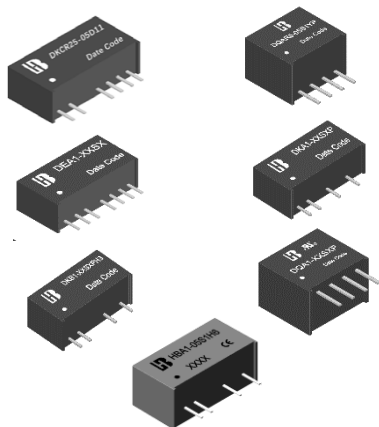


DC-DC Converters (1.5kV, 3kV and 6kV Isolation) 0.25W to 1W SIP Pulse

DEA1/DHA1/DKA1/DKB1/DKCR/DQA1/DQAR/HBA1- series

a YAGEO company



- Ⓢ Input Voltage Range: 3.3V, 5V, 12V, 15V and 24V +/-10%
- Ⓢ Output Voltage Range: 3.3V to 24V, Single and Dual (+/-Vout)
- Ⓢ Power Level: 0.25W to 1W
- Ⓢ Isolation: 1.5kVdc, 3kVdc and 6kVdc
- Ⓢ Efficiency : up to 81% , no heatsinks required
- Ⓢ Operating Temperature Range: -40°C to +85°C
- Ⓢ Additional Features:
 - Ⓢ IEC/EN 62368-1 Approved
 - Ⓢ Low Ripple and Noise,
 - Ⓢ Thermal Shut-Down

Electrical Specification @ 25°C (For DKCR25 1.5K Vdc Isolation Op:-40°C to +85°C)

Model Number	Input Voltage Range(V)	Output Voltage (Vo1/Vo2)	Output Current (mA) (Vo1/Vo2) Input	Output Current (mA) Typ.		Eff .(%) Typ.	Capacitive Load, max.(uF) (Vo1/Vo2)
			Full Load	No Load	Full Load		
DKCR25-05D11	4.5-5.5 Nominal:5	5/5	25/25	15	71	70	33

Electrical Specification @ 25°C (For DQAR25 1.5K Vdc Isolation Op:-40°C to +105°C)

Model Number	Input Voltage Range(V)	Output Voltage	Output Current (mA)	Output Current (mA) Typ.		Eff .(%) Typ.	Capacitive Load, max.(uF)
			Full Load	No Load	Full Load		
DQAR25-05S0	4.5-5.5	3.3	75	28	67	74	47
DQAR25-05S1	Nominal:5	5	50	28	66	75	47
DQAR25-12S2	10.8-13.2 Nominal:12	12	21	17	27.6	76	47
DQAR25-24S1	21.6-26.4 Nominal:24	5	50	8	13.9	75	10

Electrical Specification @ 25°C (For DQAR5 1.5K Vdc Isolation Op:-40°C to +105°C)

Model Number	Input Voltage Range(V)	Output Voltage	Output Current (mA)	Input Current (mA) Typ.		Eff .(%) Typ.	Capacitive Load, max. (uF)
		(V)	Full Load	No Load	Full Load		
DQAR5-05S1P	4.5-5.5 Nominal:5	5	100	20	130	77	22
DQAR5-05S1YP	4.5-5.5 Nominal:5	5	100	20	130	77	22

Electrical Specification @ 25°C (For DEA1 1.5K Vdc Isolation Op:-40°C to +85°C)

Model Number	Input Voltage Range(V)	Output Voltage	Output Current (mA)	Output voltage accuracy (V)	Eff .(%) Typ.	Capacitive Load, max. (uF)
		(V)	Full Load	No Load-Full Load		
DEA1-24S1	18-36 Nominal:24	5	200	4.900~5.100	80	820

Electrical Specification @ 25°C (For DHA1 1.5K Vdc Isolation Op: -40°C to +105°C)								
Model Number	Input Voltage Range(V)	Output Voltage(V)	Output Current (mA)		Input Current (mA)		Eff. (%)	Capacitive Load, max. (uF)
			Full. Load		No Load	Full Load		
DHA1-05S1	4.75-5.25 Nominal:5	5	200		25	286	70	47
DHA1-24S1	22.8-25.2 Nominal:24	5	200		7	58	72	47

