



## ■ Features

- DIP 1"x1" package with industry standard pinout
- 4:1 ultrawide input range
- Operating temperature range -40 ~ +85°C
- No minimum load required
- Comply to EN55032 radiated Class A without additional components
- High efficiency up to 86%
- Protections: Short circuit (Continuous) / Overload / Over voltage / Input under voltage
- 1.5KVDC I/O isolation
- 3 years warranty

## ■ Applications

- Telecom/datacom system
- Wireless network
- Industrial control facility
- Instrument
- Analyzer
- Detector
- Data switch

## ■ Description

SKMW06 and DKMW06 series are 6W isolated and regulated module type DC-DC converter with DIP 1"x1" package. It features international standard pins, a high efficiency up to 86%, wide working temperature range -40~+85°C, 1.5KVDC I/P-O/P isolation voltage, compliance to EN55032 radiated Class A without additional components, continuous-mode short circuit, overload, over temperature, input under voltage protection etc. The models account for different input voltage 9~36V and 18~75V 4:1 ultrawide input range, and various output voltage, 3.3V/5V/9V/12V/15V/24V for single output and ±5V/±12V/±15V/±24V for dual outputs, which are suitable for all kinds of systems, such as industrial control, telecommunication field, distributed power architecture, and so on.

## ■ Model Encoding

**S** **K** **M** **W** **0** **6** **F** - **12**

- Output voltage (3.3/5/9/12/15/24Vdc, ±5/±12/±15/±24Vdc)
- Input voltage (F: 9~36Vdc, G: 18~75Vdc)
- Rated wattage
- Series name { S: Single output  
D: Dual output

File Name: SKMW06, DKMW06-SPEC 2020-04-10

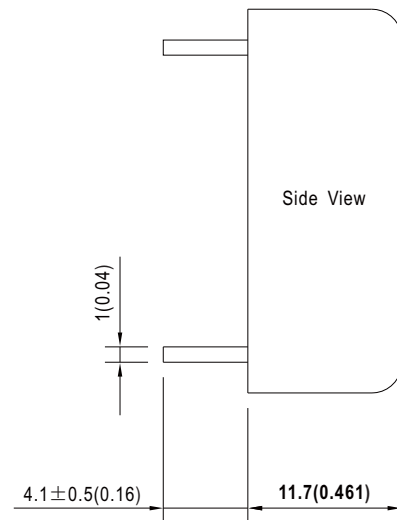
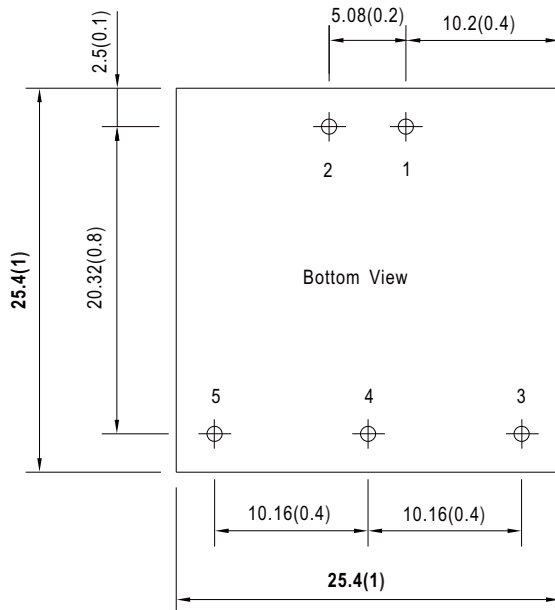
MODEL SELECTION TABLE							
ORDER NO.	INPUT			OUTPUT		EFFICIENCY (TYP.)	CAPACITOR LOAD (MAX.)
	INPUT VOLTAGE (RANGE)	INPUT CURRENT		OUTPUT VOLTAGE	OUTPUT CURRENT		
		NO LOAD	FULL LOAD				
SKMW06F-03	Normal 24V (9 ~ 36V)	5mA	268mA	3.3V	0~1500mA	77%	1800μF
SKMW06F-05		5mA	309mA	5V	0~1200mA	81%	1000μF
SKMW06F-09		7mA	309mA	9V	0~667mA	83%	680μF
SKMW06F-12		7mA	309mA	12V	0~500mA	85%	470μF
SKMW06F-15		8mA	309mA	15V	0~400mA	85%	220μF
SKMW06F-24		13mA	309mA	24V	0~250mA	86%	100μF
DKMW06F-05		7mA	309mA	±5V	±0~600mA	81%	*470μF
DKMW06F-12		9mA	309mA	±12V	±0~250mA	85%	*100μF
DKMW06F-15		11mA	309mA	±15V	±0~200mA	85%	*100μF
DKMW06F-24		17mA	309mA	±24V	±0~125mA	85%	*100μF
SKMW06G-03		Normal 48V (18 ~ 75V)	13mA	134mA	3.3V	0~1500mA	77%
SKMW06G-05	2mA		155mA	5V	0~1200mA	81%	1000μF
SKMW06G-12	3mA		155mA	12V	0~500mA	85%	470μF
SKMW06G-15	3mA		155mA	15V	0~400mA	86%	220μF
SKMW06G-24	5mA		155mA	24V	0~250mA	86%	100μF
DKMW06G-05	3mA		155mA	±5V	±0~600mA	81%	*470μF
DKMW06G-12	4mA		155mA	±12V	±0~250mA	85%	*100μF
DKMW06G-15	5mA		155mA	±15V	±0~200mA	86%	*100μF

