

KHWD SERIES

60W WIDE INPUT RANGE

DANUBE

FEATURES

- 60W DIL PACKAGE
- INDUSTRY STANDARD PACKAGE
- 18V-36V, 36V-75V WIDE INPUT RANGE
- 100% BURN IN
- UL94V-0 PACKAGE MATERIAL
- CUSTOM SOLUTIONS AVAILABLE
- 3 YEARS WARRANTY



OUTPUT SPECIFICATIONS		INPUT SPECIFICATIONS	
Voltage Set-point Accuracy	+/-2% max.	Input Voltage Range	2:1 Input Range
Temperature Coefficient	+/-0.05%/°C	Input Filter	Pi Network
Ripple & Noise(20MHz BW) ¹	150mVp-p max.	Protection	Fuse Recommended
Line Regulation ²	+/-0.5% max.	OVLO(Over Voltage Lockout)	See Page 4
Load Regulation ³	+/-0.5% max.	UVLO(Under Voltage Lockout)	See Page 4
Minimum load	10% of Full Load	OVLO & UVLO Circuit Restart	Automatic
Short Circuit Protection	Continuous	Remote ON/OFF Control	Table 1
Short Circuit Restart	Automatic	GENERAL SPECIFICATIONS	
External Trim Adj. Range	+/-10%	Efficiency	91% typ.
Over Load Protection	150% typ.	Isolation Voltage ⁴	1500 VDC min.
Transient Response ⁵	500uS max.	Isolation Resistance	10 ⁹ ohms min.
ENVIRONMENTAL SPECIFICATIONS		Isolation Capacitance	2500pF max.
Operating Temperature	-40°C to +55°C	Switching Frequency	250KHz typ.
Case Temperature	+110°C max.	Weight	86g typ.
Storage Temperature	-55°C to +110°C	Case Material	Six-Side Shielded Case
Humidity	95% max.	Case Size	50.8mm*50.8mm*16mm
Cooling	Free-Air Convection	Potting Material	Epoxy(UL94V-0)
		Radiated Emissions	EN55032 Class A

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.

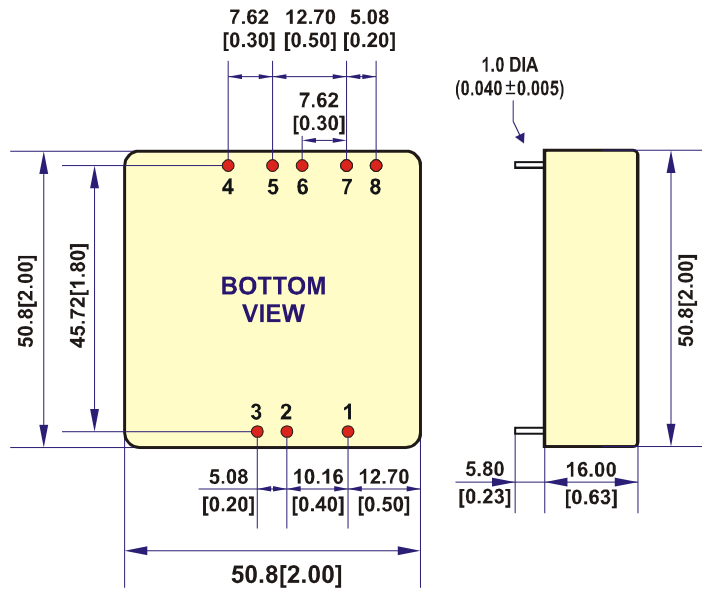
● SELECTION GUIDE 2:1 60W OUTPUT

MODEL NUMBER	INPUT VOLTAGE (VDC)	OUTPUT VOLTAGE (VDC)	OUTPUT CURRENT (mA)	INPUT ⁶ CURRENT(mA)		EFF (%) ⁷	CAPACITOR LOAD (Max.)
				FULL LOAD	NO LOAD		
KHWD-2412	18-36	+/-12	+/-2500	2777	30	90	+/-220uF
KHWD-2415	18-36	+/-15	+/-2000	2777	30	90	+/-100uF
KHWD-4812	36-75	+/-12	+/-2500	1373	20	91	+/-220uF
KHWD-4815	36-75	+/-15	+/-2000	1373	20	91	+/-100uF

⁶ NOMINAL INPUT VOLTAGE.

