

# SCHMID-M



## SUWD240512K-15W

**15W, ULTRA WIDE INPUT, DUAL ISOLATED & DUAL OUTPUT DC-DC CONVERTER**



### FEATURES

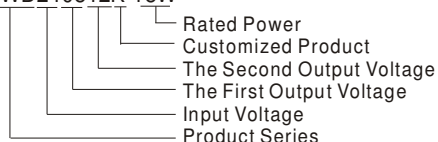
- 7:1 ultra wide input voltage range
- 2.5kVDC input/output isolation
- Over current protection
- Over voltage protection
- Output short circuit protection
- Output over load protection
- Operating temperature: -40°C ~ +85°C
- Internal SMD construction
- MTBF>1,000,000 hours
- Industrial level specifications

### APPLICATION

The SUWD240512K-15W applies in the automobile electron where requires ultra input voltage.

### MODEL SELECTION

SUWD240512K-15W



### PRODUCT PROGRAM

Number	Input			Output			Efficiency (%) **	Capacitor Load Max*** (µF)
	Voltage(VDC)			Voltage (VDC)	Current (mA)			
	Nominal	Range	Max*		Max	Min		
SUWD240512K-15W	24	9-63	100	5/12	1000/800	100/80	77	470/470

\* The input voltage can't exceed the value also its operating time should be less than 20 ms, or the product will be damaged that can't repair forever.

\*\*Typical value, nominal input voltage and full load.

\*\*\* Capacitor MAX load tested at nominal input voltage, full load and constant resistive load.

### COMMON SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Unit
Storage humidity		5	--	95	%
Operating temperature		-40	--	85	°C
Storage temperature		-55	--	125	
Maximum Case Temp		--	--	105	
Lead temperature	1.5mm from case for 10 seconds	--	--	300	
Switching frequency	Full load, nominal input	--	300	--	kHz
MTBF	M1L-HDBK-217F@25°C	1000	--	--	k hours
Cooling		Free air convection			
Package material		Plastic			
Weight		--	65	--	g

### INPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Unit
Start-up time		--	10	--	mS
Isolation voltage	Input/Output	2500	--	--	VDC
	Output /Output				
Isolation resistance	Test at 500VDC	500	--	--	MΩ
Isolation capacitance	100KHz/0.1V	--	1000	--	PF

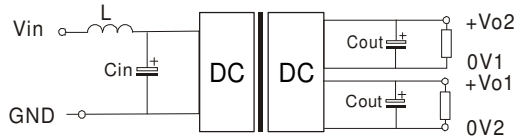
## OUTPUT SPECIFICATIONS

Item	Test Conditions	Min.	Typ.	Max.	Unit
Output power	See product program	1.5	--	15	W
Output voltage accuracy	Refer to recommended circuit	--	--	±2	%
Voltage cross regulation	One 50% load, the other from 10% to 100% load	--	--	±1	
Load regulation	From 10% to 100% load	--	±0.5	--	
Voltage regulation	Input voltage from low to high and 100% load	--	±0.2	--	
Temperature drift	Refer to recommended circuit	--	--	±0.03	%/°C
Noise & Ripple	20MHz bandwidth	--	50	100	mV
Transient recovery time	25% rated load range	--	200	500	μS
Transient peak deviation		--	±3	±5	%
Over current protection	Full input voltage	130	150	--	%Io
Output over voltage protection	5V Output	--	6.2	--	VDC
	12V Output	--	15	--	
Output short circuit protection		Hiccup, auto-recovery			

## RECOMMENDED CIRCUIT

### 1. Recommended circuit

All the series have been tested according to the following recommended testing circuit (Figure 1) before leaving factory.



(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 can't exceed the maximum capacitor load in the list.

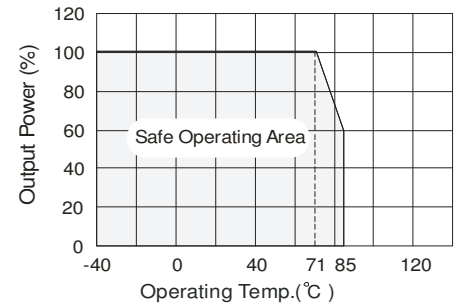
### 2. Recommended capacitance

Capacitance Output voltage	Cout (μF)	Cin (μF)
5(VDC)	470/220	100
12(VDC)	220/100	

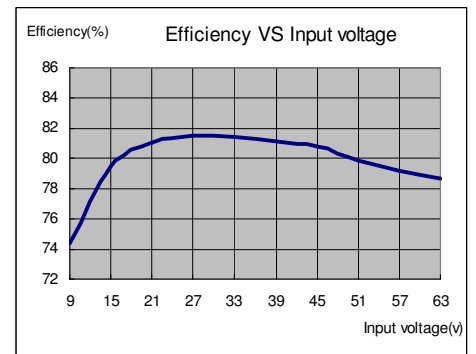
### 3. No parallel connection or plug and play

