DQA2P Series

2W, Isolated DC-DC Converters



Features

- SIP4 Package
- Input / Output Isolation: 1500VDC
- High Efficiency
- Lead Free Design, RoHS Compliant
- Operating Temperature Range: -40°C to +105°C
- Designed according to IEC/EN/UL 62368-1

Applications

These converters are well suitable for battery operated equipment, measurement equipment, telecom, wireless network, Industry control system, everywhere where isolated, tightly regulated voltages and compact size are required.

Models and Ratings

Model Number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current (mA)	Input Current (mA) typ.		Efficiency (%) typ.	Capacitive Load (µF) max.
			Full Load	No Load	Full Load		
DQA2-03S0P	2.97 - 3.63 3.3V nominal	3.3	400	8	513	78	2200
DQA2-03S1P		5	400	8	722	84	2200
DQA2-03SAP		9	222	8	712	85	1000
DQA2-03S2P		12	167	8	706	86	560
DQA2-03S3P		15	134	8	708	86	560
DQA2-03S5P		24	83	8	727	83	100
DQA2-05S0P	4.5 - 5.5 5V nominal	3.3	400	8	338	78	2200
DQA2-05S1P		5	400	8	476	84	2200
DQA2-05SAP		9	222	8	470	85	1000
DQA2-05S2P		12	167	8	466	86	560
DQA2-05S3P		15	134	8	467	86	560
DQA2-05S5P		24	83	8	480	83	100
DQA2-12S0P	10.8 - 13.2 12V nominal	3.3	400	8	141	78	2200
DQA2-12S1P		5	400	8	198	84	2200
DQA2-12SAP		9	222	8	196	85	1000
DQA2-12S2P		12	167	8	194	86	560
DQA2-12S3P		15	134	8	195	86	560
DQA2-12S5P		24	83	8	200	83	100

Models and Ratings (continued)

Model Number	Input Voltage Range (VDC)	Output Voltage (VDC)	Output Current (mA)	Input Current (mA) typ.		Efficiency (%) typ.	Capacitive Load (µF) max.
			Full Load	No Load	Full Load		
DQA2-15S0P	13.5 - 16.5 15V nominal	3.3	400	8	113	78	2200
DQA2-15S1P		5	400	8	159	84	2200
DQA2-15SAP		9	222	8	157	85	1000
DQA2-15S2P		12	167	8	155	86	560
DQA2-15S3P		15	134	8	156	86	560
DQA2-15S5P		24	83	8	160	83	100
DQA2-24S0P	21.6 - 26.4 24V nominal	3.3	400	8	71	78	2200
DQA2-24S1P		5	400	8	99	84	2200
DQA2-24SAP		9	222	8	98	85	1000
DQA2-24S2P		12	167	8	97	86	560
DQA2-24S3P		15	134	8	97	86	560
DQA2-24S5P		24	83	8	100	83	100

Input Specifications

Input voltage		See ‘Models and Ratings’ table
Surge voltage	1 s max.	
	3.3Vin models	10VDC max.
	5Vin models	10VDC max.
	12Vin models	15VDC max.
	15Vin models	20VDC max.
	24Vin models	30VDC max.
Input filter		Capacitor

