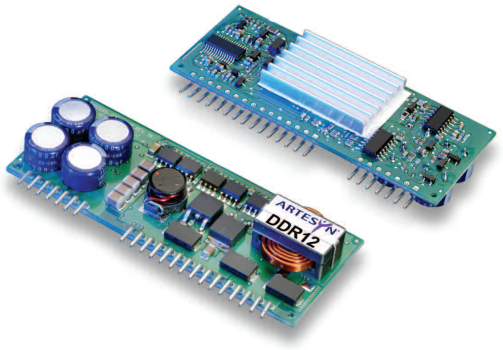
DDR12 Series

Dual output

ARTESYN TECHNOLOGIES

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.

2 YEAR WARRANTY

SPECIFICATIONS

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

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 (See Note 1)	5 Hz to 20 MHz	50 mV pk-pk
Transient response (See Note 2)	4 A/100 µs	±3.0% deviation
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 (See Note 1)	5 Hz to 20 MHz	30 mV pk-pk
Transient response (See Note 2)	8 A/1 µs	±3.0% deviation

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. @ Io max. and Vin = 10.8 Vdc

INPUT SPECIFICATIONS - Contd.

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

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

NEW Product

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

1 Measured as per recommended set-up. Cin = 270 µF (20 mΩ ESR max, Cout = 3 x 560 µF (5 mΩ ESR max).
2 Vin = 12 Vdc, Tc = 25 °C, bounded by min/max load specification with recommended system caps.
3 External input fusing is recommended.
4 Measured with external filter.
5 Start-up into resistive load.
6 Meets levels A and B conducted emissions with external components.
7 This product is only for inclusion by professional installers within other equipment and must not be operated as a stand alone product.
8 Large value ceramic capacitor located close to the input pins is recommended (TDK p/N C4532X7R1E106M).
9 Use of additional high quality ceramic output capacitors is recommended in the end system.
10 TSE RoHS 5/6 (non Pb-free) compliant versions may be available on special request, please contact your local sales representative for details.
11 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.

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}

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.

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

International Safety Standard Approvals

c UL us — UL/cUL CAN/CSA 22.2
UL 60950 File No. E139421

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