\* For each output

SPECIFICATION				
INPUT	VOLTAGE RANGE	F: 9~36Vdc , G: 18~75Vdc		
	SURGE VOLTAGE (100ms max.)	24Vin models : 50Vdc, 48Vin models : 100Vdc		
	FILTER	Pi type		
	PROTECTION	Fuse recommended. 24Vin models: 1.5A delay time Type, 48Vin models: 0.8A delay time Type		
	INTERNAL POWER DISSIPATION	0.12W		
OUTPUT	VOLTAGE ACCURACY	±1%		
	RATED POWER	6W		
	RIPPLE & NOISE <small>Note.2</small>	60mVp-p(typ.), 85mVp-p(max.)		
	LINE REGULATION <small>Note.3</small>	±0.2%		
	LOAD REGULATION <small>Note.4</small>	Single output models: ±1%, Dual output models: Main road ±1%, Side road ±1.5%		
	SWITCHING FREQUENCY (Typ.)	300KHz		
PROTECTION	SHORT CIRCUIT	Protection type : Continuous, automatic recovery		
	OVERLOAD	110 ~ 190% rated output power Protection type : Recovers automatically after fault condition is removed		
	OVER VOLTAGE	Protection type : Clamp by diode		
	UNDER VOLTAGE LOCKOUT	Start-up voltage	24Vin (F-type): 6.5Vdc, 48Vin (G-type): 15.5Vdc	
		Shutdown voltage	24Vin (F-type): 5.5Vdc, 48Vin (G-type): 12Vdc	
ENVIRONMENT	COOLING	Free-air convection		
	WORKING TEMP.	-40 ~ +85°C (Refer to "Derating Curve")		
	CASE TEMPERATURE	+105°C max.		
	WORKING HUMIDITY	5% ~ 95% RH non-condensing		
	STORAGE TEMP., HUMIDITY	-55 ~ +125°C, 10 ~ 95% RH non-condensing		
	TEMP. COEFFICIENT	0.03% / °C (0 ~ 71°C)		
	SOLDERING TEMPERATURE	1.5mm from case of 1 ~ 3sec./260°C max.		
	VIBRATION	10 ~ 500Hz, 2G 10min./1cycle, period for 60min. each along X, Y, Z axes		
	SAFETY & EMC (Note.5)	SAFETY STANDARDS	UL60950-1, EAC TP TC 004 approved	
WITHSTAND VOLTAGE		I/P-O/P:1.5KVDC		
ISOLATION RESISTANCE		I/P-O/P:100M Ohms / 500VDC / 25°C / 70% RH		
ISOLATION CAPACITANCE (Typ.)		1000pF		
EMC EMISSION		Parameter	Standard	Test Level / Note
		Conducted	EN55032(CISPR32)	N/A
		Radiated	EN55032(CISPR32)	Class A without external components Class B with external components
EMC IMMUNITY		Parameter	Standard	Test Level / Note
		ESD	EN61000-4-2	contact ±4KV
		Radiated Susceptibility	EN61000-4-3	10V/m
		EFT/Burest	EN61000-4-4	±2KV(see page 4)
		Surge	EN61000-4-5	Line-Line ±2KV
		Conducted	EN61000-4-6	3Vrms
OTHERS	MTBF	1000Khrs MIL-HDBK-217F(25°C)		
	DIMENSION (L*W*H)	25.4*25.4*11.7mm (1*1*0.461 inch)		
	CASE MATERIAL	Black coated copper with non-conductive base		
	PACKING	12.5g; 19pcs/per tube, 912pcs/48 tube/per carton		
NOTE	<p>1.All parameters are specified at normal input(F:24Vdc, G:48Vdc), rated load, 25°C 70% RH ambient.  2.Ripple &amp; noise are measured at 20MHz by using a 12" twisted pair terminated with a 0.1µf &amp; 47µf capacitor.  3.Line regulation is measured from low line to high line at rated load.  4.Load regulation is measured from 5% to 100% rated load.  5.The final equipment must be re-confirm that it still meet EMC directives. For guidance on how to perform these EMC tests, please refer to "EMI testing of component power supplies."</p>			

