

10A 75VDC Board Mount EMI Filter

<https://product.tdk.com/en/power/idq>

www.emea.tdk-lambda.com/idq



Industrial



Test



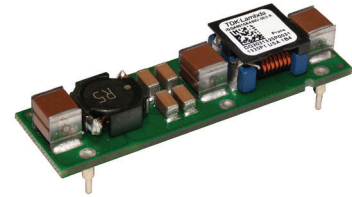
LED



COMM



Broadcast



The board mount iDQ filter modules are designed to reduce emissions from high frequency DC-DC converters. The high on-board capacitance minimizes the need for additional external components and provides exceptional differential mode filtering. The iDQ filter is rated at 75Vdc, 10A and will operate at full current with natural convection or forced air cooling in ambient temperatures between -40 to +85°C. Differential mode attenuation at 300kHz is 63dB with a 50Ω source & load impedance. The package size is just 50mm long, 15mm wide and 10.8mm high. The filters have 1500Vdc input/output to ground isolation, allowing them to be used with either positive or negative grounded systems. A pin is provided to connect additional capacitance to increase common mode attenuation.

Features	Benefits
• Rated at 75Vdc	• Can be used with 24V or 48V Nominal Inputs
• High On-board Capacitance	• Greater Noise Reduction
• Compact Size	• Less Board Space Used
• Pin for Additional Capacitance	• Easy to Increase Common Mode Attenuation

Model Selector				
Model	Rated Current (A)	Maximum DC Resistance (mΩ)	Differential Mode Attenuation at 300 kHz	Common Mode Attenuation at 300MHz
iDQ48010A480V-002-R	10	Positive leg 11.5 Negative leg 6.5	63dB	36dB

Part Numbering Scheme

iDQ480	10A	480V	002-R
Series Name	10A rated	Nominal Voltage 480V = 48Vdc	Option Code

Specification		
Model		
Input		
Rated Voltage	Vdc	75 maximum
Safety Certifications and Markings	-	CE, UKCA Mark
Environmental		
Operating Temperature	°C	-40 to 120 (see detailed specification)
Storage Temperature	°C	-55 to 125
Cooling	-	Convection
Withstand Voltage	Vdc	1,500 input ground to other terminals
Other		
Weight (Typ)	g	11.3
Size (LxWxH)	mm	50 x 15 x 10.8
Size (LxWxH)	Inches	1.97 x 0.59 x 0.43
Connections	Pins	
MTBF Telcordia SR332 (40°C)	Hours	40,000,000
Warranty	Years	5

