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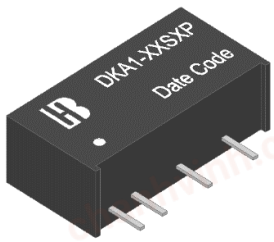
DKA1P

1W, Isolated DC-DC Converters



Features

- 7pin SIP 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		
DKA1-03S0P	2.97 - 3.63 3.3V nominal	3.3	300	8	410	74	2200
DKA1-03S1P		5	200	8	389	78	2200
DKA1-03D0P		±3.3	±150	8	410	74	1000 / 1000
DKA1-03D1P		±5	±100	8	370	80	1000 / 1000
DKA1-05S0P	4.5 - 5.5 5V nominal	3.3	300	8	256	78	2200
DKA1-05S1P		5	200	8	238	84	2200
DKA1-05SAP		9	110	8	238	84	1000
DKA1-05S2P		12	83	8	238	84	560
DKA1-05S3P		15	67	8	235	85	560
DKA1-05S5P		24	42	8	233	86	220
DKA1-05D0P		±3.3	±150	8	270	74	1000 / 1000
DKA1-05D1P		±5	±100	8	244	82	1000 / 1000
DKA1-05DAP		±9	±55	8	241	83	470 / 470
DKA1-05D2P		±12	±42	8	241	83	220 / 220
DKA1-05D3P		±15	±33	8	241	83	220 / 220
DKA1-05D5P		±24	±21	8	235	85	100 / 100
DKA1-09S1P	8.1 - 9.9 9V nominal	5	200	8	136	82	2200

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1W, Isolated DC-DC Converters

Pulse a YAGEO company

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		
DKA1-12S0P	10.8 - 13.2 12V nominal	3.3	300	8	107	78	2200
DKA1-12S1P		5	200	8	99	84	2200
DKA1-12SAP		9	110	8	97	86	1000
DKA1-12S2P		12	83	8	97	86	560
DKA1-12S3P		15	67	8	97	86	560
DKA1-12S5P		24	42	8	96	87	220
DKA1-12D0P		±3.3	±150	8	113	74	1000 / 1000
DKA1-12D1P		±5	±100	8	102	82	1000 / 1000
DKA1-12DAP		±9	±55	8	100	83	470 / 470
DKA1-12D2P		±12	±42	8	100	83	220 / 220
DKA1-12D3P		±15	±33	8	100	83	220 / 220
DKA1-15S0P	13.5 - 16.5 15V nominal	3.3	300	8	85	78	2200
DKA1-15S1P		5	200	8	79	84	2200
DKA1-15SAP		9	110	8	78	86	1000
DKA1-15S2P		12	83	8	78	86	560
DKA1-15S2PR		12	83	8	78	86	560
DKA1-15S3P		15	67	8	78	86	560
DKA1-15S5P		24	42	8	77	87	220
DKA1-15D0P		±3.3	±150	8	90	74	1000 / 1000
DKA1-15D1P		±5	±100	8	81	82	1000 / 1000
DKA1-15DAP		±9	±55	8	80	83	470 / 470
DKA1-15D2P		±12	±42	8	80	83	220 / 220
DKA1-15D3P		±15	±33	8	80	83	220 / 220
DKA1-24S0P	21.6 - 26.4 24V nominal	3.3	300	8	53	78	2200
DKA1-24S1P		5	200	8	50	84	2200
DKA1-24SAP		9	110	8	48	86	1000
DKA1-24S2P		12	83	8	48	86	560
DKA1-24S3P		15	67	8	48	86	560
DKA1-24S5P		24	42	8	48	87	220
DKA1-24D0P		±3.3	±150	8	56	74	1000 / 1000
DKA1-24D1P		±5	±100	8	51	82	1000 / 1000
DKA1-24DAP		±9	±55	8	50	83	470 / 470
DKA1-24D2P		±12	±42	8	50	83	220 / 220
DKA1-24D3P		±15	±33	8	50	83	220 / 220

