

48-78W, 18 to 60V or 36 to 75V Input Isolated DC-DC Eighth Brick

<https://product.tdk.com/en/power/iEA>
www.emea.lambda.tdk.com/iEA



Industrial



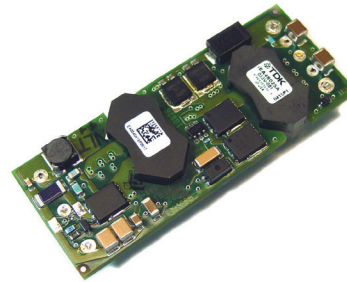
Test



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Broadcast



The iEA series of isolated DC-DC converters deliver up to 78W in a compact industry eighth brick footprint. Available in 36-75V or 18-60V inputs with single outputs from 5V, 12V, 15V, 18V and 28V, these converters are designed primarily for use in 48V and 24V input bus architectures in communications, test and measurement, and industrial applications. Its single board open frame design allows the iEA series to achieve a low profile design of 8.81mm max to support tight board-to-board spacing and still provide high useable power at elevated ambient temperatures.

Features

- High Operating Efficiency up to 90.5%
- Open Frame, Single Board Construction
- Constant Switching Frequency
- -40 to 125 °C Operating Temperature With Minimal Derating

Benefits

- Reduces Heat Losses/Dissipation in System
- Low Profile for Tight Board to Board Spacing
- Predictable EMI
- High Useable Power At Elevated Ambient Temperature

Model Selector

Model	Input Voltage (V)	Output Voltage (V)	Maximum Current (A)	Maximum Power (W)	On/Off Polarity	Efficiency, Full Load (typ)	Pin Length (inch)
IEA48003A280V-001-R	36 - 75	28	2.67	75	Neg	90%	0.145
IEA48003A280V-005-R	36 - 75	28	2.67	75	Neg	90%	0.200
IEA48004A180V-001-R	36 - 75	18	3.75	68	Neg	90.5%	0.145
IEA48005A150V-001-R	36 - 75	15	4.5	68	Neg	90%	0.145
IEA48007A120V-000-R	36 - 75	12	6.5	78	Pos	90.5%	0.145
IEA48007A120V-001-R	36 - 75	12	6.5	78	Neg	90.5%	0.145
IEA48007A120V-005-R	36 - 75	12	6.5	78	Neg	90.5%	0.200
IEA48015A050V-000-R	36 - 75	5	15	75	Pos	90%	0.145
IEA48015A050V-001-R	36 - 75	5	15	75	Neg	90%	0.145
IEA4W004A120V-003-R	18 - 60	12	4	48	Neg	91%	0.110

Related Products

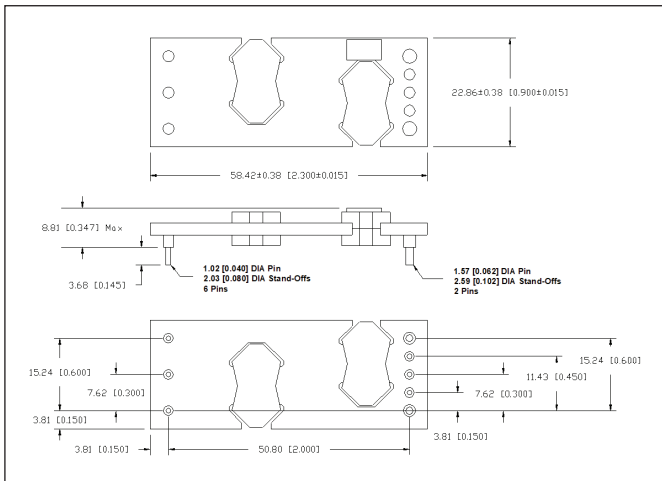
Type	Part Number	Description
Isolated DC-DC Converter	iQL	300W, Input 36-75V or 18-36V, Isolated Quarter Brick
Isolated DC-DC Converter	iQG	300W~504W, Input 36-75V, Isolated Quarter Brick
Isolated DC-DC Converter	iEH	300W, Input 36-75V, Isolated Eighth Brick
Isolated DC-DC Converter	GQA	120W Industrial, 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
Input Filter	iDQ	75V / 10A Filter
Evaluation Board	FQX-HQA-EVK-D0	Evaluation board (no modules) accepting standard Eighth or Quarter brick and FQx or iDQ input filters

