

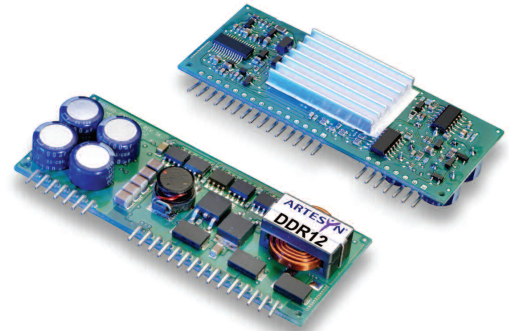
DDR12 Series

Dual output

NEW Product



- High current dual-output power module for DDR memory
- Single compact module provides 25 A @ 2.5 V for V_{ddq} supply and 8 A @ 1.25 V for V_{tt} termination
- Tracking dual output voltages (1.25 V @ 8 A, 2.5 V @ 25 A)
- Output voltage remote sense (only on V_{ddq})
- Sink capability for logic terminations
- Power good output signal
- Overvoltage protection
- Overcurrent protection
- Remote ON/OFF
- Available RoHS compliant



The dual output DDR12-25D08-AJ is specially designed to meet the power needs of double data rate memory DIMMS and associated memory control logic. The V_{tt} output tracks the V_{ddq} output, while the V_{tt} output can sink current as required by logic terminations. This converter offers typical efficiencies greater than 84% when operated at 50% load or greater. This model features a wide input range as well as trimmable output voltages. Remote sense on V_{ddq} and remote ON/OFF facilities are included as standard, and the converter is protected against over-current and over-voltage conditions.



All specifications are typical at nominal input, full load at 25 °C unless otherwise stated

SPECIFICATIONS

OUTPUT SPECIFICATIONS - V_{ddq}

| | | |
|--------------------------|---------------------------|---------------------------------|
| Voltage adjustability | | 2.32-2.75 Vdc |
| Output setpoint accuracy | Using 1% trim resistors | ±2.5% |
| Line regulation | Low line to high line | ±0.1% |
| Load regulation | Minimum load to full load | +0%/-1.0% |
| Cross regulation | | ±0.4% |
| Temperature Co-efficient | | 0.2 mV/°C |
| Ripple and noise | 5 Hz to 20 MHz | 50 mV pk-pk (See Note 1) |
| Transient response | 4 A/100 μ s | ±3.0% deviation (See Note 2) |
| Overshoot | Nominal output at turn-on | 2.0% max. |
| Undershoot | | 150 mV max. |

OUTPUT SPECIFICATIONS - V_{tt}

| | | |
|--------------------|---|---------------------------------|
| Tracking Accuracy | Measured at Converter Pins (= $V_{ddq}/2 - V_{tt}$) | 12 mV |
| Ripple and noise | 5 Hz to 20 MHz | 30 mV pk-pk (See Note 1) |
| Transient response | 8 A/1 μ s | ±3.0% deviation (See Note 2) |

INPUT SPECIFICATIONS

| | | |
|----------------------|----------------------------|--|
| Input voltage range | Nominal 12 V | 10.8-13.2 Vdc |
| Input current | Minimum load Remote OFF | 400 mA 20 mA |
| Input current (max.) | (See Note 3) | 9 A max. @ I_o max. and $V_{in} = 10.8$ Vdc |

INPUT SPECIFICATIONS - Contd.

| | | |
|------------------------|---------------|------------------------------|
| Input reflected ripple | (See Note 4) | 100 mA (pk-pk) |
| Remote ON/OFF | | |
| Logic compatibility | | Open collector ref to -input |
| ON | | >2.0 Vdc |
| OFF | | <0.8 Vdc |
| Start-up time | Power up | <20 ms |
| (See Note 5) | Remote ON/OFF | <20 ms |

EMC CHARACTERISTICS

| | |
|-------------------------|-----------------------|
| Electrostatic discharge | EN61000-4-2, IEC801-2 |
| Conducted immunity | EN61000-4-2 |

GENERAL SPECIFICATIONS

| | | |
|-------------------------|--|---------------------------------------|
| Efficiency | $V_{ddq} = 2.5$ V $V_{tt} = 1.25$ V | 84% @ full load |
| Switching frequency | V_{ddq} V_{tt} | 300 kHz typ. 300 kHz typ. |
| Approvals and standards | (See Note 7) | IEC60950/EN60950 UL/cUL 1950/60950 |
| Material flammability | | UL94V-0 |
| Weight | | 34 g (1.3 oz) |
| MTBF | Telcordia SR-332 | TBD hours |

ENVIRONMENTAL SPECIFICATIONS

| | | |
|---------------------|---|-------------------------------------|
| Thermal performance | Operating ambient, temperature Non-operating | 0 °C to +80 °C -40 °C to +125 °C |
|---------------------|---|-------------------------------------|

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| OUTPUT POWER (MAX.) | INPUT VOLTAGE | OVP | OUTPUT VOLTAGE | OUTPUT CURRENT (MIN.) | OUTPUT CURRENT (MAX) | EFFICIENCY (TYP.) | LOAD REGULATION | MODEL NUMBER ^(10,11) |
|---------------------|---------------|---------|----------------|-----------------------|----------------------|-------------------|--------------------|---------------------------------|
| 69 W | 10.8-13.2 Vdc | 3.6 Vdc | 2.32-2.75 Vdc | 1.5 A | 25 A | 84% | ±1.0% | DDR12-25D08-AJ |
| 11 W | | 1.8 Vdc | 1.16-1.375 Vdc | 0 A | 8 A | | See Tracking Spec. | |