Electrical Specification @ 25°C (For DKA1 1.5K Vdc Isolation Op: -40°C to +105°C)								
Model Number	Input Voltage Range(V)	Output Voltage(V)	Output Current (mA)		Input Current (mA) Typ.		Eff. (%) Typ.	Capacitive Load, max. (uF)
			Full. Load		No Load	Full Load		
DKA1-05S1P	4.5-5.5 Nominal:5	5	200		28	260	77	47
DKA1-05S2P		12	83		28	247	81	22
DKA1-05S3P		15	67		28	247	81	22
DKA1-05D1P		±5	±100		28	260	77	22/22
DKA1-05DAP		±9	±55		28	248	80	10/10
DKA1-05D2P		±12	±42		28	247	81	10/10
DKA1-05D3P		±15	±33		28	247	81	10/10
DKA1-12S1P	10.8-13.2 Nominal:12	5	200		17	107	78	47
DKA1-12D2P		±12	±42		17	104	80	10/10
DKA1-12D3P		±15	±33		17	104	80	10/10
DKA1-15S1P	13.5-16.5 Nominal:15	5	200		15	85	78	47
DKA1-24S5P	21.6-26.4 Nominal:24	24	42		8	51	81	10
DKA1-24D2P		±12	±42		8	51	81	10/10
DKA1-24D3P		±15	±33		8	51	81	10/10

Electrical Specification @ 25°C (For DKB1 3K Vdc Isolation Op: -40°C to +105°C)								
Model Number	Input Voltage Range(V)	Output Voltage(V)	Output Current (mA)		Input Current (mA) Typ.		Eff. (%) Typ.	Capacitive Load, max. (uF)
			Full. Load		No Load	Full Load		
DKB1-05S1H3	4.5-5.5 Nominal:5	5	200		28	260	77	47
DKB1-05D2H3		±12	±42		28	247	81	10/10
DKB1-12S2H3	10.8-13.2 Nominal:12	12	83		17	107	78	22
DKB1-12D1H3		±5	±100		17	107	78	22/22
DKB1-05S0PH3	4.5-5.5 Nominal:5	3.3	300		28	264	75	68
DKB1-05S1PH3		5	200		28	260	77	47
DKB1-05D2PH3		±12	±42		28	247	81	10/10
DKB1-12S2PH3	10.8-13.2 Nominal:12	12	83		17	104	80	22
DKB1-24S2PH3	21.6-26.4 Nominal:24	12	83		8	51	81	22



Electrical Specification @ 25°C (For DQA1 1.5K Vdc Isolation Op:-40°C to +105°C)								
Model Number	Input Voltage Range(V)	Output Voltage(V)	Output Current (mA)		Input Current (mA)		Eff. (%)	Capacitive Load, max. (uF)
			Full. Load	No Load	Full Load			
DQA1-03S0P	2.97-3.63 Nominal:3.3	3.3	300	35	405	74	68	
DQA1-03S1P		5	200	35	404	75	47	
DQA1-03S5P		24	42	35	382	80	10	
DQA1-05S0P	4.5-5.5 Nominal:5	3.3	300	28	264	75	68	
DQA1-05S1P		5	200	28	260	77	47	
DQA1-05SAP		9	110	28	248	80	33	
DQA1-05S2P		12	83	28	246	81	22	
DQA1-05S3P		15	67	28	246	81	22	
DQA1-05S5P		24	42	28	246	81	10	
DQA1-12S1P	10.8-13.2 Nominal:12	5	200	17	107	78	47	
DQA1-12S2P		12	83	17	104	80	22	
DQA1-12S5P		24	42	17	105	80	10	
DQA1-15S1P	13.5-16.5 Nominal:15	5	200	15	85	78	47	
DQA1-24S1P	21.6-26.4 Nominal:24	5	200	8	53	79	47	
DQA1-24S2P		12	83	8	51	81	22	
DQA1-24S3P		15	67	8	51	81	22	
DQA1-24S5P		24	42	8	51	78	22	

