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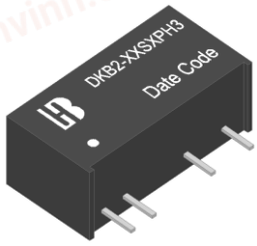
DKB2PH3 Series

2W, Isolated DC-DC Converters



Features

- 7pin SIP Package
- Input / Output Isolation: 3000VDC
- High Efficiency
- Lead Free Design, RoHS Compliant
- Operating Temperature: -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		
DKB2-05S0PH3	4.5 - 5.5 5V nominal	3.3	400	35	338	78	68
DKB2-05S1PH3		5	400	35	500	80	47
DKB2-05SAPH3		9	220	35	477	83	33
DKB2-05S2PH3		12	166	35	475	84	22
DKB2-05S3PH3		15	133	35	475	84	22
DKB2-05S5PH3		24	83	35	475	84	10
DKB2-05SLPH3		25	80	35	475	84	10
DKB2-05D0PH3		±3.3	±200	35	338	78	33 / 33
DKB2-05D1PH3		±5	±200	35	500	80	22 / 22
DKB2-05DAPH3		±9	±110	35	477	83	10 / 10
DKB2-05D2PH3		±12	±83	35	475	84	10 / 10
DKB2-05D3PH3		±15	±66	35	475	84	10 / 10
DKB2-05D5PH3		±24	±42	35	475	84	4.7 / 4.7

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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		
DKB2-12S0PH3	10.8 - 13.2 12V nominal	3.3	400	15	143	77	68
DKB2-12S1PH3		5	400	15	208	80	47
DKB2-12SAPH3		9	220	15	199	83	33
DKB2-12S2PH3		12	166	15	198	84	22
DKB2-12S3PH3		15	133	15	198	84	22
DKB2-12S5PH3		24	83	15	198	84	10
DKB2-12D0PH3		±3.3	±200	15	143	77	33 / 33
DKB2-12D1PH3		±5	±200	15	208	80	22 / 22
DKB2-12DAPH3		±9	±110	15	199	83	10 / 10
DKB2-12D2PH3		±12	±83	15	198	84	10 / 10
DKB2-12D3PH3		±15	±66	15	198	84	10 / 10
DKB2-15S0PH3	13.5 - 16.5 15V nominal	3.3	400	12	114	77	68
DKB2-15S1PH3		5	400	12	167	80	47
DKB2-15SAPH3		9	220	12	159	83	33
DKB2-15S2PH3		12	166	12	158	84	22
DKB2-15S3PH3		15	133	12	158	84	22
DKB2-15S5PH3		24	83	12	158	84	10
DKB2-15D0PH3		±3.3	±200	12	114	77	33 / 33
DKB2-15D1PH3		±5	±200	12	167	80	22 / 22
DKB2-15DAPH3		±9	±110	12	159	83	10 / 10
DKB2-15D2PH3		±12	±83	12	158	84	10 / 10
DKB2-15D3PH3		±15	±66	12	158	84	10 / 10
DKB2-24S0PH3	21.6 - 26.4 24V nominal	3.3	400	8	71	77	68
DKB2-24S1PH3		5	400	8	104	80	47
DKB2-24SAPH3		9	220	8	99	83	33
DKB2-24S2PH3		12	166	8	99	84	22
DKB2-24S3PH3		15	133	8	99	84	22
DKB2-24S5PH3		24	83	8	99	84	10
DKB2-24D0PH3		±3.3	±200	8	71	77	33 / 33
DKB2-24D1PH3		±5	±200	8	104	80	22 / 22
DKB2-24DAPH3		±9	±110	8	99	83	10 / 10
DKB2-24D2PH3		±12	±83	8	99	84	10 / 10
DKB2-24D3PH3		±15	±66	8	99	84	10 / 10

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Input Specifications		
Input voltage		See Models and Ratings table
Input filter		Capacitor
Output Specifications		
Output power		2 Watts max.
Voltage accuracy	Nominal Vin and full load	
	3.3V Output	3.135 - 3.399 VDC
	5V Output	4.75 - 5.15 VDC
	9V Output	8.73 - 9.18 VDC
	12V Output	11.64 - 12.24 VDC
	15V Output	14.55 - 15.30 VDC
	24V Output	23.52 - 24.36 VDC
	25V Output	24.50 - 25.37 VDC
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	13% max.
	9Vout and ±9Vout models	9% max.
	12Vout and ±12Vout models	8% max.
	15Vout and ±15Vout models	7% max.
	24Vout and ±24Vout models	6% max.
	25Vout model	6% max.
Ripple and noise	20MHz bandwidth and full load	150 mVp-p max.
Capacitive load	Nominal Vin and constant resistive load	See Models and Ratings table
Short circuit protection	24Vin models	3 s max.
	Other models	Continuous, Automatic recovery
Temperature coefficient	Full Load	±0.03%/°C typ.
General Specifications		
Efficiency	Nominal Vin and full load	See Models and Ratings table
Switching frequency	Nominal Vin and full load	150 kHz typ. 300 kHz max.
Isolation voltage	Input to output, 60 s	3000 VDC min.
Isolation resistance	500 VDC	1000 MΩ min.
Isolation capacitance		30 pF typ.

