

KQWS SERIES

40W WIDE INPUT RANGE

DANUBE

FEATURES

- 40W DIL PACKAGE
- INDUSTRY STANDARD PACKAGE
- 9-18V,18-36V,36-75V,9-36V,18-75V WIDE INPUT RANGE
- 100% BURNED IN
- HIGH EFFICIENCY
- UL 94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- 3 YEARS WARRANTY



OUTPUT SPECIFICATIONS

Voltage Setpoint Accuracy	+/-2% max.
Over Voltage Protection	Built-in
Temperature Coefficient	+/-0.03%/°C
Ripple & Noise(20MHz BW) ¹	100mVp-p max.
Line Regulation ²	+/-0.5% max.
Load Regulation ³	+/-0.5% max.
Minimum load	10% of Full Load
Short Circuit Protection	Continuous
Short Circuit Restart	Automatic
External Trim Adj. Range	+/-10%
Over Load Protection	150% typ.
Transient Response ⁵	500uS max.

INPUT SPECIFICATIONS

Input Voltage Range	2:1 or 4:1 Input Range
Input Filter	Pi Network
Protection	Fuse Recommended
Start up time(Nominal input)	10ms max.

GENERAL SPECIFICATIONS

Efficiency	90% typ.
Isolation Voltage (Input / Output / case)	1500 VDC min.
Isolation Voltage ⁴	1500 VDC min.
Isolation Resistance	10 ⁹ ohms min.
Isolation Capacitance	2500pF max.
Switching Frequency	250KHz typ.
Weight	50g typ.
Case Material	Six-Side Shielded Case
Case Size	50.8mm*50.8mm*11mm
Potting Material	Epoxy(UL94-V0)
Radiated Emissions	EN55032 Class A

ENVIRONMENTAL SPECIFICATIONS

Operating Temperature	
No Heat Sink	-40°C to +60°C
With Heat Sink	-40°C to +75°C
Case Temperature	+100°C max.
Storage Temperature	-55°C to +100°C
Humidity	95% max.
Cooling	Free-Air Convection

ALL SPECIFICATIONS TYPICAL AT NOMINAL LINE, FULL LOAD , AND 25°C UNLESS OTHERWISE NOTED.

¹ Measured with 1uF ceramic capacitor connect to the output pins.

² High Line to Low Line.

³ Load Regulation is for output load current change from 10% to 100%.

⁴ For 10 seconds.

⁵ 50% Step Load Change.

● **SELECTION GUIDE(1)**
2:1 33W~40W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁶ CURRENT(mA)		EFF (%) ⁷	CAPACITOR LOAD (Max)
				FULL LOAD	NO LOAD		
KQWS-1203.3(HS)	9-18	3.3	10000	3125	150	88	4700uF
KQWS-1205(HS)	9-18	5	8000	3663	150	91	4700uF
KQWS-1209(HS)	9-18	9	4444	3663	150	91	3300uF
KQWS-1212(HS)	9-18	12	3333	3703	150	90	1500uF
KQWS-1215(HS)	9-18	15	2667	3703	150	90	820uF
KQWS-2403.3(HS)	18-36	3.3	10000	1545	100	89	4700uF
KQWS-2405(HS)	18-36	5	8000	1785	100	93	4700uF
KQWS-2409(HS)	18-36	9	4444	1832	100	91	3300uF
KQWS-2412(HS)	18-36	12	3333	1832	100	91	1500uF
KQWS-2415(HS)	18-36	15	2667	1825	100	91	820uF
KQWS-4803.3(HS)	36-75	3.3	10000	764	40	90	4700uF
KQWS-4805(HS)	36-75	5	8000	906	40	92	4700uF
KQWS-4809(HS)	36-75	9	4444	916	40	91	3300uF
KQWS-4812(HS)	36-75	12	3333	920	40	91	1500uF
KQWS-4815(HS)	36-75	15	2667	920	40	91	820uF

Note: Other input to output voltages may be available. Please contact factory.

⁶ NOMINAL INPUT VOLTAGE.

⁷ NOMINAL INPUT VOLTAGE, FULL LOAD.