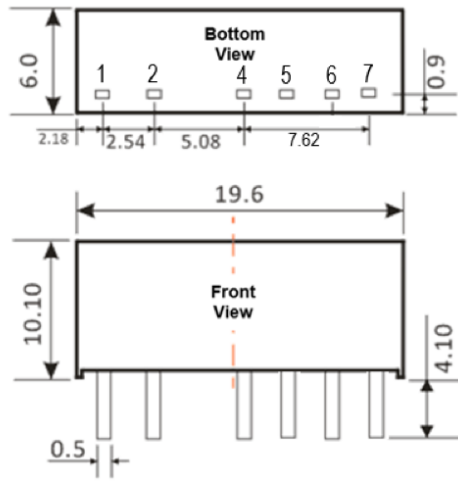
Electrical Specification @ 25°C (For HBA1 6K Vdc Isolation Op:-40°C to +85°C)							
Model Number	Input Voltage Range(V)	Output Voltage (V)	Output Current (mA)	Input Current (mA)		Eff. (%)	Capacitive Load, max. (uF)
			Full Load	No Load	Full Load		
HBA1-05S1H6	4.5 ~ 5.5 Nominal: 5	5	200	55	271	78	2200
HBA1-05D1H6		±5	±100	55	271	78	±1000
HBA1-24S1H6	21.6 ~ 26.4 Nominal: 24	5	200	20	57	78	2200

Process and Materials

- Storage Temperature: -55°C to +125°C
- Compliance to J-STD:
 - A. J-STD-002: Solderability of Dipping at 255-260°C
 - B. J-STD-020: Moisture Sensitive Level 1
- All parts are packaged in tubes - see pages 7 and 8 for details
- For full electrical characteristics, curves and applications, please refer to the detailed specification sheets available on request
- Lead Frame: Cooper Alloy
 - Underplated: Half Hard Ductile Nickel 40-118" (1.0 -3.0um)
 - Over plated: 100% Tin electro-deposited per 240-400u"Min(6-10um)
 - Finish: Matte finish 100% Tin solder

Mechanical

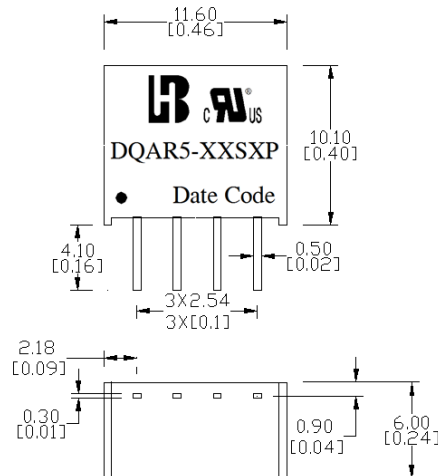
DKCR25



DKCR25-05D11	
PIN	Single
1	+Vin
2	-Vin
4	-Vout
5	+Vout
6	-Vout
7	+Vout

Unit: mm
Pin Section tolerances +/-0.1
General tolerances +/-0.5

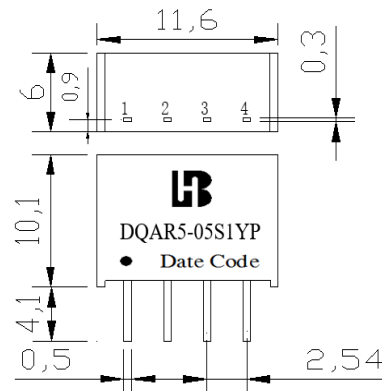
DQAR5P/DQAR25



DQAR5/25-xxSxP	
PIN	Single
1	-Vin
2	+Vin
3	-Vout
4	+Vout

Unit: mm (inch for reference only)
Pin Section tolerances +/-0.1
General tolerances +/-0.5