⁷ NOMINAL INPUT VOLTAGE, FULL LOAD.

● MECHANICAL DIMENSIONS & RECOMMENDED FOOTPRINT DETAILS



All dimensions are in millimeters[inches]

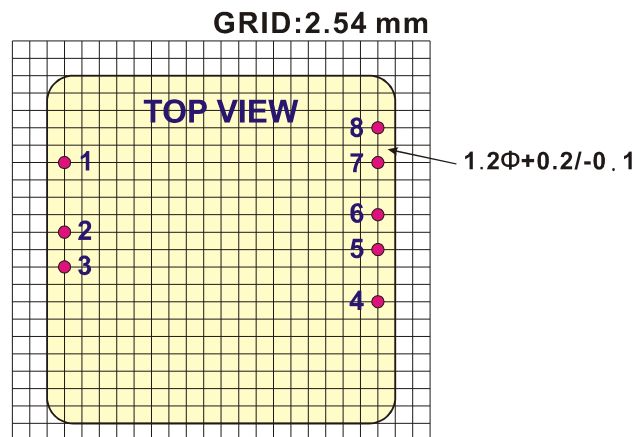
PIN	DUAL
1	Remote On/Off
2	-Vin
3	+Vin
4	+Vout
5	Common
6	Common
7	-Vout
8	Trim

NOTE:

All dimensions are in millimeters [inches]

Pin Size is Tolerance $1.0\Phi \pm 0.10\text{mm}$

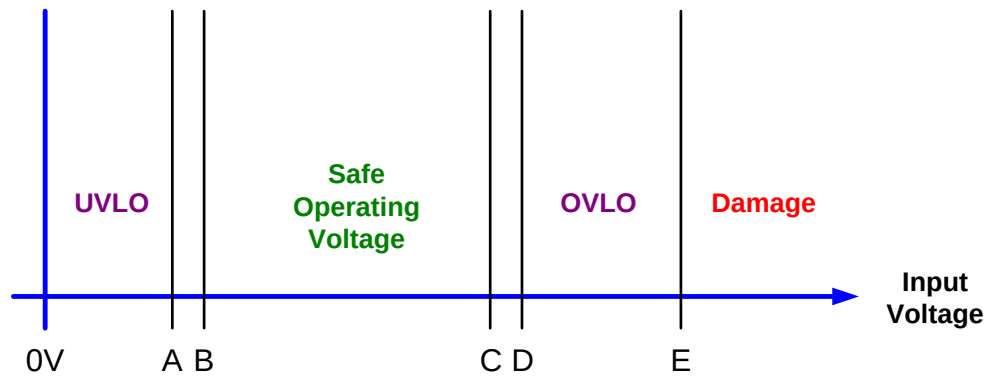
Tolerance .X or .XX= $\pm 0.8\text{mm}$



● Table1 (Remote On/Off Control)

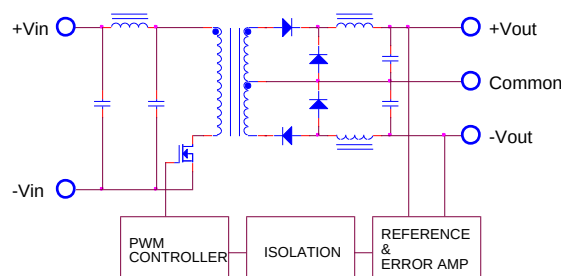
Remote On/Off Control			
Control Input		PIN1	Control Common
Control Voltage			PIN2
ON		>+2.5VDC or Open Circuit	Converter Shutdown Idle Current
OFF		<+0.9VDC or Jumper to PIN2	10mA
			CMOS or Open
			Logic Compatibility
			Collector TTL

● INPUT OPERATING VOLTAGE



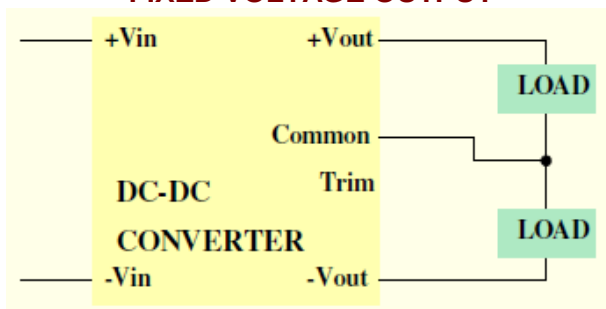
	A	B	C	D	E
KHWD-24**	16V typ.	18V	36V	40V typ.	50V
KHWD-48**	34V typ.	36V	75V	80V typ.	100V