## TEMPERATURE & EFFICIENCY CURVE

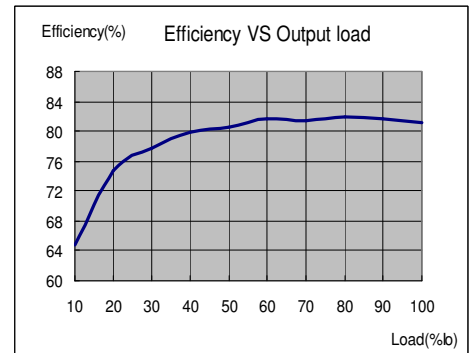
### 1) Typical temperature curve



### 2) Efficiency & input voltage curve

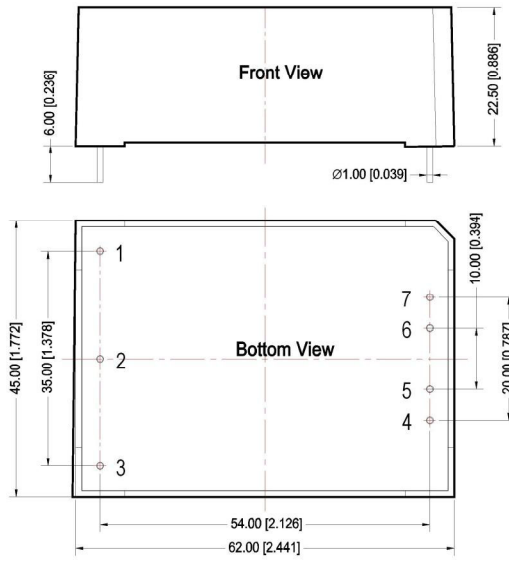


### 3) Efficiency & output load curve



# OUTLINE DIMENSIONS & FOOTPRINT DETAILS

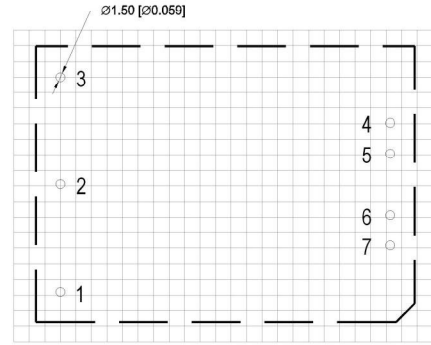
## MECHANICAL DIMENSIONS



FOOTPRINT DETAILS	
Pin	Function
1	V in
2	GND
3	NC
4	0V 1
5	+0V 1
6	0V 2
7	+0V 2

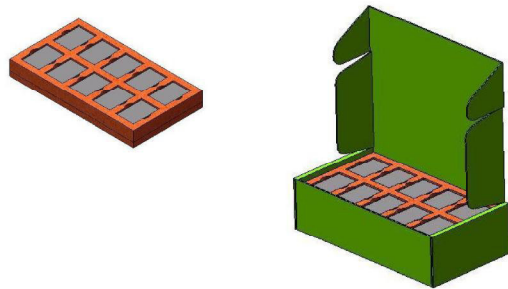
Note:  
 Unit:mm[inch]  
 Pin diameter tolerances: $\pm 0.10$ mm[ $\pm 0.004$ inch]  
 General tolerances: $\pm 0.50$ mm[ $\pm 0.020$ inch]

## RECOMMENDED FOOTPRINT



Note: Grid 2.54\*2.54mm

## PACKAGE DIAGRAM



Note:  
 Inner packaging box dimensions: L\*W\*H=355\*192\*93mm  
 Packaging quantity: 20pcs  
 Outer packaging box dimensions: L\*W\*H=405\*380\*305mm  
 Packaging quantity: 120pcs

## NOTE

1. Minimum operating current is 10% of rated current, if less than 10% rated current, output ripple may increase rapidly, the amplitude  $\leq 1V$ .
2. All specifications are measured at  $T_A=25^\circ C$ , humidity<75%, nominal input voltage and rated output load unless otherwise specified.
3. In this datasheet, all the test methods of indications are based on corporate standards.