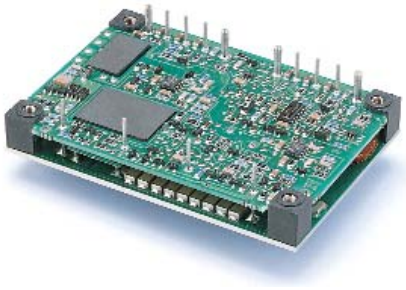
TQD DC-DC Series Data Sheet
Dual Output, 100 Watts



RoHS Compliant

Features

- RoHS lead-solder-exempt compliant
- Independent dual outputs
- Flexible load sharing
- High efficiency
- Open-frame design
- Planar magnetics
- Independent trim for each output
- Synchronous rectification
- 1500 V isolation
- 100 °C base plate operation

Description

The TQD dc-dc converters are high power, dual output, fully-isolated converters that feature high efficiency, 1500 VDC isolation, and open-frame packaging. The TQD Series allows board designers to deliver any combination of power from either output, up to each model's maximum rating. The TQD Series is available in 5V/3.3V or 3.3V/2.5V combinations, uses planar magnetics, and has an MTBF of over a million hours.

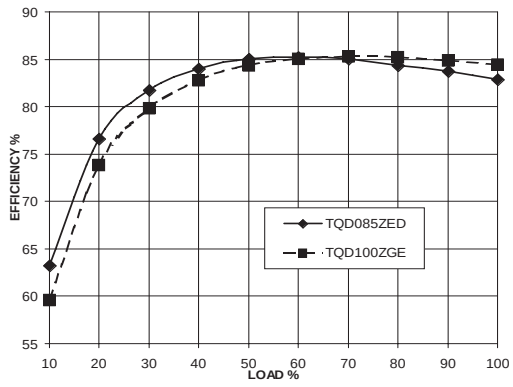
Technical Specifications

Input	
Voltage range	
5 VDC nominal	18 - 36 VDC
12 VDC nominal	36 - 72 VDC
Reflected ripple	50 mA
Input Reverse Voltage Protection	Shunt Diode

Output	
Setpoint Accuracy	±1%
Line Regulation V_{in} Min. - V_{in} Max., I_{out} Rated, Output 1	0.2% V_{out}
Load Regulation I_{out} Min. - I_{out} Max., V_{in} Nom., Output 1	0.3% V_{out}
Minimum Output Current, Each Output	10 % I_{out} Rated
Dynamic Regulation, Loadstep	25% I_{out}
Pk Deviation	4% V_{out}
Settling Time	500 µs
Voltage Trim Range	±10%
Power Limit Threshold Range, % of I_{out} Rated	110 - 130%
OVP Trip Range	115 - 140% V_{out} Nom.
UVP Trip Range	70 - 90%

General	
Turn-On Time	20 ms
Remote Shutdown	Positive Logic
Switching Frequency	250 kHz
Isolation	
Input - Output	1500 VDC
Input - Case	1050 VDC
Output - Case	500 VDC
Temperature Coefficient	0.03 %/°C
Case Temperature	
Operating Range	-40 To +100 °C
Storage Range	-40 To +125 °C
Thermal Shutdown Range	105 To 115 °C
Humidity Max., Non-Condensing	95%
Vibration, 3 Axes, 5 Min Each	5 g
MTBF† (Bellcore TR-NWT-000332)	1.2 X 10^6 hrs
Safety	UL, cUL, TUV
Weight (Approx.)	3.8 oz

Efficiency vs. Load (48V Input)



Notes

† MTBF predictions may vary slightly from model to model.

Specifications typically at 25 °C, normal line, and full load, unless otherwise stated.

Soldering Conditions: I/O pins, 260 °C, ten seconds; fully compatible with commercial wave-soldering equipment.

Units are water-washable and fully compatible with commercial spray or immersion post wave-solder washing equipment.