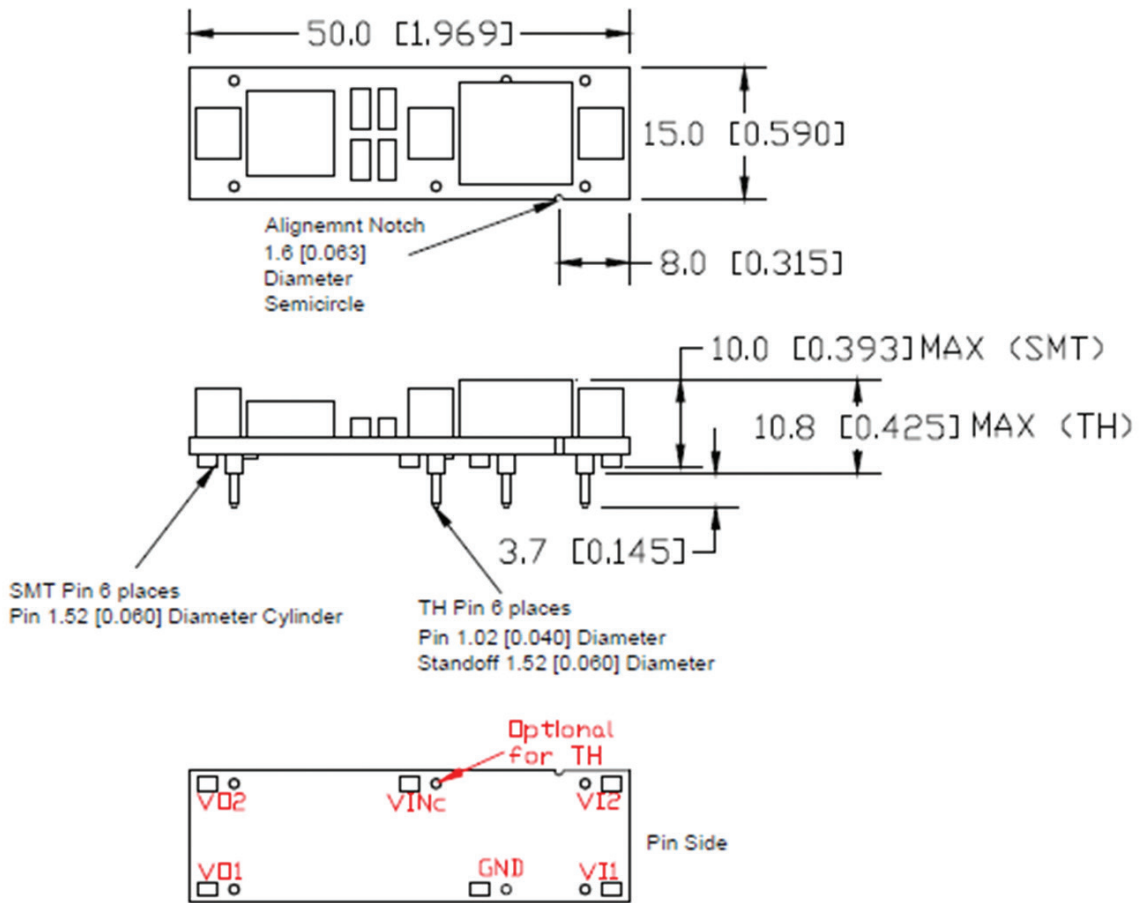
*Notes

See website for detailed [specifications](#)

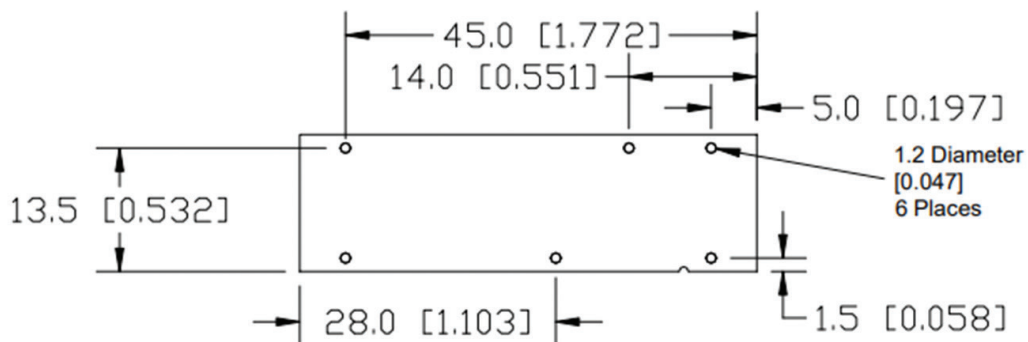
Mechanical Specification

Outline Drawing

Dimensions are in mm [in]. Unless otherwise specified tolerances are: x.x ± 0.5 [0.02], x.xx ± 0.25 [0.010]



Recommended Footprint (top view)

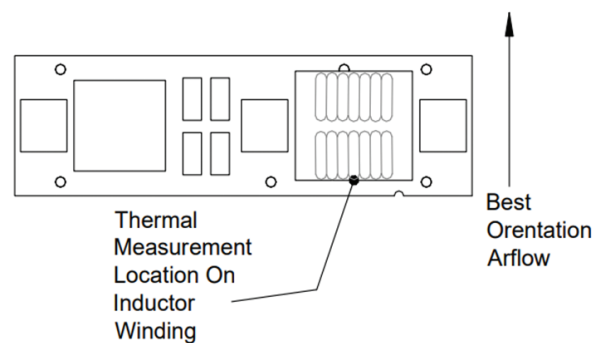
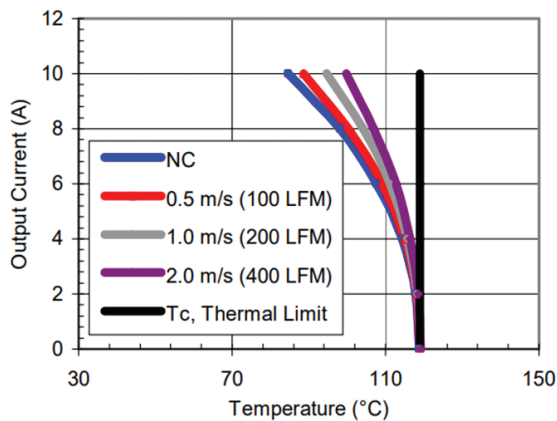


Pin Assignment

PIN	Function
1-VI1	Vin (-), connect to power source
2 - VI2	Vin (+), connect to power source
3-GND	GND
4-VO1	VOOUT (-), connect to power module to be filtered Vin (-) terminal
5-VO2	VOOUT (+), connect to power module to be filtered Vin (+) terminal
6-VINc*	Connect optional external capacitor for additional common mode filtering

* Pin 6 not populated for -002 through-hole version.
 SMT pins are copper with gold over nickel plating
 Through-hole pins are brass with gold over nickel plating