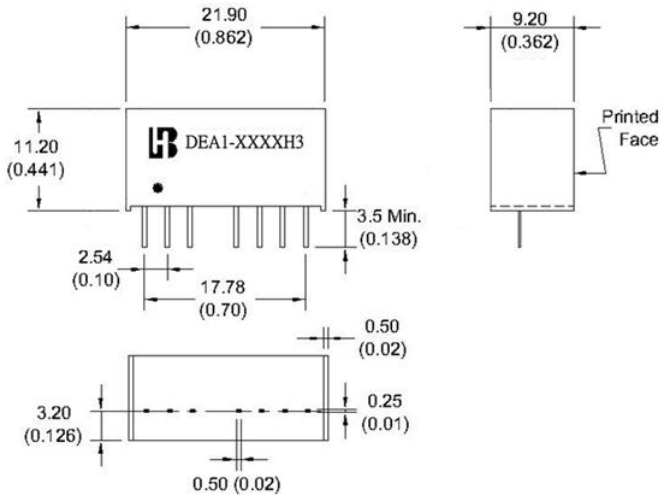
DQAR5YP



DQAR25-xxSxYP	
PIN	Single
1	+Vin
2	-Vin
3	-Vout
4	+Vout

Unit: mm
Pin Section tolerances +/-0.1
General tolerances +/-0.5

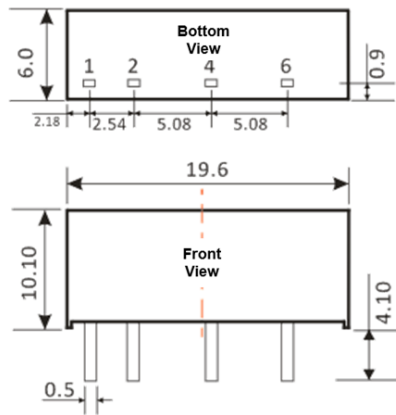
DEA1



DEA1xxxx		
PIN	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
3	CTRL	CTRL
4	No Pin	No Pin
5	NC	NC
6	+Vout	+Vout
7	-Vout	Common
8	CS	-Vout