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Input Specifications		
Surge voltage	1 s max.	
	3.3Vin models	10VDC max.
	5Vin models	10VDC max.
	9Vin models	12VDC max.
	12Vin models	15VDC max.
	15Vin models	20VDC max.
	24Vin models	30VDC max.
Input filter		Capacitor
Output Specifications		
Output power		1 Watt max.
Voltage accuracy	Nominal Vin and full load	See 'Output Voltage Tolerance'
Voltage balance	Dual output models only	±1% max.
Minimum load		10% load of full load
Line regulation	1% Vin step	±1.2% max.
Load regulation	10% to 100% load	
	3.3Vout and ±3.3Vout models	15% max.
	5Vout and ±5Vout models	10% max.
	9Vout and ±9Vout models	8% max.
	12Vout and ±12Vout models	6% max.
	15Vout and ±15Vout models	6% max.
	24Vout and ±24Vout models	5% max.
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.

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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.
Isolation capacitance		35 pF typ.
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)
Pin material		Copper alloy
Pin Foundation Plating		Nickel
Pin Surface Plating		Tin
Potting material		Epoxy (UL 94 V-0)
Dimensions		19.6 × 10.1 × 6.0 mm
Weight		2 g typ.

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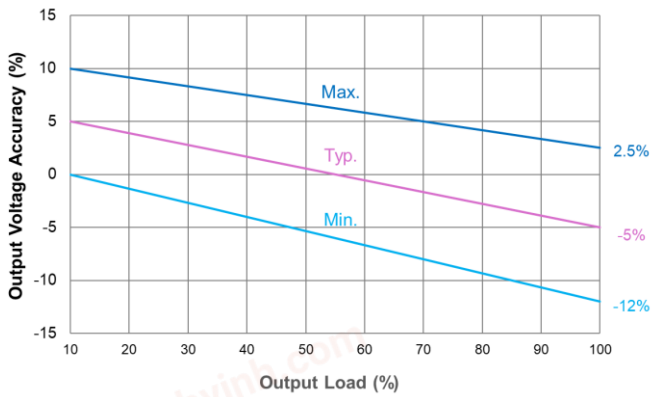
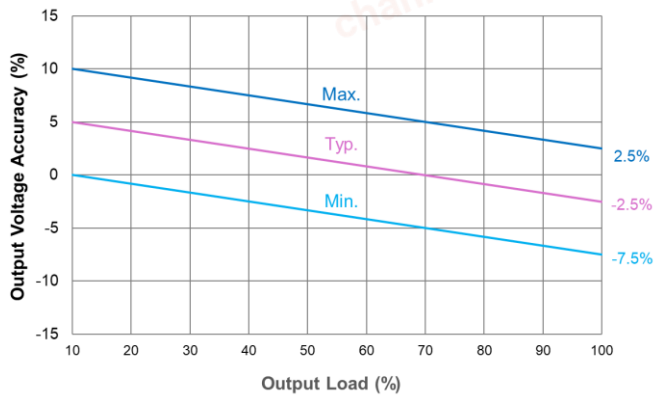
Characteristic Curves

Output Voltage Tolerance (Nominal Vin)

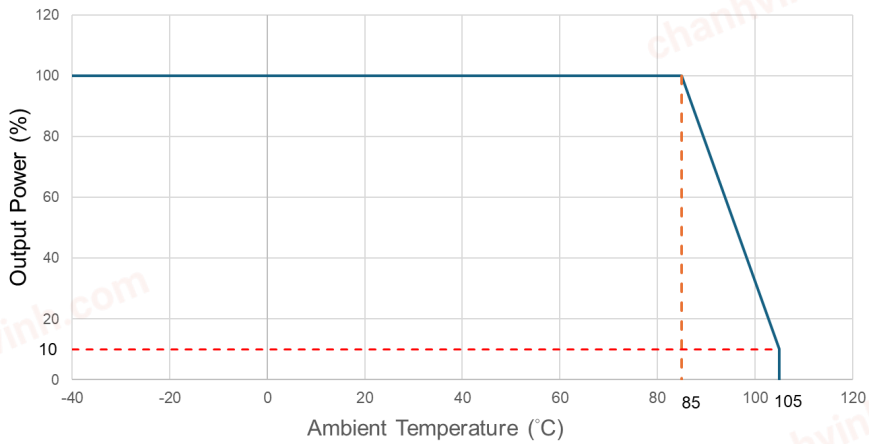
3.3Vout, 5Vout, ±3.3Vout and ±5Vout models