Notes

- Measured as per recommended set-up. $C_{in} = 270 \mu\text{F}$ (20 mΩ ESR max, $C_{out} = 3 \times 560 \mu\text{F}$ (5 mΩ ESR max).
- $V_{in} = 12 \text{ Vdc}$, $T_c = 25 \text{ }^\circ\text{C}$, bounded by min/max load specification with recommended system caps.
- External input fusing is recommended.
- Measured with external filter.
- Start-up into resistive load.
- Meets levels A and B conducted emissions with external components.
- This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
- Large value ceramic capacitor located close to the input pins is recommended (TDK p/N C4532X7R1E106M).
- Use of additional high quality ceramic output capacitors is recommended in the end system.
- TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
- NOTICE: Some models do not support all options. Please contact your local Artesyn representative or use the on-line model number search tool at <http://www.artesyn.com/powergroup/products.htm> to find a suitable alternative.

PROTECTION

| | | |
|---------------|-----------------------|-----------------------|
| Short-circuit | V_{ddq} V_{tt} | Latching Latching |
| Overvoltage | V_{ddq} V_{tt} | Latching Latching |
| Overcurrent | V_{ddq} V_{tt} | Latching Fold-back |

RECOMMENDED SYSTEM CAPACITANCE

| | | |
|---------------------------------|-----------------------|--|
| Input capacitance | (See Note 8) | 10 μF /3 mΩ ESR max. |
| Output capacitance (See Note 9) | V_{ddq} V_{tt} | 1680 μF /5 mΩ ESR max. 1680 μF /5 mΩ ESR max. |

| PIN CONNECTIONS | | | |
|-----------------|---------------|---------|-------------------|
| PIN NO. | FUNCTION | PIN NO. | FUNCTION |
| J1-1 | Power Good | J2-5 | Ground |
| J1-2 | Output Enable | J2-6 | Ground |
| J1-3 | Ground | J2-7 | Ground |
| J1-4 | Ground | J2-8 | Ground |
| J1-5 | 12 V Input | J2-9 | V_{ddq} Sense - |
| J1-6 | 12 V Input | J2-10 | V_{ddq} Sense + |
| J1-7 | 12 V Input | J2-11 | V_{ddq} |
| J2-1 | V_{tt} Ref | J2-12 | V_{ddq} |
| J2-2 | V_{tt} | J2-13 | V_{ddq} |
| J2-3 | V_{tt} | J2-14 | V_{ddq} |
| J2-4 | Ground | J2-15 | V_{ddq} |

CAUTION: Hazardous internal voltages and high temperatures. Ensure that unit is not user accessible.

International Safety Standard Approvals



UL/cUL CAN/CSA 22.2
UL 60950 File No. E139421



TÜV Product Service (EN60950) Certificate No. B 02 12 19870 206
CB report and certificate to IEC60950

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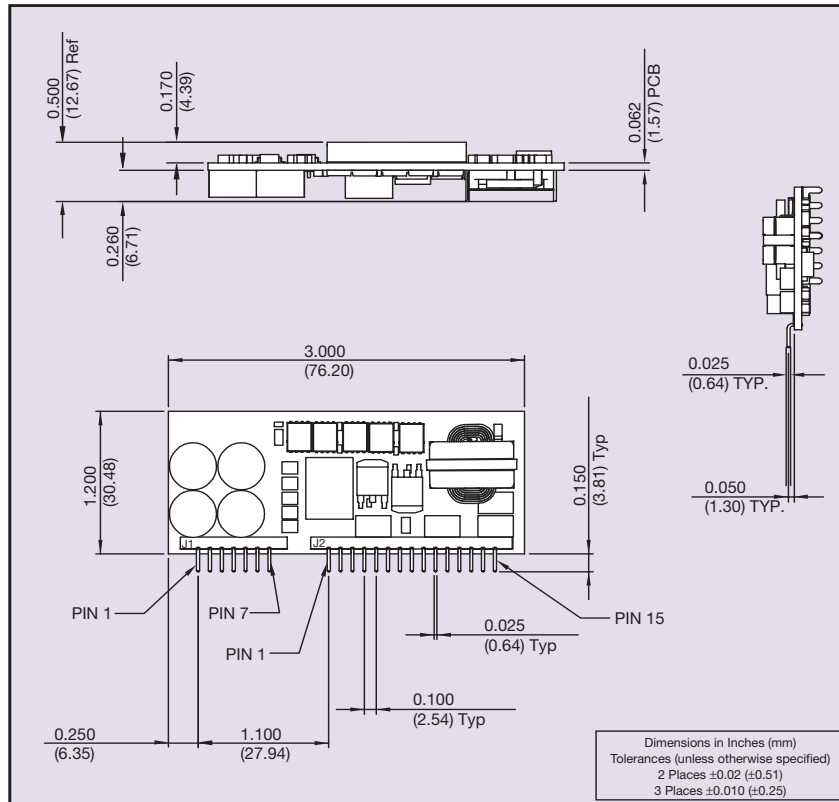
DC-DC CONVERTERS

Tracking Dual Output

3

For the most current data and application support visit www.artesyn.com/powergroup/products.htm

NEW Product



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Please consult our website for the following items: ✓ Application Note ✓ Longform Data Sheet

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