SWRA_YMD-6W &SWRB_YMD-6W Series

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

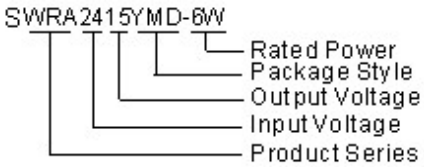
FEATURES

Operating Temperature: -40°C to +85°C
I/O-Isolation 1.5KVDC
Metal Case Package
No Heat sink Required
Industry Standard Pin out
MTBF>1,000,000 hours
RoHS Compliance

APPLICATIONS

The SWRA_YMD-6W/ SWRB_YMD-6W Series are specially designed for applications where a wide range input voltage power supplies are isolated from the input power supply in a distributed power supply system on a circuit board.
These products apply to:
1) Where the voltage of the input power supply is wide range (voltage range ≤2:1);
2) Where isolation is necessary between input and output (Isolation voltage ≤ 1500VDC);
3) Where the regulation of the output voltage and the output ripple noise are demanded.

MODEL SELECTION



PRODUCT PROGRAM

Part Number	Input			Output			Efficiency (%, Typ)
	Voltage (VDC)			Voltage (VDC)	Current (mA)		
	Nominal	Range	Max**		Max	Min	
SWRA0505YMD-6W*	5	4.5-9	11	±5	±600	±60	76
SWRA0512YMD-6W*				±12	±250	±25	78
SWRA0515YMD-6W*				±15	±200	±20	80
SWRB0505YMD-6W				5	1200	120	76
SWRB0512YMD-6W*				12	500	50	78
SWRB0515YMD-6W*				15	400	40	80
SWRB0524YMD-6W*				24	250	25	79
SWRA1205YMD-6W*	12	9-18	20	±5	±600	±60	78
SWRA1212YMD-6W*				±12	±250	±25	80
SWRA1215YMD-6W*				±15	±200	±20	81
SWRB1205YMD-6W				5	1200	120	78
SWRB1212YMD-6W*				12	500	50	80
SWRB1215YMD-6W*				15	400	40	81
SWRB1224YMD-6W*				24	250	25	80
SWRA2405YMD-6W*	24	18-36	40	±5	±600	±60	81
SWRA2412YMD-6W*				±12	±250	±25	83
SWRA2415YMD-6W				±15	±200	±20	85
SWRA2424YMD-6W*				±24	±125	±13	84
SWRB2403YMD-6W*				3	2000	200	78
SWRB2405YMD-6W				5	1200	120	81
SWRB2412YMD-6W				12	500	50	83
SWRB2415YMD-6W*				15	400	40	85
SWRB2424YMD-6W				24	250	25	84
SWRA4805YMD-6W*	48	36-72	80	±5	±600	±60	81
SWRA4812YMD-6W*				±12	±250	±25	83
SWRA4815YMD-6W*				±15	±200	±20	85
SWRA4824YMD-6W*				±24	±125	±13	84
SWRB4803YMD-6W*				3	2000	200	78
SWRB4805YMD-6W				5	1200	120	81
SWRB4812YMD-6W*				12	500	50	83
SWRB4815YMD-6W*				15	400	40	85
SWRB4824YMD-6W*				24	250	25	84

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

COMMON SPECIFICATION

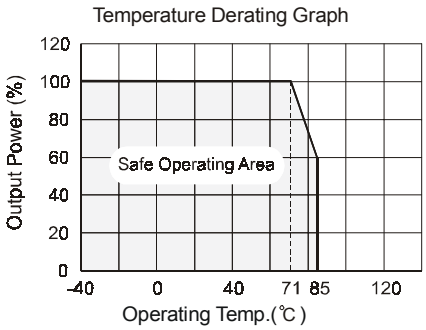
Item	Test Conditions	Min	Typ	Max	Units
Operating temperature		-40		85	°C
Storage Temperature Range		-55		125	
Storage Humidity Range				95	%
Cooling	Free Air Convection				
Lead Temperature	1.5mm from case for 10 seconds			300	°C
Temperature Rise at Full Load			40		
Isolation voltage	Flash tested for 60 seconds		1500		VDC
Isolation resistance	Test at 500VDC		1000		MΩ
Isolation capacitance	Input/Output		100		pF
No-load Power Consumption			500		mW
Output Short Circuit Protection	Continuous, automatic recovery				
Case Material		Auminium alloy			
MTBF		1000			KHour
Weigh			15		g