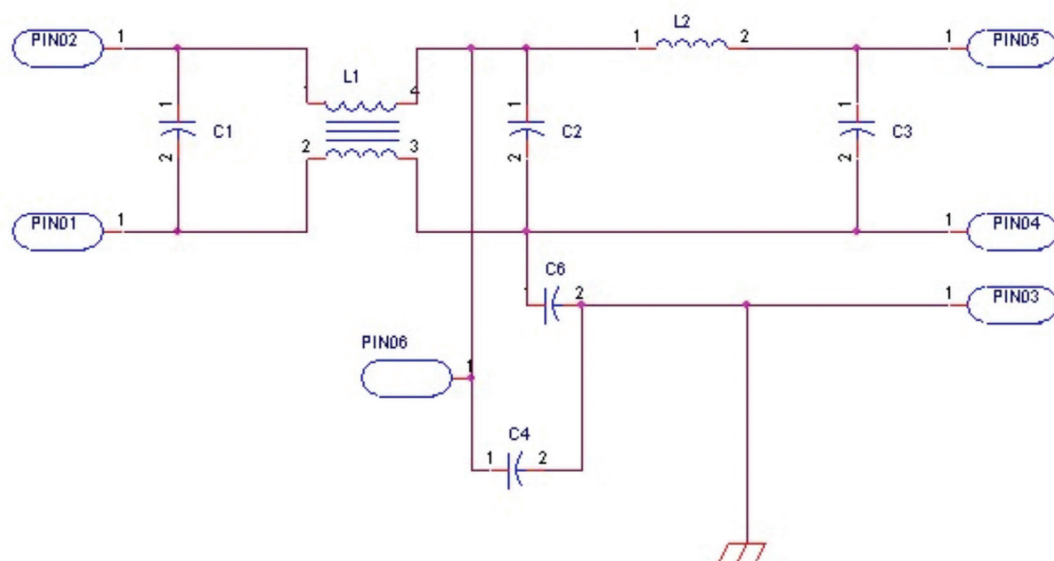
Derating



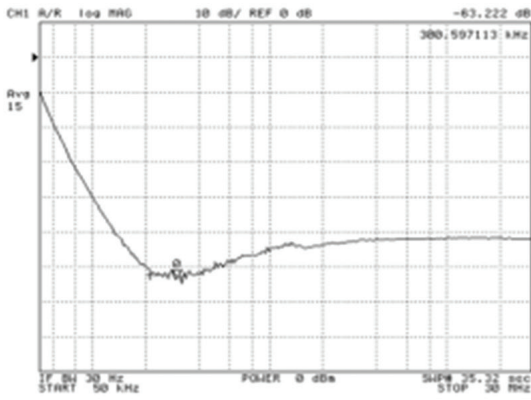
Maximum output current vs. ambient temperature at nominal input voltage for natural convection (60lfm) with airflow from pin 1 to pin 2.

