

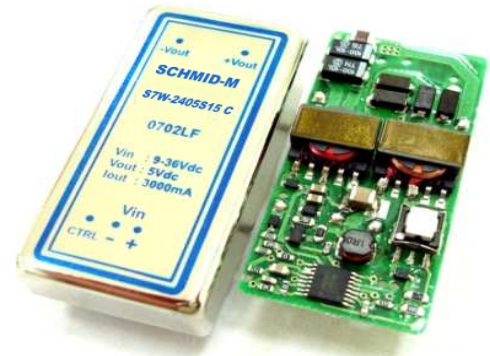
# S7W - 10W Series

10W 4:1 Regulated Single & Dual output

**SCHMID-M**<sup>®</sup>  
DC/DC - Converter

## Features

- Wide 4:1 Input Range
- Full SMD Technology
- 1500 VDC Isolation
- Continuous Short Circuit Protection
- Efficiency up to 85%
- -40 ~ 85°C Operation Temperature Range
- Remote on/off Control (Optional)
- EMI Complies With EN55022 Class A



The S7W series is a family of cost effective 10W single & dual output DC-DC converters. These converters are made with nickle-coated brass case in a 2"x1" with high performance features such as 1500 VDC input/output isolation voltage, continuous short circuit protection with automatic restart and tight line / load regulation. Devices are encapsulated by using flame retardant resin. Input voltages of 24 and 48 with output voltage of 3.3, 5, 7.2, 9, 12, 15, ±5, ±7.2, ±9, ±12, ±15 Vdc. High performance features include high efficiency operation up to 85% and output voltage accuracy of ±1% maximum.

All specifications typical at Ta=25°C, nominal input voltage and full load unless otherwise specified

OUTPUT SPECIFICATIONS	
Voltage accuracy	±1%
Line regulation	±0.5%
Load regulation	±0.5%(10% to 100% Loading) ±1%(below 10% load)
Cross Regulation (Dual Output) (1)	±5%
Ripple & noise(20 MHz bandwidth)(2)	75mV pk-pk
Over-current protection	140% of max. Iout
Short circuit protection	Indefinite(Automatic Recovery)
Temperature coefficient	±0.02%/°C
Capacitor load(3)	See table

INPUT SPECIFICATIONS	
Voltage Range	See table
Start up Time(Nominal Vin and constant resistive load)	20mS, typ
Max. Input Current	See table
No-Load Input Current	See table
Input Filter	PI Type
Input Reflected Ripple Current(4)	35mA pk-pk

GENERAL SPECIFICATIONS	
Efficiency	See table, typ
I/O Isolation Voltage(3 sec)	
Input/Output	1500Vdc
Case/Input & Output	1000Vdc
I/O Isolation Capacitance	1200 pF Typ.
I/O Isolation Resistance	1000M Ohm
Switching Frequency	Typical 300kHz
Humidity	95% rel H
Reliability Calculated MTBF(MIL-HDBK-217 F)	>1.121 Mhrs
Safety Standard : (designed to meet)	IEC 60950-1:2001
Remote On/Off(Optional)	ON:2.5~5.5VDC or open circuit OFF:-0.7~0.8VDC or Shortcircuit pin 2 and pin 6 OFF idle current:2.5mA Typ.

EMC SPECIFICATIONS		
Radiated Emissions	EN55022	CLASS A
Conducted Emissions (5)	EN55022	CLASS A
ESD	IEC 61000-4-2	Perf. Criteria B
RS	IEC 61000-4-3	Perf. Criteria A
EFT	IEC 61000-4-4	Perf. Criteria B
CS	IEC 61000-4-6	Perf. Criteria A
PFMF	IEC 61000-4-8	Perf. Criteria A

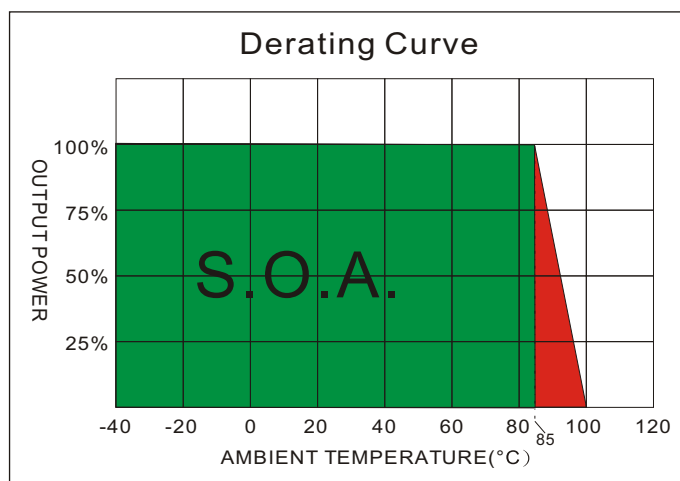
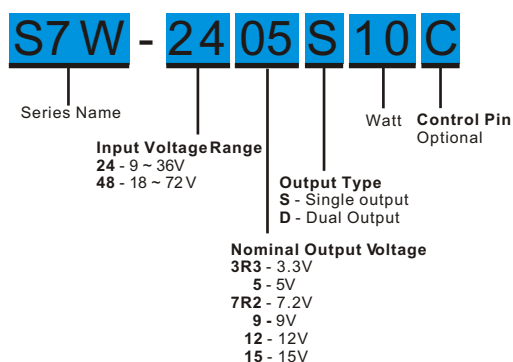
PHYSICAL SPECIFICATIONS	
Case Material	Nickel-coated Brass
Pin Material	Ø1.0mm Brass Solder-coated
Potting Material	Epoxy (UL94V-0 rated)
Weight	30.0g
Dimensions	2.00"x1.00"x0.40"