● SELECTION GUIDE(2) 4:1 33W~40W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁸ CURRENT(mA)		EFF (%) ⁹	CAPACITOR LOAD (Max)
				FULL LOAD	NO LOAD		
KQWS-1203.3THS	9-36	3.3	10000	3161	150	87	4700uF
KQWS-1205THS	9-36	5	8000	3745	150	89	4700uF
KQWS-1209THS	9-36	9	4444	3922	150	85	3300uF
KQWS-1212THS	9-36	12	3333	3788	150	88	950uF
KQWS-1215THS	9-36	15	2667	3830	150	87	820uF
KQWS-2403.3THS	18-75	3.3	10000	1580	100	87	4700uF
KQWS-2405THS	18-75	5	8000	1873	100	89	4700uF
KQWS-2409THS	18-75	9	4444	1937	100	86	3300uF
KQWS-2412THS	18-75	12	3333	1894	100	88	950uF
KQWS-2415THS	18-75	15	2667	1894	100	88	820uF

Note: Other input to output voltages may be available. Please contact factory.

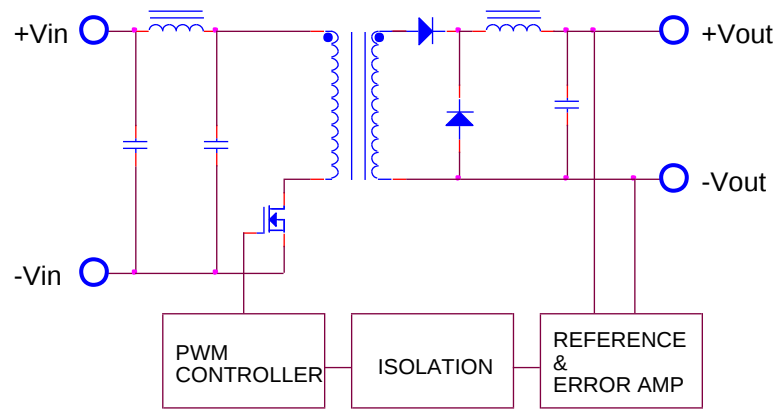
● PART NUMBERS STRUCTURE

Model Name	Difference
KQWv-x1x2THSJ	KQ=Series Name W=Wide Input Range v=Type of output voltage (S=single output) x1=Input voltage(9~18V ; 18~36V ; 36~75V ; 9~36V ; 18-75V) x2=Output voltage(03.3 ; 05 ; 09 ; 12 ; 15) T= Input Range 4:1 HS=With Heat Sink zzz= 0~9 , A~Z or blank for market purpose. J=Pin Length 3.5 mm

⁸ NOMINAL INPUT VOLTAGE.

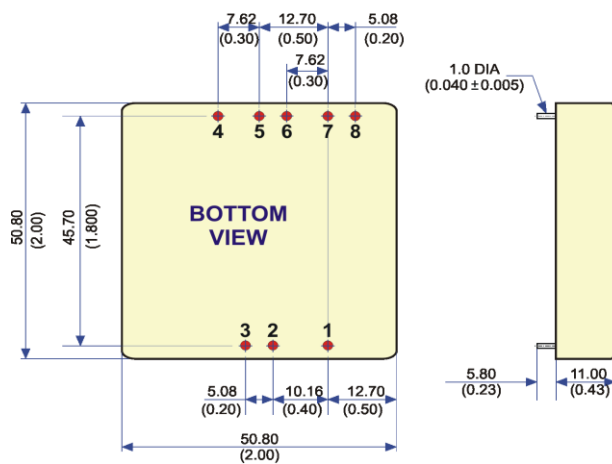
⁹ NOMINAL INPUT VOLTAGE,FULL LOAD.

● SIMPLIFIED SCHEMATIC



● MECHANICAL DIMENSIONS

No Heat-sink



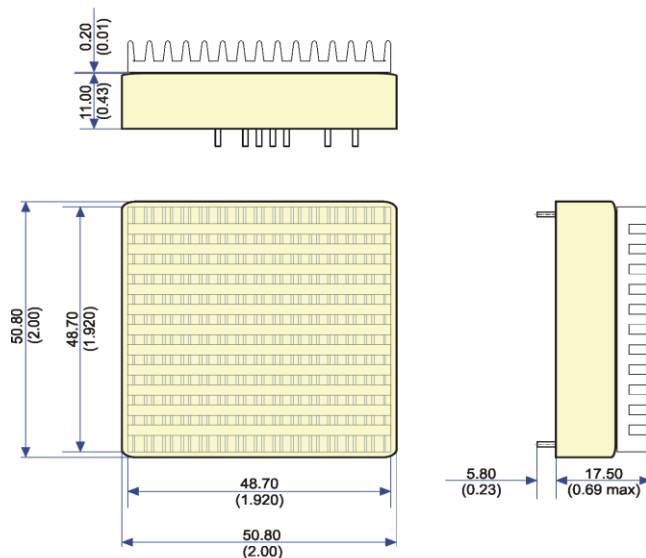
PIN	SINGLE
1	Remote On/Off
2	-Vin
3	+Vin
4	-Sense
5	+Sense
6	+Vout
7	-Vout
8	Trim