OUTPUT SPECIFICATIONS

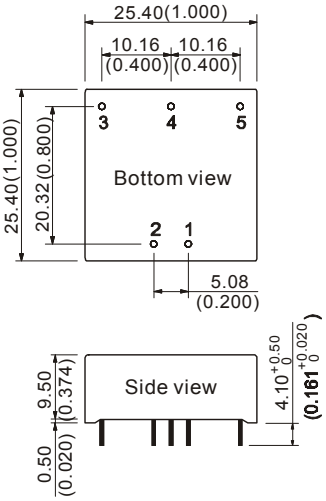
Item	Test Conditions	Min	Typ	Max	Units
Output Power	See above products program			6	W
Positive Voltage Accuracy	Refer to recommended circuit		±1	±3	%
Negative Voltage Accuracy	Refer to recommended circuit		±3	±5	
Load Regulation	From 10% To 100% load		±0.5	±1*	
Line Regulation(at full load)	Input voltage from low to high		±0.2	±0.5	
Temperature Drift(Vout)	Refer to recommended circuit		0.02		%/°C
Ripple	20MHz bandwidth		30	50	mVp-p
Noise	20MHz bandwidth		75	150	
Switching Frequency	100% load, nominal Input voltage		80-550		KHz
* Dual output models unbalanced load: ±5%.					

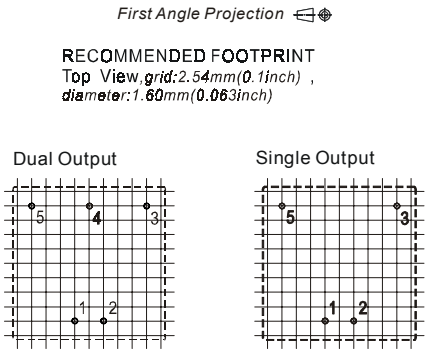
Note:
1.All specifications measured at T_A=25°C, humidity<75%, nominal input voltage and rated output load unless otherwise specified.

TYPICAL CHARECTERISTICS



OUTLINE DIMENSIONS & FOOTPRINT DETAILS





FOOTPRINT DETAILS

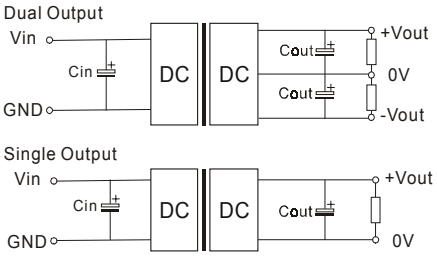
Pin	Single	Dual
1	GND	GND
2	Vin	Vin
3	+Vo	+Vo
4	NO Pin	0V
5	0V	-Vo

Note:
Unit:mm(inch)
Pin diameter:0.80mm(0.031inch)
Pin tolerances:±0.05mm(±0.002inch)
General tolerances:±0.25mm(±0.010inch)

APPLICATION NOTE

Recommended Circuit

All the SWRA_YMD-6W & SWRB_YMD-6W Series have been tested according to the following recommended testing circuit before leaving factory. This series should be tested under load. Never be tested under no load (see Figure 1).



(Figure 1)

If you want to further decrease the output ripple, you can increase capacitance properly or choose capacitors with low ESR. However, the capacitance should not be too high.(Table 1).

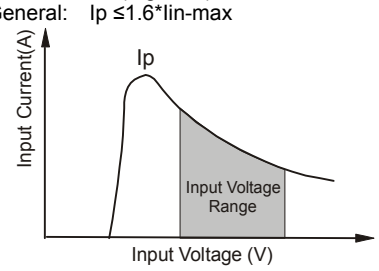
Extemal Capacitor Table(Table 1)

Vin (VDC)	Cin (uF)	Single Vout (VDC)	Cout (uF) max	Dual Vout (VDC)	Cout (uF) max
5	100	3.3	2200	±5	500
12	100	5	1000	±9	240
24	10-47	9	470	±12	150
48	10-47	12	330	±15	120
-	-	15	220	-	-
-	-	24	100	-	-

Input Current

When it is used in unregulated power supply, be sure that the fluctuating range of the power supply and the rippled voltage do not exceed the module standard. Input current of power supply should afford the startup current of this kind of DC/DC module. (Figure 2).

General: Ip ≤1.6*Iin-max



(Figure 2)

The products cannot be used in parallel and in hot plug.