ENVIRONMENT SPECIFICATIONS	
Operating Temperature	-40°C~85°C(See Derating Curve)
Maximum Case Temperature	100°C
Storage Temperature	-40°C~125°C
Cooling	Nature Convection

ABSOLUTE MAXIMUM RATINGS(6)	
These are stress ratings. Exposure of devices to any of these conditions may adversely affect long-term reliability.	
Input Voltage(100mS)	
24 Modes	-0.7~40 Vdc
48 Modes	-0.7~80 Vdc
Lead Soldering Temperature (1.5mm from case 10sec.)	260°C

## S7W - 10W 4:1 Regulated Single & Dual output

### PART NUMBER STRUCTURE

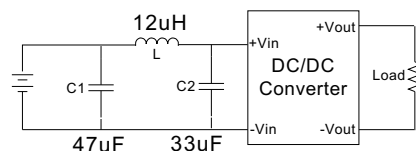


### MODEL SELECTION GUIDE

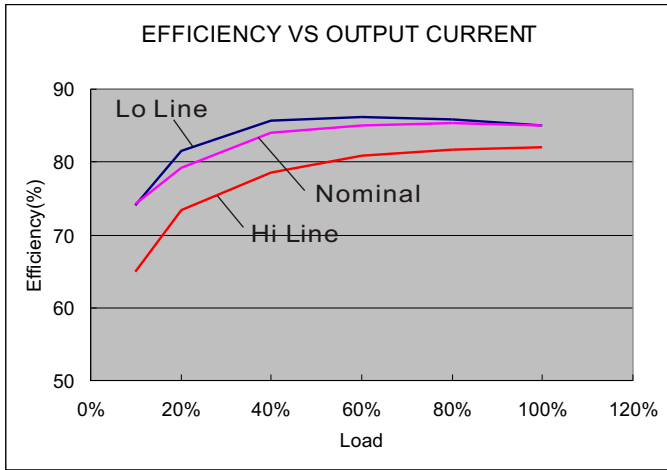
MODEL NUMBER	INPUT Voltage Range (Vdc)	INPUT Current		OUTPUT Voltage (Vdc)	OUTPUT Current		EFFICIENCY @FL(%)	Capacitor Load(µF)
		No-Load (mA)	Full Load (mA)		Min. load (mA)	Full load (mA)		
S7W-243R3S10	9-36	25	348	3.3	0	2000	80	3300
S7W-2405S10	9-36	25	508	5	0	2000	82	3300
S7W-247R2S10	9-36	25	502	7.2	0	1388	83	1000
S7W-2409S10	9-36	25	502	9	0	1111	83	680
S7W-2412S10	9-36	25	490	12	0	833	85	680
S7W-2415S10	9-36	25	490	15	0	666	85	470
S7W-2405D10	9-36	25	508	±5	0	±1000	82	±2200
S7W-247R2D10	9-36	25	502	±7.2	0	±694	83	±470
S7W-2409D10	9-36	25	502	±9	0	±555	83	±470
S7W-2412D10	9-36	25	490	±12	0	±416	85	±470
S7W-2415D10	9-36	25	490	±15	0	±333	85	±330
S7W-483R3S10	18-72	20	174	3.3	0	2000	79	3300
S7W-4805S10	18-72	20	254	5	0	2000	82	3300
S7W-487R2S10	18-72	20	251	7.2	0	1388	83	1000
S7W-4809S10	18-72	20	251	9	0	1111	83	680
S7W-4812S10	18-72	20	245	12	0	833	85	680
S7W-4815S10	18-72	20	245	15	0	666	85	470
S7W-4805D10	18-72	20	254	±5	0	±1000	82	±2200
S7W-487R2D10	18-72	20	251	±7.2	0	±694	83	±470
S7W-4809D10	18-72	20	251	±9	0	±555	83	±470
S7W-4812D10	18-72	20	245	±12	0	±416	85	±470
S7W-4815D10	18-72	20	245	±15	0	±333	85	±330

