https://product.tdk.com/en/power/iQE
www.emea.lambda.tdk.com/iQE

132-204W, 18 to 36V or 36 to 75V Input Isolated DC-DC Quarter Brick



Industrial Test COMM Broadcast

The iQE series of isolated DC-DC converters deliver up to 204W in a compact and high-performance industry standard open-frame quarter footprint. Capable of operating from nominal input voltages of 24V (18-36V) or 48V (36 to 75V), the converter provides fully regulated outputs from 5V up to 15V for demanding environments in telecom, datacom, computing and industrial applications. The output voltage can be adjusted from -10 to +10% of nominal using the trim connection to accommodate non-standard voltages.

Features	Benefits
• High Operating Efficiency up to 93%	• Reduces Heat Losses/Dissipation in System
• Openframe Construction	• Low profile for height constraint installations
• Available from 5V up to 15V outputs	• Flexible and wide output voltage coverage for various loads
• Constant Switching Frequency	• Predictable EMI
• Monotonic Start-Up Into a Pre-Bias Output	• Reliable and Stable Output in Multi-Load conditions

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Output Adjust Range (A)	Max Current (A)	Max Power (W)	Efficiency (%)	On/Off Share	Pin Length (inch)	Baseplate
iQE48030A050V-000-R	36 - 75	5	4.5 - 5.5	30	150	91.0	Pos	0.145	No
iQE48030A050V-001-R	36 - 75	5	4.5 - 5.5	30	150	91.0	Neg	0.145	No
iQE48017A120V-000-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Pos	0.145	No
iQE48017A120V-001-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Neg	0.145	No
iQE48017A120V-007-R	36 - 75	12	10.8 - 13.2	17	204	93.0	Neg	0.180	No
iQE4W011A120V-001-R	18 - 60	12	10.8 - 13.2	11	132	90.0	Neg	0.145	No
iQE48010A150V-001-R	36 - 75	15	13.5 - 16.5	10	150	91.0	Neg	0.145	No
iQE48010A150V-007-R	36 - 75	15	13.5 - 16.5	10	150	91.0	Neg	0.180	No

