MICRODC
Professional Power Module

WRA-YHD-6W&WRB-YHD-6W Series

6W, WIDE INPUT, ISOLATED & REGULATED DUAL/SINGLE OUTPUT DC-DC CONVERTER

FEATURES

- ◆6 WATTS REGULATED OUTPUT POWER
- ◆OUTPUT CURRENT UP TO 1200mA MAX
- ◆STANDARD 31.8 X 20.3X 10.2mm
- ◆HIGH EFFICIENCY UP TO 80%
- ◆2:1 WIDE INPUT VOLTAGE RANGE
- ◆SWITCHING FREQUENCY (100KHz, MIN)
- ◆INCLUDE 3.3VDC OUTPUT
- ◆STANDARD 24 PIN DIP PACKAGE&SYMMETRIC PIN LAYOUT
- ◆DUAL SEPARATE OUTPUT
- ◆CE MARK MEETS 2006/95/EC, 93/68/EEC AND 2004/108/EC
- ◆UL60950-1, EN60950-1 AND IEC60950-1 LICENSED
- ◆ISO9001 CERTIFIED MANUFACTURING FACILITIES
- ◆COMPLIANT TO RoHS EU DIRECTIVE 2013/95/EC

MODEL SELECTION

WRA①24②15③Y④ HD⑤-6W(200)⑥

①Product Series ②Input Voltage
③Output Voltage ④2:1Wide Input Volage Range
⑤Symmetric pin layout DIP24 Package Style
⑥Rated Power(Output current)

APPLICATIONS

The WRA-YHD-6W&WRB-YHD-6W series offer 6 watts of output power from a package in an IC compatible 24pin DIP configuration without derating to 71ºC ambient temperature. WRA-YHD-6W & WRB-YHD-6W series have 2:1 wide input voltage of 4.5-9, 9-18, 18-36 and 36-75VDC.

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RoHS MICRODC Green Technology

CE REACH

OUTPUT SPECIFICATIONS

Output power				6 Watts, max.
Voltage accuracy	Full load and nominal Vin			±1%
Minimum load [5]				See table
Line regulation	LL to HL at Full Load			±0.2%
Load regulation	Min Load to Full Load	Single	3.3Vout	±0.3%
			Others	±0.2%
		Dual		±2%
Cross regulation (Dual)	Asymmetrical load 25% / 100% FL			± 5%
Ripple and noise	20MHz bandwidth			See table
Temperature coefficient				±0.02% / ºC, max.
Transient response recovery time	25% load step change			500μS
Over load protection	% of FL at nominal input			180%, typ.
Short circuit protection				Continuous, automatics recovery

GENERAL SPECIFICATIONS

Efficiency		See table
Isolation voltage	Input to Output	1600VDC, min.
Isolation resistance		10^9ohms, min.
Isolation capacitance		300pF, max.
Switching frequency		100KHz, min.
Approvals and standard		IEC60950-1, UL60950-1, EN60950-1
Case material		Non-conductive black plastic
Base material		Non-conductive black plastic
Potting material		Epoxy (UL94-V0)
Dimensions		1.25 X 0.80 X 0.40 Inch (31.8 X 20.3 X 10.2 mm)
Weight	DIP24	14g
MTBF [1]	MIL-HDBK-217F	3.018 x 10^6hrs

INPUT SPECIFICATIONS

Input voltage range*	5V nominal input		4.5 – 9VDC
	12V nominal input		9 – 18VDC
	24V nominal input		18 – 36VDC
	48V nominal input		36 – 75VDC
Input filter			Pi type
Input reflected ripple current	Nominal Vin and full load		120mAp-p
Start up time	Nominal Vin and constant resistive load	Power up	30mS, typ.

ENVIRONMENTAL SPECIFICATIONS

Operating ambient temperature	-25ºC ~ +71ºC(non derating)
Storage temperature range	-55ºC ~ +105ºC
Thermal shock	MIL-STD-810F
Vibration	MIL-STD-810F
Relative humidity	5% to 95% RH

EMC CHARACTERISTICS

EMI	EN55022			Class A
ESD	EN61000-4-2	Air	±8KV	Perf. Criteria A
		Contact	±6KV	
Radiated immunity	EN61000-4-3			10 V/m Perf. Criteria A
Fast transient[4]	EN61000-4-4			±2KV Perf. Criteria B
Surge[4]	EN61000-4-5			±1KV Perf. Criteria B
Conducted immunity	EN61000-4-6			10 Vr.m.s Perf. Criteria A

*Input voltage can't exceed this value,or will cause the permanent damage.

