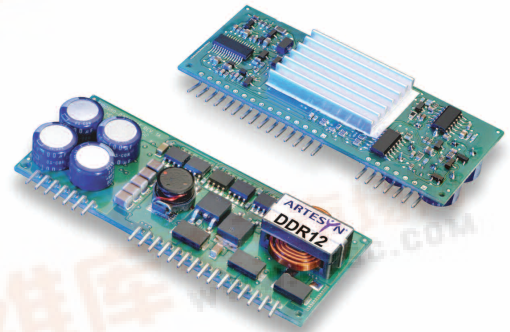


# DDR12 Series

## 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 (See Note 1)	5 Hz to 20 MHz 50 mV pk-pk
Transient response (See Note 2)	4 A/100 $\mu$ s ±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 $\mu$ s	±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. @ $I_o$ 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 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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# DDR12 Series

## Dual output



DC-DC CONVERTERS Tracking Dual Output

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**NEW Product**

OUTPUT POWER (MAX.)	INPUT VOLTAGE	OVP	OUTPUT VOLTAGE	OUTPUT CURRENT (MIN.)	OUTPUT CURRENT (MAX)	EFFICIENCY (TYP.)	LOAD REGULATION	MODEL NUMBER <sup>(10,11)</sup>
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.  $C_{in} = 270 \mu F$  (20 mΩ ESR max,  $C_{out} = 3 \times 560 \mu F$  (5 mΩ ESR max).
- $V_{in} = 12 Vdc$ ,  $T_c = 25^\circ C$ , 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 $\mu F$ /3 mΩ ESR max.
Output capacitance (See Note 9)	$V_{ddq}$ $V_{tt}$	1680 $\mu F$ /5 mΩ ESR max. 1680 $\mu F$ /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

# DDR12 Series

## Dual output



DC-DC CONVERTERS Tracking Dual Output

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**NEW Product**