● SIMPLIFIED SCHEMATIC

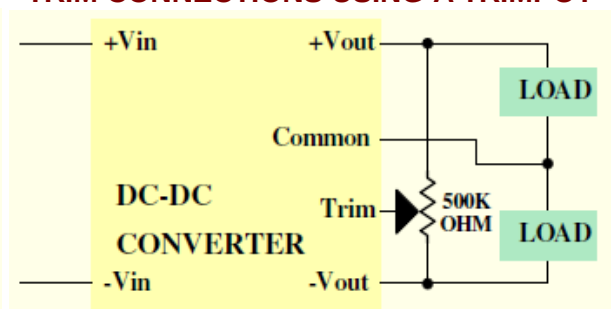


● TYPICAL APPLICATIONS

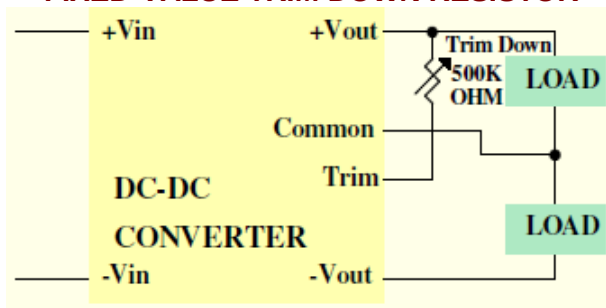
FIXED VOLTAGE OUTPUT



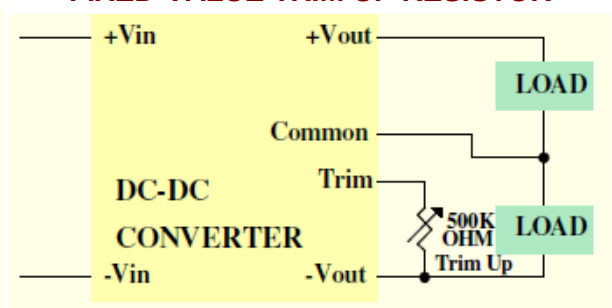
TRIM CONNECTIONS USING A TRIMPOT



FIXED-VALUE TRIM DOWN RESISTOR



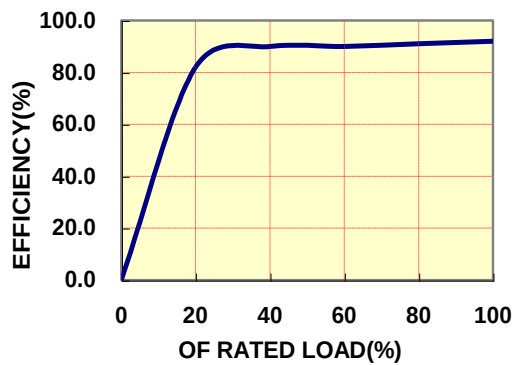
FIXED-VALUE TRIM UP RESISTOR



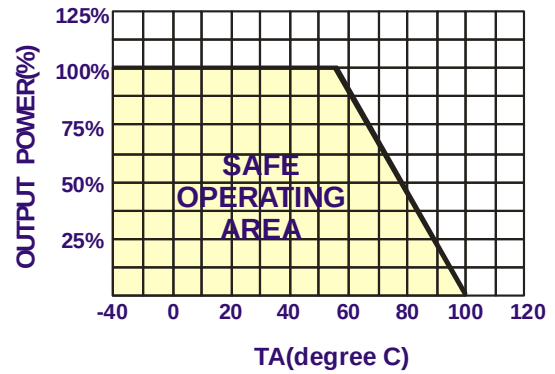
● TYPICAL PERFORMANCE CURVES

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

18-36V INPUT VOLTAGE(VDC)	36-75V INPUT VOLTAGE(VDC)
7000mA Slow-Blow Type	3000mA Slow-Blow Type
DC-DC CONVERTER	

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

KHWD 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.

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:

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Home Page

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