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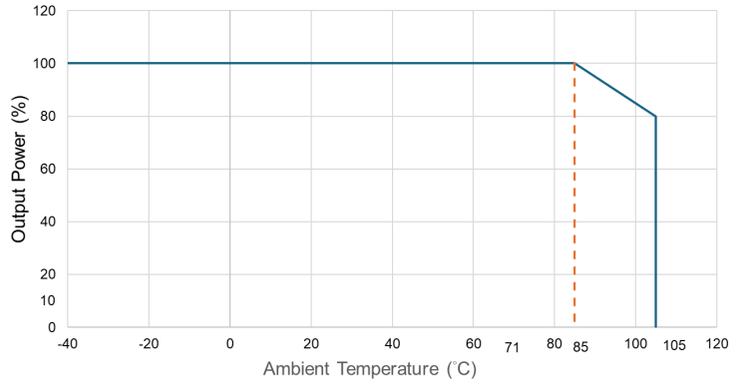
Reliability, calculated MTBF	MIL-HDBK-217F, Ground Benign	2×10^6 h
Operating ambient temperature	With derating	-40°C to +105°C
Case temperature		+125°C max.
Storage temperature range		-55°C to +125°C
Relative humidity		95% RH max.
Cooling		Natural convection
Physical Specifications		
Case material		Plastic (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 × 7.0 mm
Weight		2.5 g typ.

Characteristic Curves

Power Derating Curve



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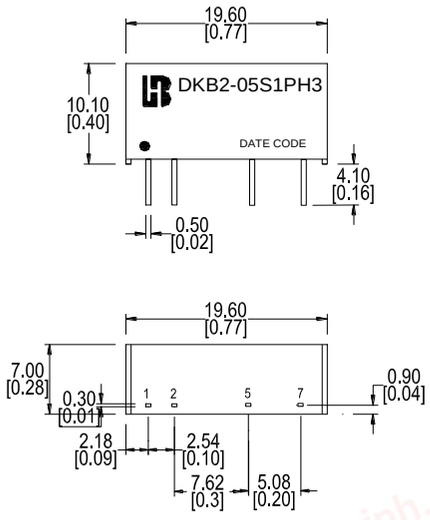
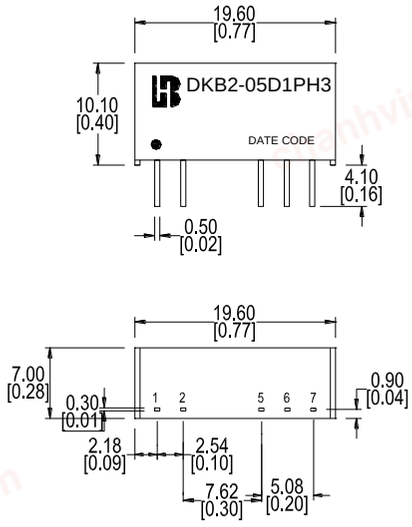
Mechanical

Single Output



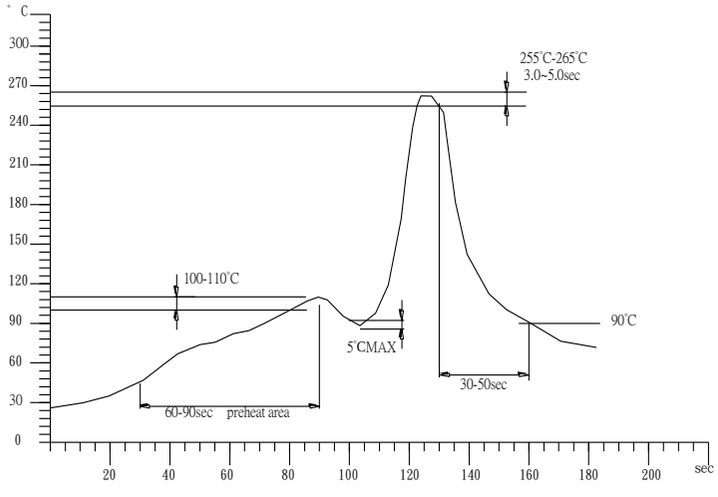
Dual Output



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

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

Wave Soldering Temperature Curve



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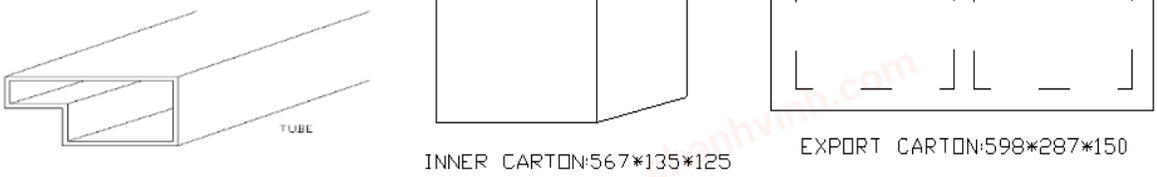
Carton Package



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

For More Information:

Americas-prodinfonetworkamericas@pulseelectronics.com | Europe-comms-Apps-Europe@pulseelectronics.com | Asia-prodinfonetworkapac@pulseelectronics.com

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