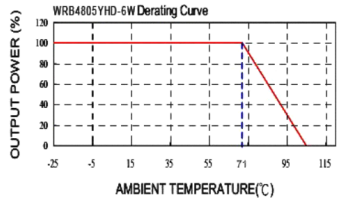
SELECTION GUIDE

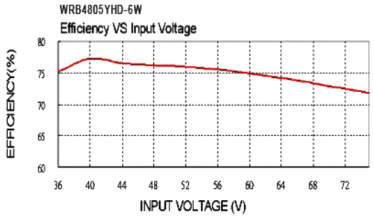
Model Number	Input Range	Output Voltage	Output Current		Efficiency[2] (%)	Capacitor[3] Load max
			Min. load	Full load		
WRB0503YHD-1200	4.5 – 9 VDC	3.3VDC	120mA	1200mA	69	2200μF
WRB0505YHD-6W	4.5 – 9 VDC	5VDC	120mA	1200mA	74	1000μF
WRB0512YHD-6W	4.5 – 9 VDC	12VDC	50mA	500mA	75	170μF
WRB0515YHD-6W	4.5 – 9 VDC	15VDC	40mA	400mA	75	110μF
WRA0505YHD-6W	4.5 – 9 VDC	±5VDC	±60mA	±600mA	73	±500μF
WRA0512YHD-6W	4.5 – 9 VDC	±12VDC	±25mA	±250mA	75	±96μF
WRA0515YHD-6W	4.5 – 9 VDC	±15VDC	±20mA	±200mA	75	±47μF
WRB1203YHD-1200	9 – 18 VDC	3.3VDC	120mA	1200mA	70	2200μF
WRB1205YHD-6W	9 – 18 VDC	5VDC	120mA	1200mA	75	1000μF
WRB1212YHD-6W	9 – 18 VDC	12VDC	50mA	500mA	79	170μF
WRB1215YHD-6W	9 – 18 VDC	15VDC	40mA	400mA	79	110μF
WRA1205YHD-6W	9 – 18 VDC	±5VDC	±60mA	±600mA	74	±500μF
WRA1212YHD-6W	9 – 18 VDC	±12VDC	±25mA	±250mA	79	±96μF
WRA1215YHD-6W	9 – 18 VDC	±15VDC	±20mA	±200mA	79	±47μF
WRB2403YHD-1200	18 – 36 VDC	3.3VDC	120mA	1200mA	70	2200μF
WRB2405YHD-6W	18 – 36 VDC	5VDC	120mA	1200mA	76	1000μF
WRB2412YHD-6W	18 – 36 VDC	12VDC	50mA	500mA	80	170μF
WRB2415YHD-6W	18 – 36 VDC	15VDC	40mA	400mA	80	110μF
WRA2405YHD-6W	18 – 36 VDC	±5VDC	±60mA	±600mA	76	±500μF
WRA2412YHD-6W	18 – 36 VDC	±12VDC	±25mA	±250mA	79	±96μF
WRA2415YHD-6W	18 – 36 VDC	±15VDC	±20mA	±200mA	80	±47μF
WRB4803YHD-1200	36 – 75 VDC	3.3VDC	120mA	1200mA	72	2200μF
WRB4805YHD-6W	36 – 75 VDC	5VDC	120mA	1200mA	75	1000μF
WRB4812YHD-6W	36 – 75 VDC	12VDC	50mA	500mA	79	170μF
WRB4815YHD-6W	36 – 75 VDC	15VDC	40mA	400mA	79	110μF
WRA4805YHD-6W	36 – 75 VDC	±5VDC	±60mA	±600mA	77	±500μF
WRA4812YHD-6W	36 – 75 VDC	±12VDC	±25mA	±250mA	79	±96μF
WRA4815YHD-6W	36 – 75 VDC	±15VDC	±20mA	±200mA	79	±47μF

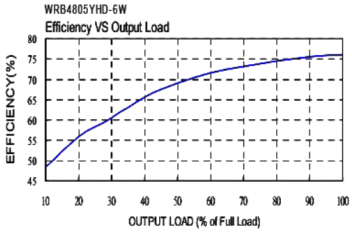
Note

1. MIL-HDBK-217F Notice2 @Ta=25 ºC, Full load(Ground, Benign, controlled environment).
2. Typical value at nominal input voltage and full load.
3. Test by minimum Vin and constant resistive load.
4. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5.
5. The output requires a minimum loading on the output to maintain specified regulation. Operation under no-load condition will not damage these devices, however they may not meet all listed specification.

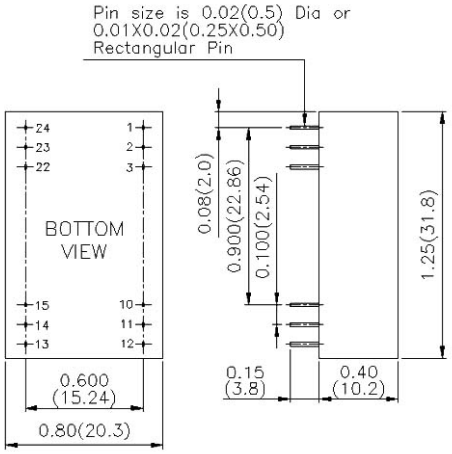
DERATING GRAPH







MECHANICAL DIMENSIONS



DIP24 PIN CONNECTION

PIN	SINGLE	PIN	DUAL
1、24	+ INPUT	1、24	+ INPUT
2、23	NC	2、23	- OUTPUT
3、22	NC	3、22	COMMON
10、15	-OUTPUT	10、15	COMMON
11、14	+OUTPUT	11、14	+OUTPUT
12、13	- INPUT	12、13	- INPUT

MICRODC Professional Power Module

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RoHS COMPLIANT INFORMATION

This series is compatible with RoHS soldering systems with a peak wave solder temperature of 300° C for 10 seconds.
The pin termination finish on the SIP package type is Tin Plate, Hot Dipped over Matte Tin with Nickel Preplate. The DIP types are Matte Tin over Nickel Preplate. Both types in this series are backward compatible with Sn/Pb soldering systems.

REACH COMPLIANT INFORMATION

This series has proven that this product does not contain harmful chemicals, it also has harmful chemical substances through the registration, inspection and approval.