NOTE: Pin Size is Tolerance 1.0Φ ± 0.10mm

All Dimensions In mm(Inches)

Tolerance .X or .XX= ±0.5mm

With Heat-sink

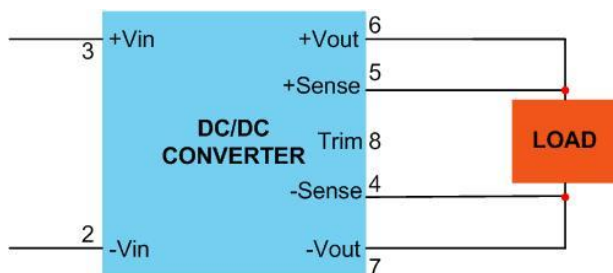


All dimensions are in mm [inches]

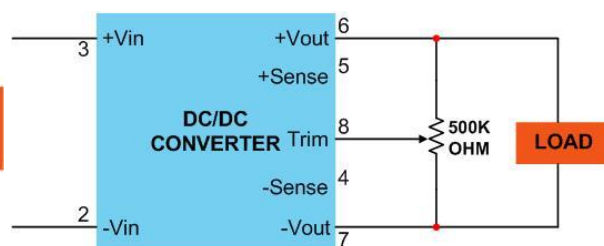
Remote On/Off Control			
Control Input		PIN1	Control Common
Control Voltage			PIN2
ON		>+2.5~48VDC or Open Circuit	Converter Shutdown Idle Current 10mA
OFF		<+0.5VDC or Jumper to PIN2	Logic Compatibility CMOS or Open Collector TTL