Related Products

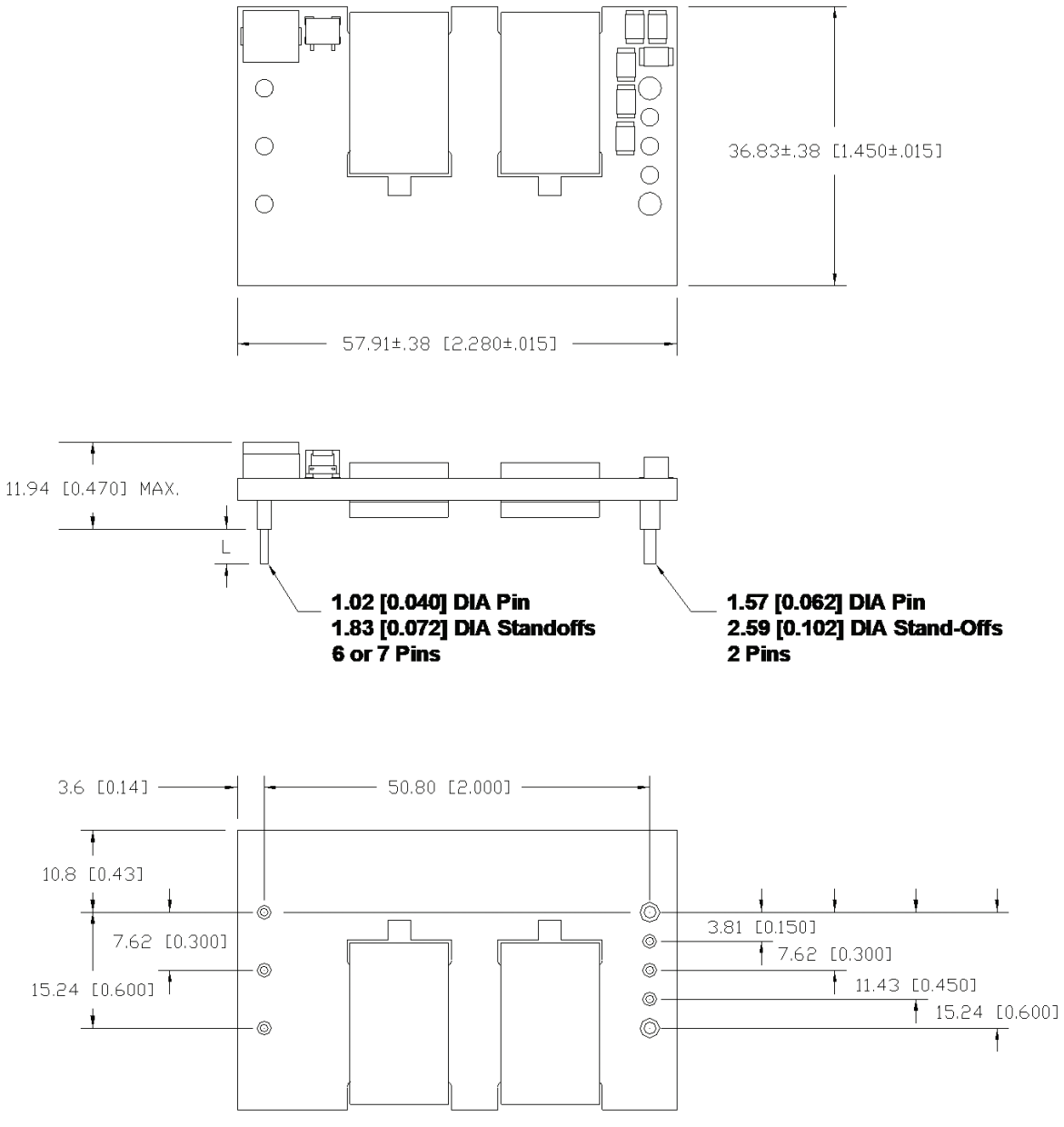
Type	Part Number	Description
Isolated DC-DC Converter	iQG	300W-504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	iEA	78W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, Input 9-36V, Isolated Quarter Brick
Non-Isolated DC-DC Converter	iBH	80W/20A, 3.5-14Vin, 0.7 - 5.5Vout, DOSA Compatible
Non-Isolated DC-DC Converter	iCH	85W/12A, 4.5-14Vin, 0.7 - 8.5Vout, DOSA Compatible
Non-Isolated DC-DC Buck-Boost Converter	i7C	300W, Input 9-53V or 9-36V, Output 9.6-48V 8A, 5-28V 12.5A or 8-24V 20A
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) that fits standard Eighth or Quarter brick and FQx or iDQ input filters