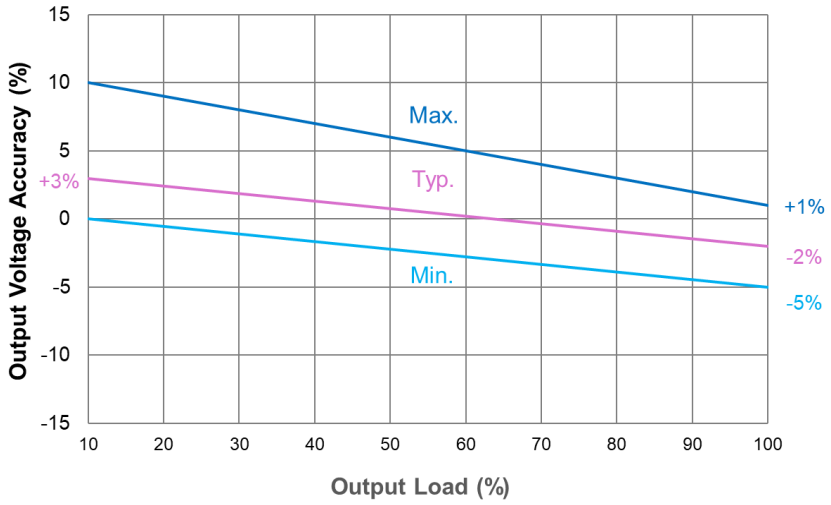
Output Specifications

Output power		2 Watts max.
Voltage accuracy	Nominal Vin and full load	See ‘Output Voltage Tolerance’
Minimum load		10% load of full load

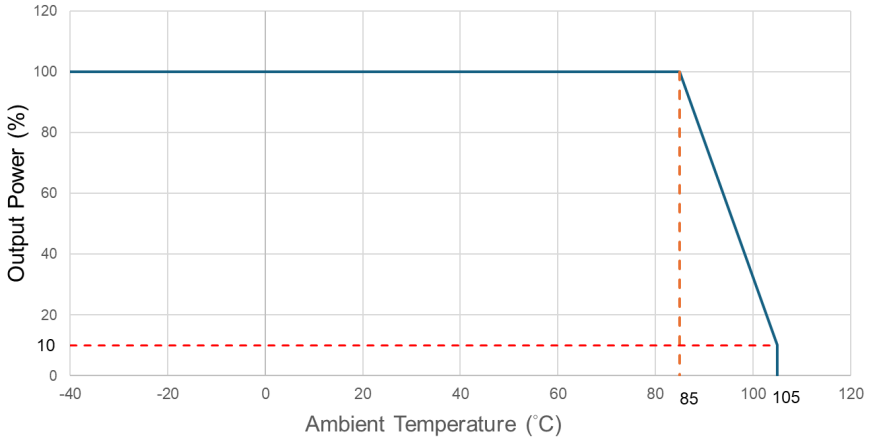
Line regulation	1% Vin step	±1.2% max.
Load regulation	10% to 100% load	
	3.3Vout models	15% typ.
	5Vout models	7% typ.
	9Vout models	5% typ.
	12Vout models	5% typ.
	15Vout models	4% typ.
	24Vout models	3% typ.
Ripple and noise	20MHz bandwidth and full load	75 mVp-p max.
Capacitive load	Nominal Vin and constant resistive load	See 'Models and Ratings' table
Short circuit protection		Continuous, Auto recovery
Temperature coefficient	Full Load	±0.02%/°C typ.
General Specifications		
Efficiency	Nominal Vin and full load	See 'Models and Ratings' table
Switching frequency	Nominal Vin and full load	250 kHz typ.
Isolation voltage	Input to output, 60 s	1500 VDC min.
Isolation resistance	500 VDC	1000 MΩ min.
Reliability, calculated MTBF	MIL-HDBK-217F, Ground Benign	2×10^6 h
Operating ambient temperature	With derating	-40°C to +105°C
Case temperature		+115°C max.
Storage temperature range		-55°C to +125°C
Relative humidity		95% RH max.
Cooling		Natural convection
Physical Specifications		
Case material		Plastic (UL 94 V-0)
Potting material		Epoxy (UL 94 V-0)
Dimensions		11.6 × 10.2 × 7.5 mm
Weight		2.2 g typ.

Characteristic Curves

Output Voltage Tolerance (Nominal Vin)