Other models



Power Derating Curve



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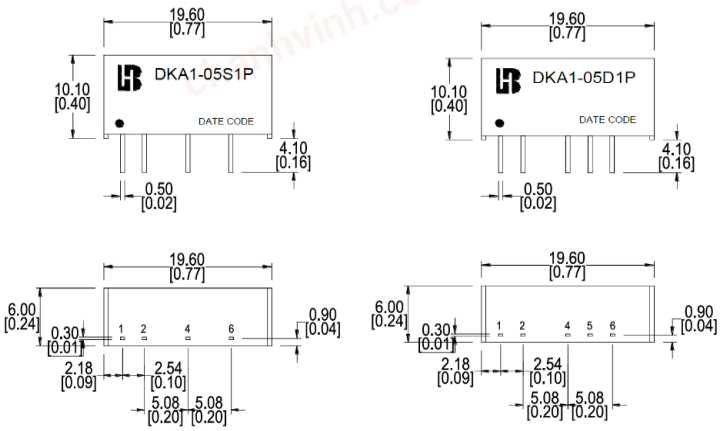
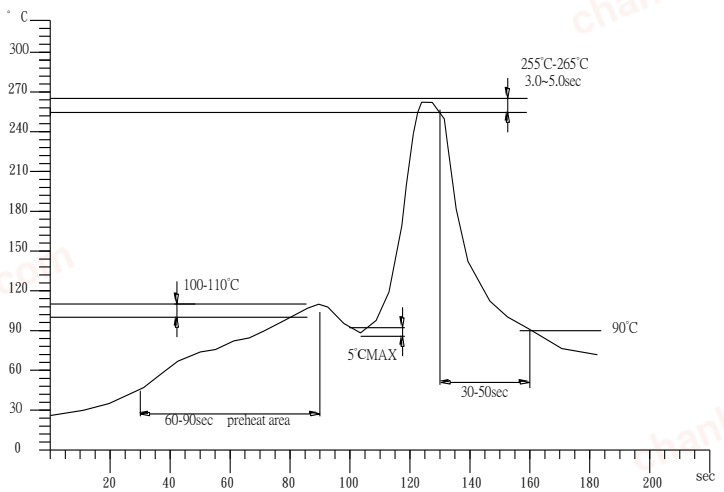
Mechanical



Pinout		
PIN	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
4	-Vout	-Vout
5	No Pin	Common
6	+Vout	+Vout
7	No Pin	No Pin

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

Wave Soldering Temperature Curve



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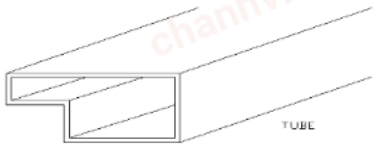
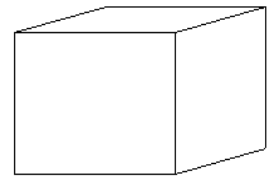
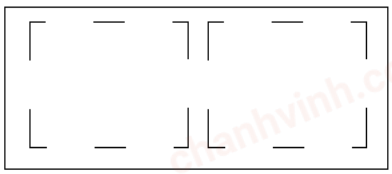
Carton Package







TUBE = 25PCS
INNER CARTON = 50 TUBE = 50*25 = 1250PCS
EXPORT CARTON = 2 INNER CARTON = 2*1250 = 2500PCS

For More Information:

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