● TYPICAL APPLICATIONS

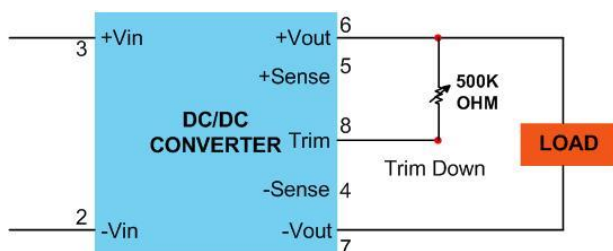
FIXED VOLTAGE OUTPUT



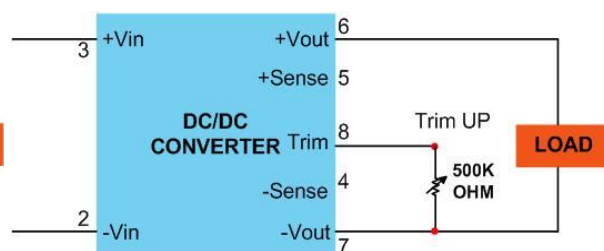
TRIM CONNECTIONS USING A TRIMPOT



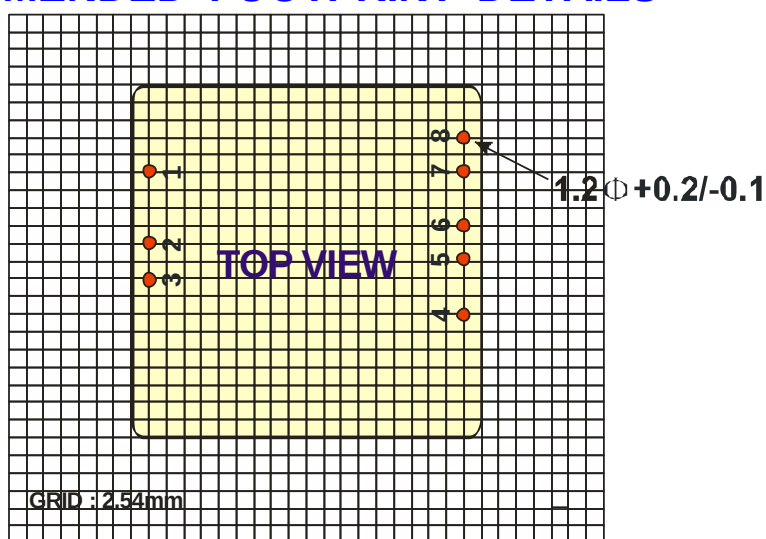
FIXED-VALUE TRIM DOWN RESISTOR



FIXED-VALUE TRIM UP RESISTOR



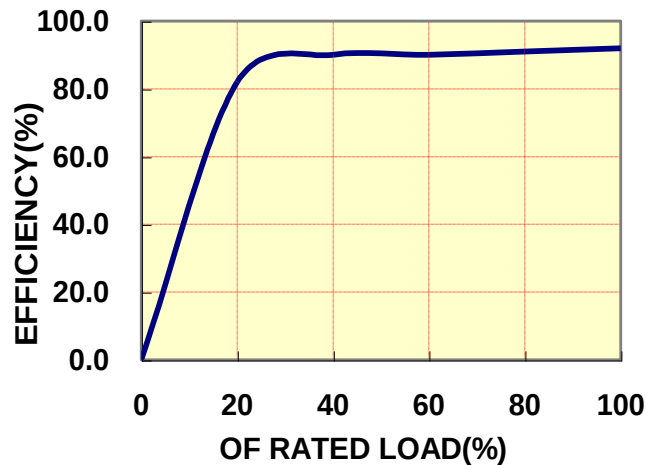
● RECOMMENDED FOOTPRINT DETAILS



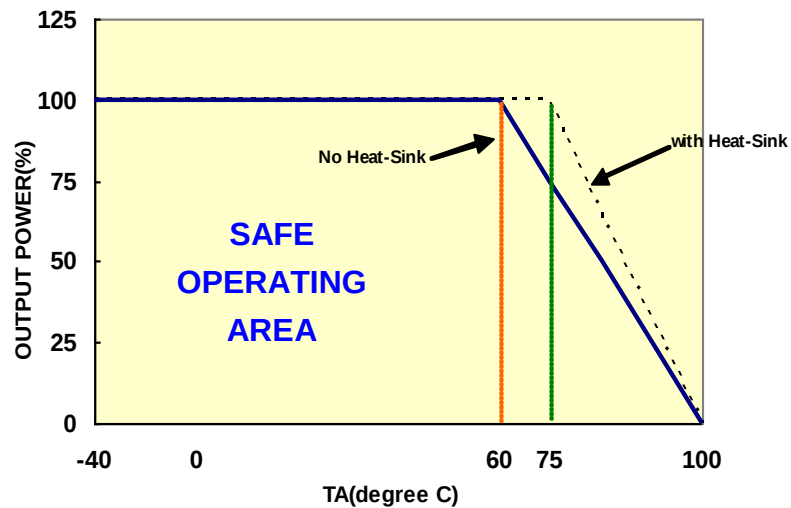
● TYPICAL PERFORMANCE CURVES

Specifications typical at $T_a=25^{\circ}\text{C}$, nominal input voltage, rated output current unless otherwise specified.

OUTPUT LOAD VS EFFICIENCY



TEMPERATURE DERATING



● INPUT FUSE SELECTION GUIDE

9-18V or 9-36V INPUT VOLTAGE(VDC)	18-36V or 18-75V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
10000mA Slow-Blow Type	6000mA Slow-Blow Type	3000mA Slow-Blow Type

The diagram shows a DC-DC converter block with four terminals: +Vin, -Vin, +Vout, and -Vout. An input fuse is connected in series with the +Vin line. The input is labeled 'INPUT' and the output is labeled 'OUTPUT'.

Note: Certain applications may require the installation of external fuse in front of the input.

KQWS SERIES APPLICATION NOTES:

EXTERNAL CAPACITANCE REQUIREMENTS:

External output capacitance is not required for operation, however it is recommended that 10uF MLCC and 0.1uF ceramic capacitance be selected for reduced system noise.

Additional output capacitance may be added for increased filtering, but should not exceed 1000uF.

Negative Outputs:

A negative output voltage may be obtained by connecting the +OUT to circuit ground and connecting –OUT as the negative output.

Remote ON/OFF:

The remote ON/OFF pin may be left floating if this function is not use. It is recommended to drive this pin with an open collector arrangement or a relay contact. When the ON/OFF pin is pulled low with respect to the –Vin , the converter is placed in a low power drain state.

Output TRIM:

The TRIM pin may be used to adjust the output +/-10% from the nominal setting .this function allows adjustment for voltage drops in the system wiring. If the TRIM function is not required the pin may be left floating.

FOR MORE INFORMATION CALL:

Danube Enterprise Co., Ltd.

Tel: 886-7-3755165

Fax: 886-7-3755330

E-mail: danube@ms10.hinet.net

Home Page

<http://www.danube.com.tw>
