

DDR12 Series

Dual output

DC-DC CONVERTERS Tracking Dual Output

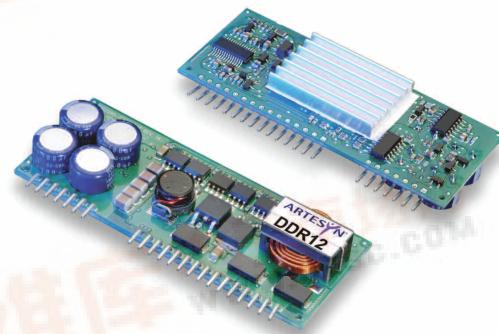
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NEW Product



- 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 µs	±3.0% deviation
Overshoot	Nominal output at turn-on	2.0% max.
Undershoot	150 mV max.	

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 (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	0 °C to +80 °C
	Non-operating	-40 °C to +125 °C

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

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D u a l o u t p u t



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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 ^(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. $C_{in} = 270 \mu F$ (20 mΩ ESR max, $C_{out} = 3 \times 560 \mu F$ (5 mΩ ESR max).
- 2 $V_{in} = 12 \text{ Vdc}$, $T_c = 25^\circ\text{C}$, 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.

PROTECTION

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

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.

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.

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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