### NOTE

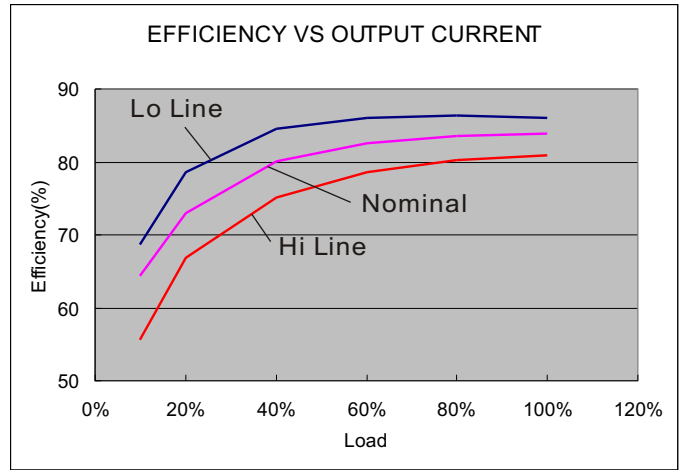
- One load is 25% to 100% load, the other load is 100% load, the output voltage variable rate is within ±5%.
- Ripple/Noise measured with 20MHz bandwidth.
- Tested by minimal  $V_{in}$  and constant resistive load.
- Measured Input reflected ripple current with a simulated source inductance of 12µH.
- Input filter components (C1, C2, L) are used to help meet conducted emissions requirement for the module.  
These components should be mounted as close as possible to the module; and all leads should be minimized to decrease radiated noise.
- Exceeding the absolute ratings of the unit could cause damage.  
It is not allowed for continuous operating.



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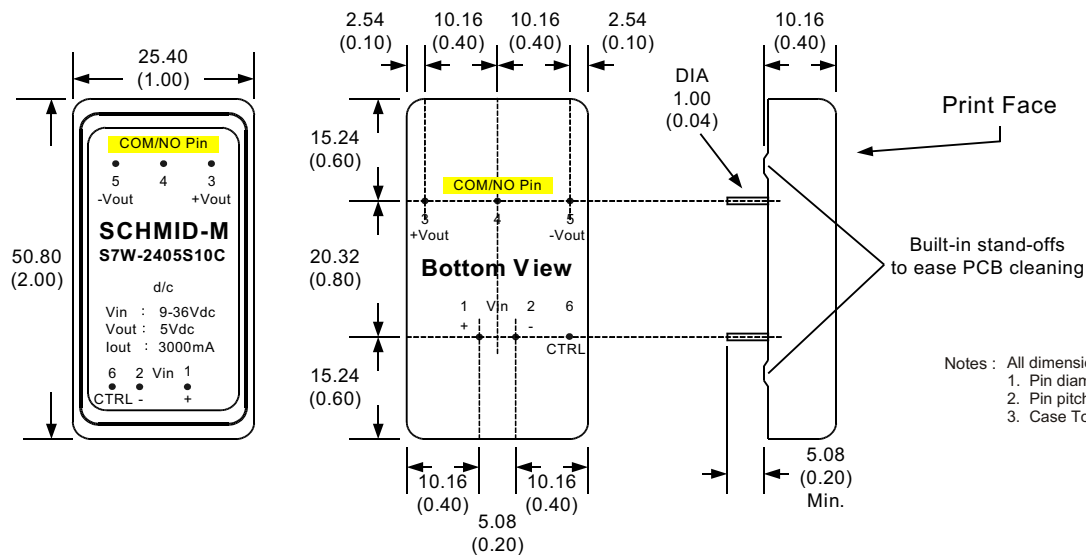


24 Models



48 Models

## MECHANICAL SPECIFICATIONS



- Notes : All dimensions are typical in millimeters ( inches ).
1. Pin diameter:  $1.0 \pm 0.05$  (  $0.04 \pm 0.002$  )
  2. Pin pitch tolerance:  $\pm 0.35$  (  $\pm 0.014$  )
  3. Case Tolerance:  $\pm 0.5$  (  $\pm 0.02$  )

## PIN CONNECTIONS

PIN NUMBER	Standard		Remote Control (Optional)	
	SINGLE	DUAL	SINGLE	DUAL
1	+V Input	+V Input	+V Input	+V Input
2	-V Input	-V Input	-V Input	-V Input
3	+V Output	+V Output	+V Output	+V Output
4	N.P.	Common	N.P.	Common
5	-V Output	-V Output	-V Output	-V Output
6	N.P.	N.P.	CTRL	CTRL