iDQ48010A480V thermal measurement location – top view

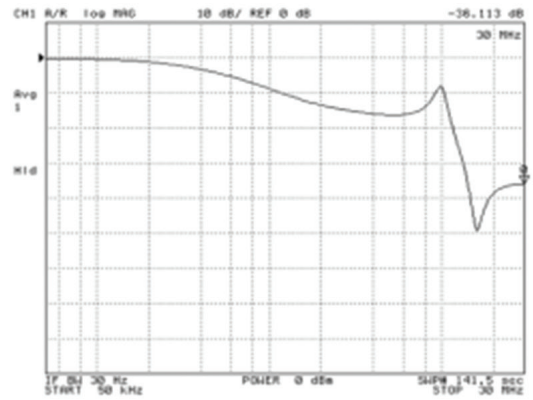
Simplified Schematic



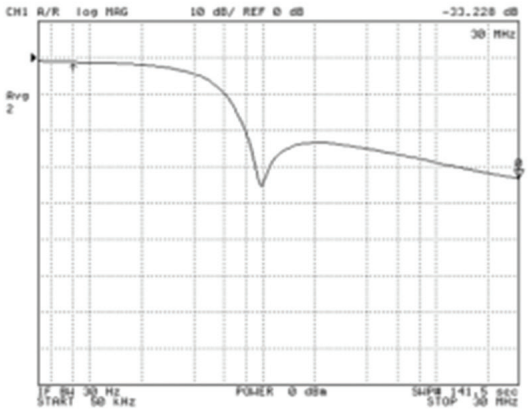
Electrical Characteristics



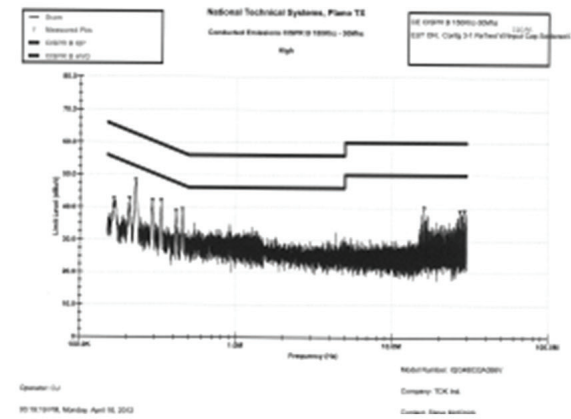
Typical Differential Mode Attenuation



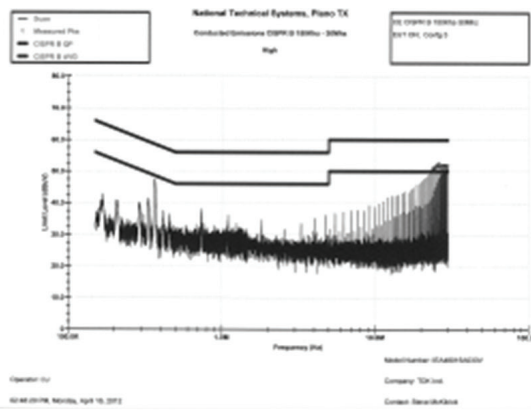
Typical Common Mode Attenuation



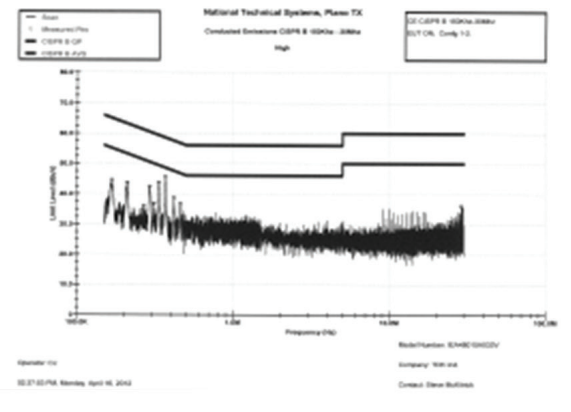
Typical Common Mode Attenuation w/ additional external 1uF capacitors



iQG48033A096V conducted emissions with 220uF bulk input capacitor and iDQ filter module



iEA48015A033V conducted emissions with iDQ filter module and no additional external components



iEA48015A033V conducted emissions with iDQ filter module and supplemental 0.1uF y-capacitors



TDK-Lambda France SAS

Tel: +33 1 60 12 71 65
 ttf.fr-powersolutions@tdk.com
 www.emea.lambda.tdk.com/fr



Italy Sales Office

Tel: +39 02 61 29 38 63
 ttf.it-powersolutions@tdk.com
 www.emea.lambda.tdk.com/it



Netherlands

ttf.nl-powersolutions@tdk.com
 www.emea.lambda.tdk.com/nl



TDK-Lambda Germany GmbH

Tel: +49 7841 666 0
 tlq.powersolutions@tdk.com
 www.emea.lambda.tdk.com/de



Austria Sales Office

Tel: +43 2256 655 84
 tlq.at-powersolutions@tdk.com
 www.emea.lambda.tdk.com/at



Switzerland Sales Office

Tel: +41 44 850 53 53
 tlq.ch-powersolutions@tdk.com
 www.emea.lambda.tdk.com/ch



Nordic Sales Office

Tel: +45 8853 8086
 tlq.dk-powersolutions@tdk.com
 www.emea.lambda.tdk.com/dk



TDK-Lambda UK Ltd.

Tel: +44 (0) 12 71 85 66 66
 tlu.powersolutions@tdk.com
 www.emea.lambda.tdk.com/uk



TDK-Lambda Ltd.

Tel: +9 723 902 4333
 tli.powersolutions@tdk.com
 www.emea.lambda.tdk.com/il-en



TDK-Lambda Americas

Tel: +1 800-LAMBDA-4 or 1-800-526-2324
 tla.powersolutions@tdk.com
 www.us.lambda.tdk.com



TDK Electronics do Brasil Ltda

Tel: +55 11 3289-9599
 sales.br@tdk-electronics.tdk.com
 www.tdk-electronics.tdk.com/en



TDK-Lambda Corporation

Tel: +81-3-6778-1113
 www.jp.lambda.tdk.com



TDK-Lambda (China) Electronics Co. Ltd.

Tel: +86 21 6485-0777
 tlc.powersolutions@tdk.com
 www.lambda.tdk.com.cn



TDK-Lambda Singapore Pte Ltd.

Tel: +65 6251 7211
 tfs.marketing@tdk.com
 www.sg.lambda.tdk.com



TDK India Private Limited, Power Supply Division

Tel: +91 80 4039-0660
 mathew.philip@tdk.com
 www.sg.lambda.tdk.com