### Mechanical Specification

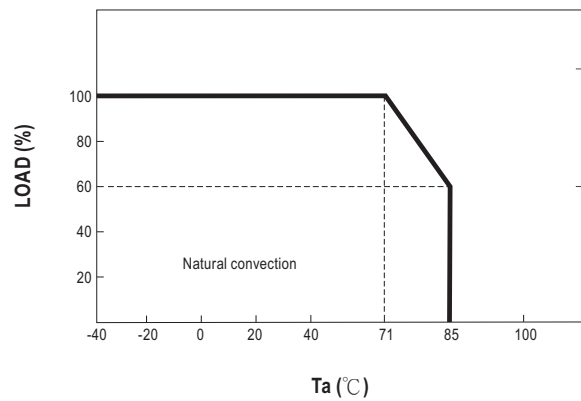
- All dimensions in mm(inch)
- Tolerance:  $x.x \pm 1\text{mm}$  ( $x.xx \pm 0.25"$ )
- Pin size is  $1 \pm 0.1\text{mm}$  ( $0.04" \pm 0.004"$ )



### Plug Assignment

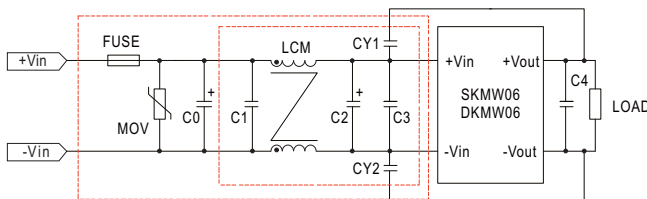
Pin No.	Pin-Out	
	SKMW06 (Single output)	DKMW06 (Dual output)
1	+Vin	+Vin
2	-Vin	-Vin
3	+Vout	+Vout
4	N.P	Common
5	-Vout	-Vout

### Derating Curve



### EMC Suggest Circuit

\* Required external components to meet EN55032 radiated Class B emission as below:



Model	EN55032 Class B	
	Vin:24V	Vin:48V
FUSE	Choose according to actual input current	
MOV	S20K30	S14K60
C0	680µf / 50V	680µf / 100V
C1	1µf / 50V	1µf / 100V
C2	330µf / 50V	330µf / 100V
C3	4.70µf / 50V	4.70µf / 100V
C4	10µf / 50V	
LCM	4.7mH	
CY1 · CY2	1nF / 2KV	