Model Selection

MODEL	INPUT VOLTAGE (VOLTS)	INPUT VOLTAGE RANGE (VOLTS)	MAXIMUM INPUT CURRENT (AMPS)*	OUTPUT VOLTAGE (VOLTS)	RATED OUTPUT CURRENT (AMPS)	RIPPLE & NOISE pk-pk (mV)	TYPICAL EFFICIENCY**
TQD080ZE2.0-A	48	36-72	1.9	3.3/2.0	15/15	100/75	80%
TQD085ZED-A	48	36-72	2.5	3.3/2.5	20/25	100/75	82%
TQD100ZGE-A	48	36-72	3.7	5.0/3.3	20/25	100/75	83%

NOTES:

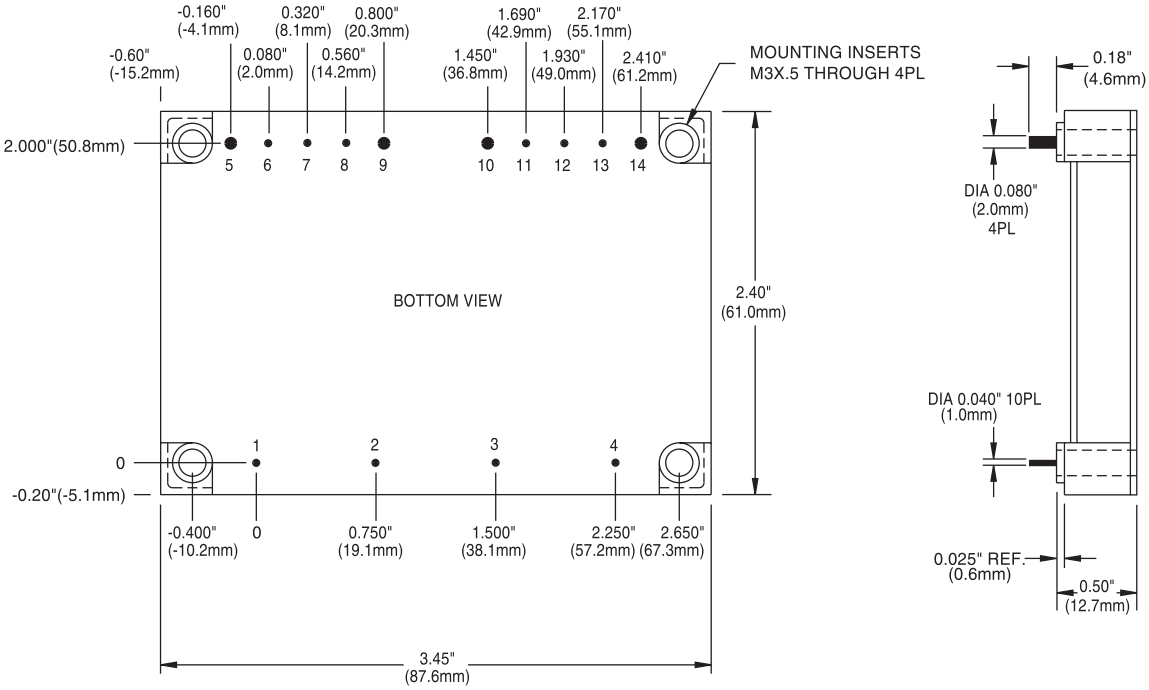
* Maximum input current at minimum input voltage, maximum rated output power.

** At nominal V_{in}, rated output.

Current can be drawn from either output to its maximum value, or from both outputs.

Model numbers highlighted in yellow or shaded are not recommended for new designs.

Mechanical Drawing



Thermal Impedance	
Natural Convection	5.7 °C/W
100 LFM	3.9 °C/W
200 LFM	2.6 °C/W
300 LFM	1.9 °C/W
400 LFM	1.7 °C/W

Note:
Thermal impedance data is dependent on many environmental factors. The exact thermal performance should be validated for specific application.

Pin	Function
1	$-V_{in}$
2	Enable
3	Case
4	$+V_{in}$
5	$+V_{out1}$
6	+ Sense 1
7	Trim 1
8	- Sense 1
9	$-V_{out1}$
10	$-V_{out2}$
11	- Sense 2
12	Trim 2
13	+ Sense 2
14	$+V_{out2}$

Tolerances	
Inches:	(Millimeters)
.XX ± 0.020	.X ± 0.5
.XXX ± 0.010	.XX ± 0.25
Pin:	
± 0.002	± 0.05

(Dimensions as listed unless otherwise specified.)

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