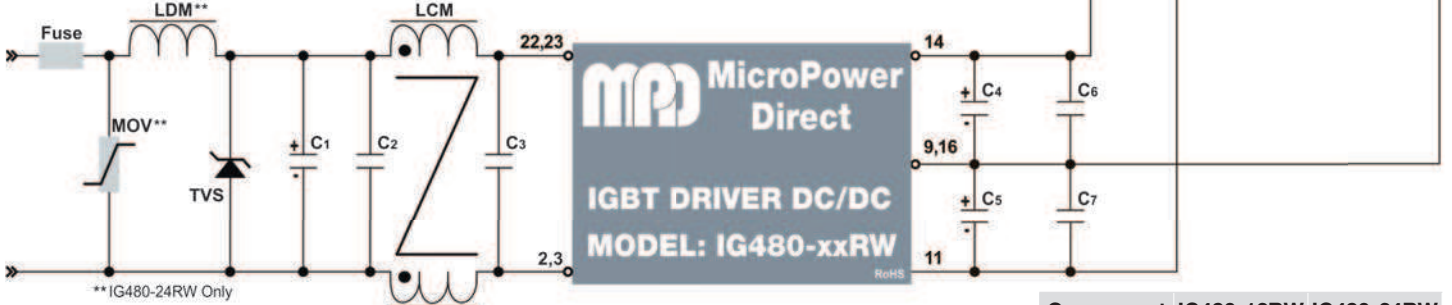
www.micropowerdirect.com

Model Number	Input (Supply)					Output 1			Output 2			Output Capacitive Load (μF Max)	Efficiency (%)	Fuse Rating Slow-Blow (mA)
	Voltage (VDC)			Current (mA)		Volt. (VDC)	Current (mA)		Volt. (VDC)	Current (mA)				
	Nom.	Range	Max.	No-Load	Max-Load	Nominal	Max.	Min.	Nominal	Max.	Min.			
IG480-12RW	12	9.0 - 18.0	20.0	16.0	471.0	15.0	200.0	10.0	-9.0	200.0	10.0	1,000	85	1,000
IG480-24RW	24	18.0 - 36.0	40.0	8.0	235.0	15.0	200.0	10.0	-9.0	200.0	10.0	1,000	85	750

Notes:

- The input voltage should not exceed the max value given in the table above. Damage to the unit could occur.
- Transient recovery is measured to within a 1% error band for a 75-100% load change.
- To meet the requirements of EN 55022, external filtering components are required on the input. A sample circuit is shown in the typical connection diagram below.
- To meet the requirements of EN 61000-4-4 and EN 61000-4-5, external components are required on the input. A sample circuit is shown in the typical connection diagram below.
- Operation at no-load will not damage these units. However, they may not meet all specifications. It is not recommended that the units be operated with a load under 5%.
- It is recommended that a fuse be used on the input of a power supply for protection. See the Model Selection table above for the correct rating.

Typical Connection

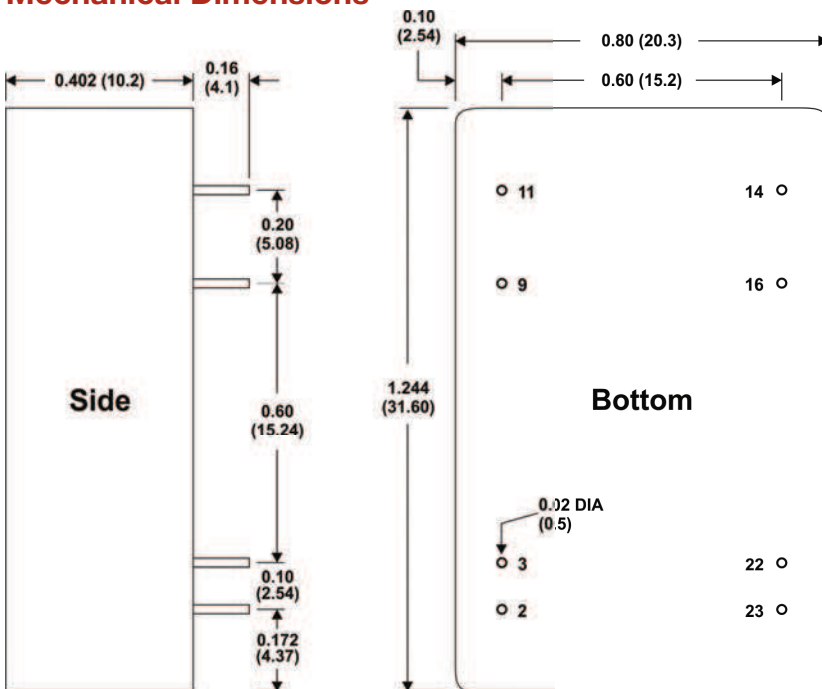


Connection Notes:

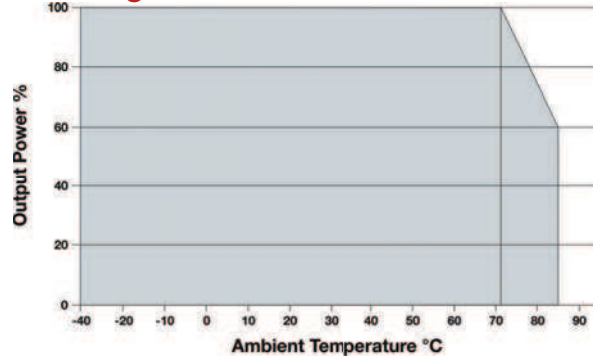
- Typical component values are given in the table at right.
- The trace (or wire) between the DC/DC and the driver circuit should be as short as possible.
- External filter capacitors should be mounted as close to the unit as possible.
- To ensure peak gate current, these capacitors should have a low ESR. Capacitors C1, C4 and C5 are electrolytic. Capacitors C2, C3, C6 and C7 are ceramic.
- If the output capacitance is increased to meet application requirements, caution must be taken not to exceed the maximum capacitive load capability of the unit (see table above).
- The average output power of the driver circuit must be lower than output power of the DC/DC.
- Filter and surge protection modules may be available from **MicroPower Direct**. Please contact the factory for more information.

Component	IG480-12RW	IG480-24RW
Fuse	See Table Above	
MOV	---	10D560K
LDM	---	56 μH
TVS	SMCJ28A	SMCJ48A
C1	680 $\mu\text{F}/25\text{V}$	120 $\mu\text{F}/50\text{V}$
C2, C3	4.7 $\mu\text{F}/50\text{V}$	
LCM	T13, 1 mH	T13, 3 mH
C4, C5	100 $\mu\text{F}/35\text{V}$	
C6, C7	10 $\mu\text{F}/25\text{V}$	

Mechanical Dimensions



Derating Curve



Pin Connections

Pin	Function	Pin	Function
2	-VIN	14	VOUTPUT 1
3	-VIN	16	Common
9	Common	22	+VIN
11	VOUTPUT 2	25	+VIN

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 side of the unit



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