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.25

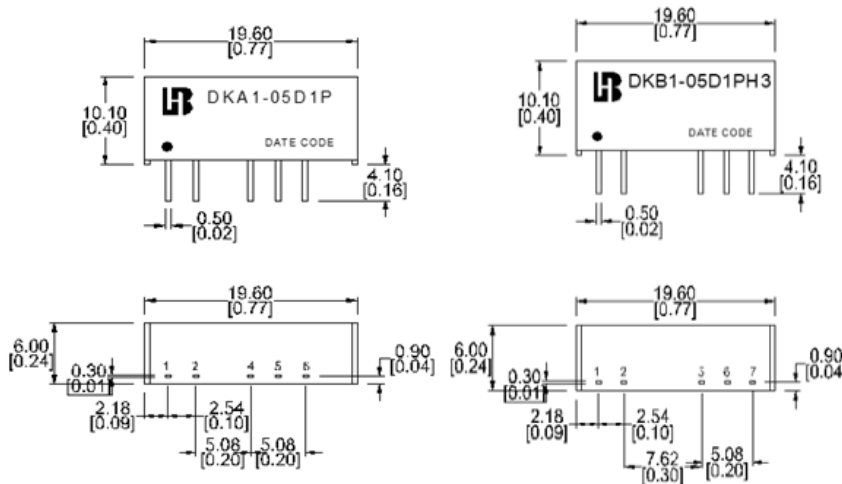
DHA1



DHA1	
PIN	Single
1	+Vin
2	-Vin
4	-Vout
6	+Vout

Unit: mm
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

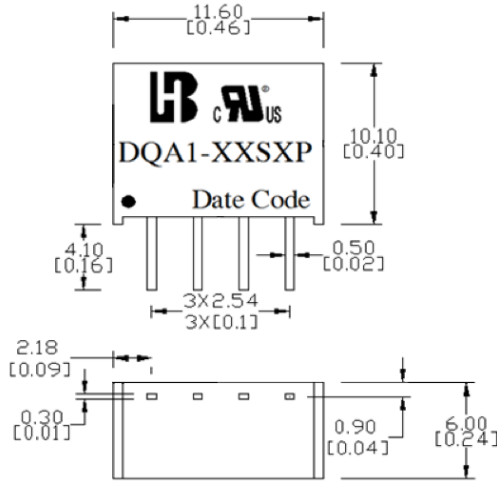
DKA1P/DKB1H3/PH3



PIN	DKA1-xxxxP		DKB1-xxxxH3/PH3	
	Single	Dual	Single	Dual
1	+Vin	+Vin	+Vin	+Vin
2	-Vin	-Vin	-Vin	-Vin
4	-Vout	-Vout	No Pin	No Pin
5	No Pin	Common	-Vout	-Vout
6	+Vout	+Vout	No Pin	Common
7	No Pin	No Pin	+Vout	+Vout

Unit: mm (inch for reference only)
 Pin Section tolerances +/-0.1
 General tolerances +/-0.5

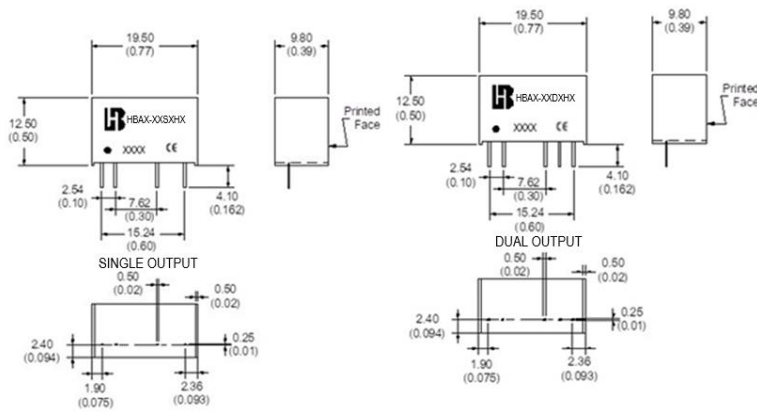
DQA1P



DQA1-xxSxP	
PIN	Single
1	+Vin
2	-Vin
3	-Vout
4	+Vout

Unit: mm (inch for reference only)
Pin Section tolerances +/-0.1
General tolerances +/-0.5

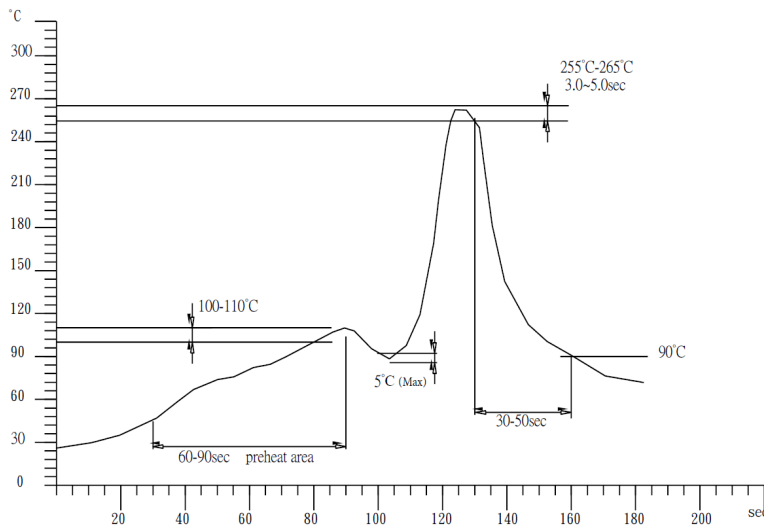
HBA1



HBA1-xxSxHX		
PIN	Single	Dual
1	+Vin	+Vin
2	-Vin	-Vin
5	-Vout	-Vout
6	No Pin	Common
7	+Vout	+Vout