Specifications							
Model		5V	12V (iEA48)	12V (iEA4W)	15V	18V	28V
Input							
Input Voltage Range	Vdc	36 - 75		18 - 60	36 - 75		
Input Transient (100 ms)	Vdc	100		72	100		
Input Current (max)	A	4		5	4		
Turn-On Input Voltage (typ)	Vdc	33		17	33		
Turn-Off Input Voltage (typ)	Vdc	30		15.5	30		
Efficiency (typical)	%	See 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	11.64 - 12.36	14.55 - 15.45	17.5 - 18.5	27.16 - 28.84
Output Voltage Tolerance	Vdc	4.85 - 5.15	11.58 - 12.42	11.52 - 12.48	14.47 - 15.52	17.28 - 18.72	26.88 - 29.12
Line Regulation (typ)	mV	2	10				20
Load Regulation (typ)	mV	1	10				15
External Load Capacitance	uF	0 - 5000	0 - 2000	200 - 2000	0 - 1500	0 - 1000	0 - 470
Ripple & Noise (typ)	mVpp	55	80	75	40	50	80
Switching Frequency (fixed)	kHz	400	400	215	300	375	450
Overcurrent Protection Threshold (Hiccup)	A	20	8.5	5.5	6	4.4	4
Over Voltage Protection	Vdc	5.7 - 6.7	13.6 - 15.7	16.5	16.8 - 22	20 - 26	32-38
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	-	Conduction, convection or forced air (See product specifications for derating)					
Isolation Voltage (Input to Output)	Vdc	1500					
Isolation Resistance	MΩ	≥10					
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	30.4					
Size (LxWxH)	inch	2.3 x 0.9 x 0.347					
	mm	58.42 x 22.86 x 8.81					
MTBF - Telcordia SR-332 (100% Load, 40°C)	MHrs	> 4.8					
Warranty	yrs	3					

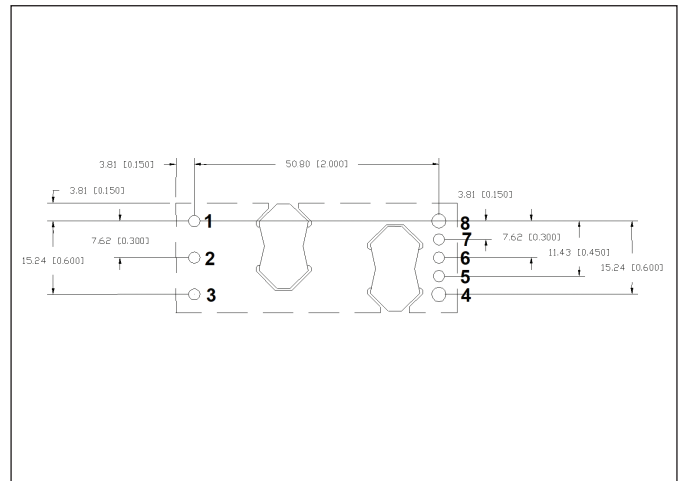
Notes

See website for detailed product specifications and test methods

Mechanical Specification iEA48 Series



Recommended PCB Hole Pattern iEA48 Series

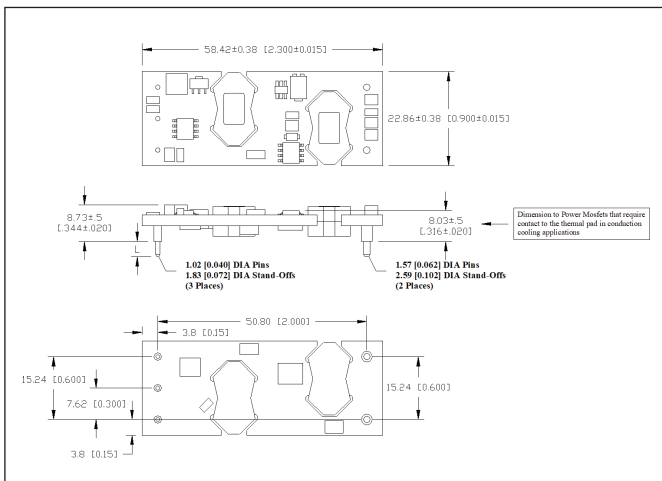


PIN Assignment iEA48 Series

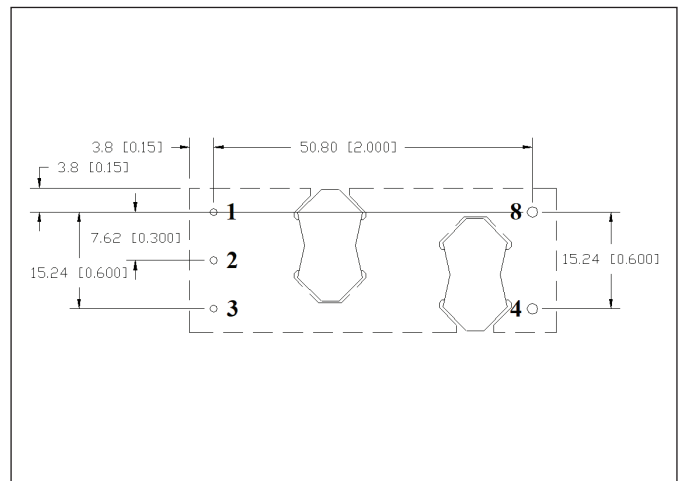
Pin	Function	Pin	Function
1	Vin(+)	5	Sense(-)
2	On/Off	6	Trim
3	Vin(-)	7	Sense(+)
4	Vo(-)	8	Vo(+)

Pin base material is brass with tin plating.

Mechanical Specification iEA4W Series



Recommended PCB Hole Pattern iEA4W Series



PIN Assignment iEA4W Series

Pin	Function	Pin	Function
1	Vin(+)	4	Vo(-)
2	On/Off	8	Vo(+)
3	Vin(-)		

Pin base material is brass with gold over nickel plating.



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