Specification

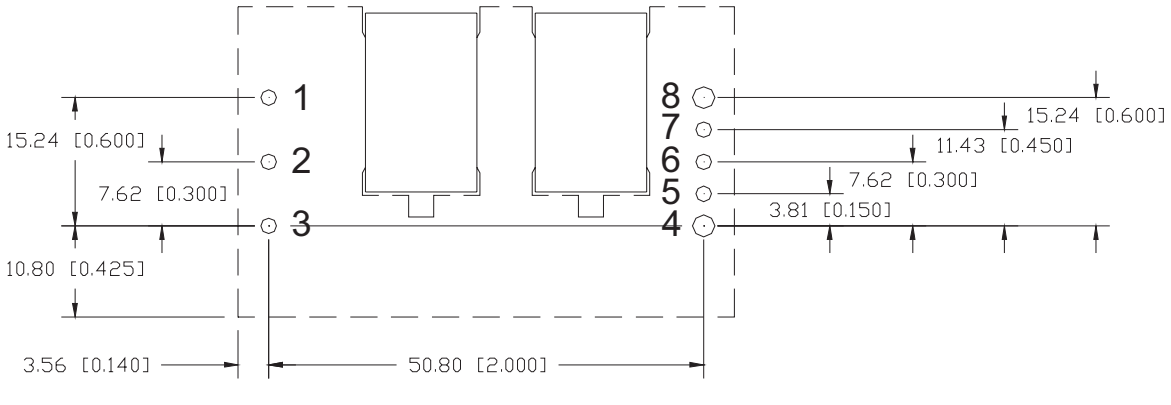
Model(s)			5V	12V	15V
Input					
Input Voltage Range	(iQE48)	Vdc	36 - 75		
	(iQE4W)			18 - 60	
Input Transient	(iQE48)	Vdc	100 (100 ms)		
	(iQE4W)		100 (100 us)		
Input Current (max)	(iQ L24)	A	10		
Turn-ON Input Voltage (typ)	(iQE48)	Vdc	33.0		
	(iQE4W)			17	
Turn-OFF Input Voltage (typ)	(iQE48)	Vdc	30.0		
	(iQE4W)			15.5	
Efficiency (typical)		%	Refer to Model Selector Table		
Safety Certifications and Markings		-	IEC/UL/CSA/EN 62368-1, 60950-1, CE Mark and UKCA Mark		
Output					
Output Voltage Initial Setpoint		Vdc	4.92 - 5.08	11.64 - 12.36	14.7 - 15.3
Output Voltage Tolerance		Vdc	4.85 - 5.15	11.58 - 12.42	14.48 - 15.52
Line Regulation (typ)		mV	7	5 ~ 8	10
Load Regulation (typ)		mV	10	14	20
Remote Sense	(iQE48)	%Vo,nom	10		
	(iQE4W)			5	
Output Voltage Adjustment Range		%Vo,nom	±10		
Ripple & Noise (typ) (2)	(iQE48)	mVpp	35	60	60
	(iQE4W)			35	
External Load Capacitance	(iQE48)	uF	0 - 3000	0 - 3000	0 - 2000
	(iQE4W)			200 - 3000	
Switching Frequency (fixed)	(iQE48)	kHz	330		
	(iQE4W)			285	
Overcurrent Protection (hiccup)	(iQE48)	A	41	22	13
	(iQE4W)			15	
Over Voltage Protection		Vdc	5.7 - 6.8	13.6 - 16.5	16.7 - 21
Over Temperature Protection		-	Auto recovery		
Environmental					
Operating Temperature (Tc)		°C	-40 to 125		
Storage Temperature		°C	-55 to 125		
Humidity (non condensing)		%RH	10 - 95		
Cooling		-	Convection or forced air (See product specifications for derating)		
Isolation Voltage		Vdc	1500 (Input to Output)		
Shock		-	MIL-STD-202G, Method 213B, Test Condition 1		
Vibration		-	5 to 50 Hz (0.5g); 50 to 500 Hz (1.5g); three axes; Bellcore TR-EOP-000063-5.4.4		
Other					
Weight (max)		g	50		
Size (LxWxH)		mm	57.91 x 36.83 x 11.94		
Size (LxWxH)		inches	2.28 x 1.45 x 0.47		
MTBF - Telcordia SR-332 (100% Load, 40°C)		MHrs	> 2.93		
Warranty		yrs	3		

Notes
(1) See website for detailed product iQE48 and iQE4W specifications.
(2) Measured with one 22 µF and one 0.1 µF ceramic capacitor, BW = 20MHz.

Mechanical Specification



Recommended PCB Hole Pattern



Pinout

PIN	Function
1	Vin (+)
2	On / Off
3	Vin (-)
4	Vout (-)
5	Sense (-)
6	Trim
7	Sense (+)
8	Vout (+)

Pin base material is copper with tin over nickel plating.



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