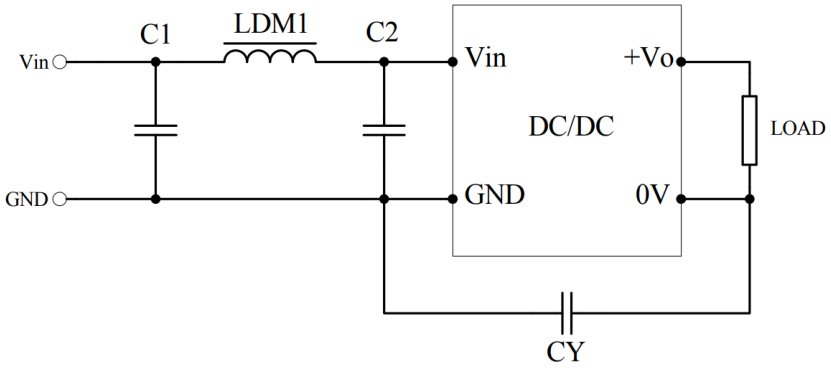
Power Derating Curve



Design and feature configurations

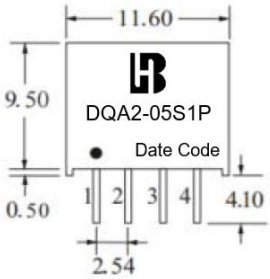
EMI Filter

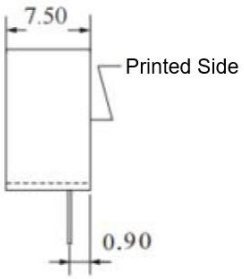
Input filter components are used to meet emissions requirements for the module. These components should be mounted as close as possible to the module; and all leads should be minimized to decrease EMI noise.



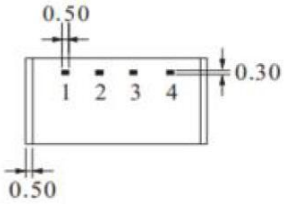
EN55032 Class B			
Models	C1, C2	LDM1	CY
DQA2P	4.7uF / 100V MLCC-1210	6.8μH	1000PF / 3KV MLCC-1808

Mechanical



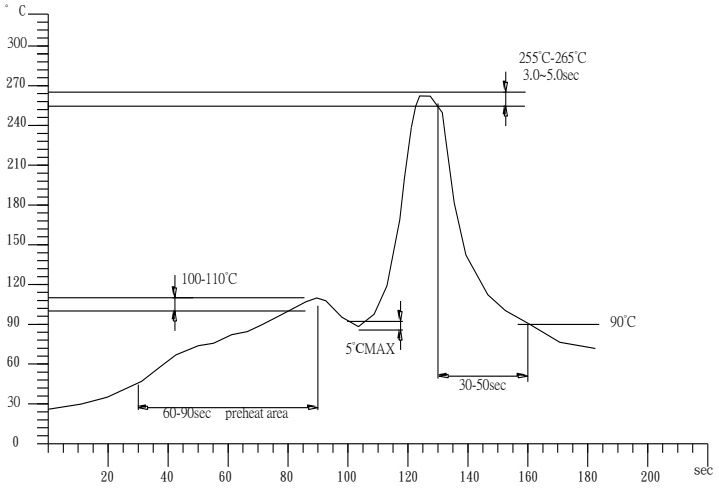


Pinout	
PIN	Function
1	-Vin
2	+Vin
3	-Vout
4	+Vout

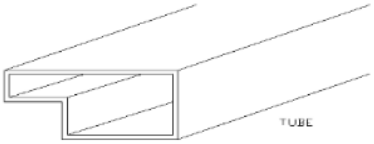


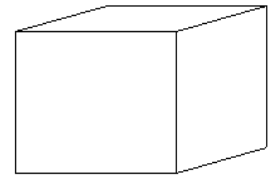
All dimensions in mm [inch]
Tolerances: ±0.5 [±0.02]
Pin dimension tolerances: ±0.10 [±0.004]

Wave Soldering Temperature Curve

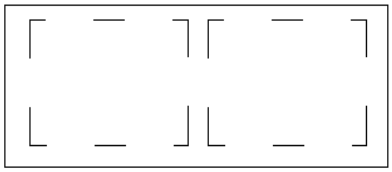


Carton Package





INNER CARTON:567*135*125



EXPORT CARTON:598*287*150

TUBE = 42PCS
INNER CARTON = 50 TUBE = 50*42 = 2100PCS
EXPORT CARTON = 2 INNER CARTON = 2*2100 = 4200PCS

For More Information:

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