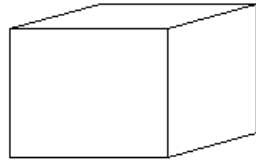
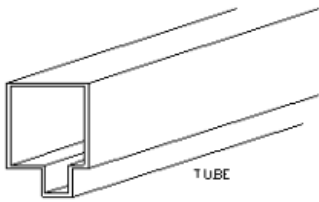
Unit: mm (inch for reference only)
Pin Section tolerances +/-0.1
General tolerances +/-0.5

Wave Soldering Temperature Curve

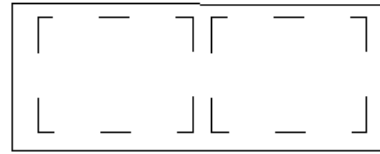


Carton Package

DEA1



INNER CARTON:567*135*125



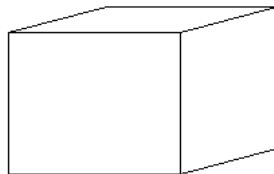
EXPORT CARTON:598*287*150

TUBE=22PCS

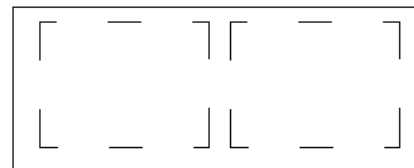
INNER CARTON=45 TUBE=45*22=990PCS

EXPORT CARTON=2 INNER CARTON=2*990=1980PCS

DKCR25/DHA1/DKA1P/DKB1H3/DKB1PH3



INNER CARTON:567*135*125



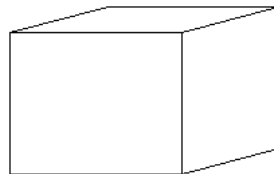
EXPORT CARTON:598*287*150

TUBE=25PCS

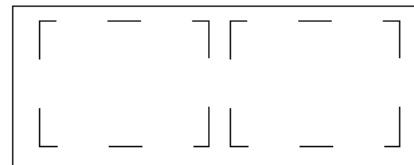
INNER CARTON=50 TUBE=50*25=1250PCS

EXPORT CARTON=2 INNER CARTON=2*1250=2500PCS

DQA1/ DQAR5/DQAR25



INNER CARTON:567*135*125



EXPORT CARTON:598*287*150

TUBE=42PCS

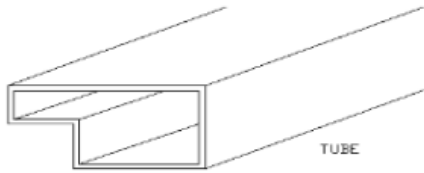
INNER CARTON=50 TUBE=50*42=2100PCS

EXPORT CARTON=2 INNER CARTON=2*2100=4200PCS

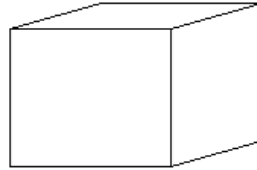
DC-DC Converters (1.5kV, 3kV and 6kV Isolation) 0.25W to 1W SIP

DEA1/DHA1/DKA1/DKB1/DKCR/DQA1/DQAR/HBA1- series

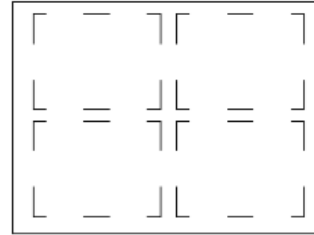
HBA1



TUBE



INNER CARTON: 388*158.5*115



EXPORT CARTON: 405*334*263

TUBE=15PCS

INNER CARTON=36 TUBE=36*15=540PCS

EXPORT CARTON=4 INNER CARTON=4*540=2160PCS

For More Information:

Americas - prodinfo_network_americas@yageo.com | Europe - prodinfo_network_emea@yageo.com | Asia - prodinfo_network_asia@yageo.com

Performance warranty of products offered on this data sheet is limited to the parameters specified. Data is subject to change without notice. Other brand and product names mentioned herein may be trademarks or registered trademarks of their respective owners. © Copyright, 2023. Pulse Electronics, Inc. All rights reserved.