

***Synchronous Rectification
Open Frame Construction.***

The SMM40 series of DC-DC converters have been designed as a surface-mount & thru-hole solution for a wide range of applications where low voltage, high efficiency and ease of assembly are needed. The SMM40 series packs up to 40 watts of power in 1.00" x 2.0" x .450" open frame construction and operating temperatures of -40c to + 105C. All models are designed to meet UL1950, CSA 950 and EN 60950.

SMD & Thru-hole Mounting

SMM40 Series

Single Outputs

(Synchronous Miniature Module)

- Surface Mount & Thru-Hole Types
- Pick & Place Packaging
- Wide Input Range 2:1
- High Efficiency to 89% @ 5V
- Remote On/Off
- Remote Sense
- External Trim
- Under-Voltage Lockout
- 40C To 105C Operation
- Overvoltage & Short Circuit Protection
- 1500Vdc Isolation

Model Selection Guide

Input Voltage Nom.	Input Voltage Range	Line Regulation FL	Load Regulation NL	Output Voltage	Output Current(FL)	Po (W)	Output OVP	Typical Efficiency	Model Number Note (**)
12Vdc	9-18Vdc	0.962	10 mA	1.50	6	9	3.6	78%	SMM40-12S1V5(**)
12Vdc	9-18Vdc	1.160	10 mA	1.80	6	11	3.6	79%	SMM40-12S1V8(**)
12Vdc	9-18Vdc	1.524	10 mA	2.50	6	15	3.6	82%	SMM40-12S2V5(**)
12Vdc	9-18Vdc	1.961	10 mA	3.30	6	20	3.9	85%	SLVMM-12S3V3
12Vdc	9-18Vdc	2.841	10 mA	5.00	6	30	6.8	88%	SMM40-12S05(**)
12Vdc	9-18Vdc	2.841	10 mA	6.00	5	30	6.8	88%	SMM40-12S05(**)
24Vdc	18-36Vdc	0.641	10 mA	1.50	8	12	3.6	78%	SMM40-24S1V5(**)
24Vdc	18-36Vdc	0.738	10 mA	1.80	8	14	3.6	79%	SMM40-24S1V8(**)
24Vdc	18-36Vdc	1.016	10 mA	2.50	8	20	3.6	82%	SMM40-24S2V5(**)
24Vdc	18-36Vdc	1.275	10 mA	3.30	8	26	3.9	85%	SMM40-24S3V3(**)
24Vdc	18-36Vdc	1.894	10 mA	5.00	8	40	6.8	88%	SMM40-24S05(**)
24Vdc	18-36Vdc	1.873	10 mA	6.00	6.6	40	6.8	89%	SMM40-24S06(**)
48Vdc	36-75Vdc	0.316	10 mA	1.50	8	12	3.6	79%	SMM40-48S1V5(**)
48Vdc	36-75Vdc	0.365	10 mA	1.80	8	14	3.6	80%	SMM40-48S1V8(**)
48Vdc	36-75Vdc	0.502	10 mA	2.50	8	20	3.6	83%	SMM40-48S2V5(**)
48Vdc	36-75Vdc	0.630	10 mA	3.30	8	26	3.9	86%	SMM40-48S3V3(**)
48Vdc	36-75Vdc	0.936	10 mA	5.00	8	40	6.8	89%	SMM40-48S05(**)
48Vdc	36-75Vdc	0.926	10 mA	6.00	6.6	40	6.8	90%	SMM40-48S06(**)

Note (**): Insert suffix; **SM** for Surface-mount type or **TH** for Thru

Modifications and Customs available

Specifications All specifications Are typical @ nominal input, Full Load & 25C unless otherwise stated

Input

Input Voltage Range	.....	2:1
Note (3)	.....	9-18Vdc (12V Models)
	.....	18-36Vdc (24V Models)
	.....	36-75Vdc (48V Models)
Input filter	.....	Pi Type
Under Voltage Lockout	.....	8.5V (12V Models)
	.....	16.5V (24V Models)
	.....	32V (48V Models)
Remote :ON	.....	+5V or open, Ref. (-)Vin
:OFF	.....	+0.7V, Ref (-)Vin
Conducted Noise	.....	EN55022, level A (Note 5)

Output

Output Power	.....	40 W Continuous(Max)
Output Voltage/current	.....	See Model Table
Output Setting Accuracy		
Singles	.....	+/- 1% typ., +/- 1.5%max.
Load Regulation		
Singles(FL.-NL.)	.....	+/- 0.5% Note (4)
Line Regulation	.....	+/- 0.2%
Total Error Band		
Singles	.....	+/- 3%, Line/Load&Temp.
Ripple & Noise(20Mhz BW)	.....	50mV
Transient Response (FL-1/2L)	.....	2 % Deviation, 200uS
Temperature Coefficient	.....	+/- .01%/c
Short circuit Protection	.....	Indefinite, Modulated, AutomaticRecovery

General

Efficiency	.....	See Model Table
Isolation Voltage	.....	1500Vdc (1Min)
Isolation Resistance	.....	100M
Switching Frequency	.....	350Khz
MTBF	.....	1.0M hrs.MIL-HDBK-217F Ground Benign @ 25C

Enviromental

Operating Temperature Range	.....	-40C to +105C (See Derating Curve)
	.....	-40C To +50C @ FL
Storage Temperature Range	.....	-55C To +125C
Humidity	.....	5% To 95% RH, Non-condensing
Cooling	.....	Natural Convection

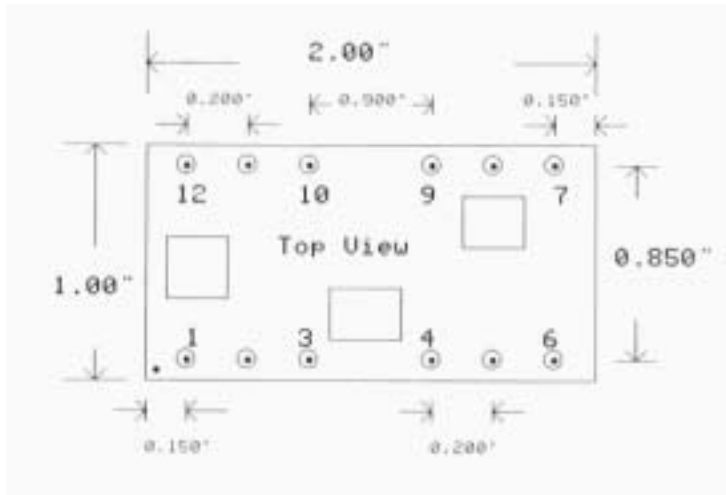
Mechanical

Size	.....	1.00" X 2.00" X 0.450"
Weight	.....	16.0 G
Mounting	.....	SMD & Through Hole Types
Case/Material	.....	Open-Frame, 94V-0 FR-4 P.C.B.

Notes:

- 1) Output Power is up to 20W, see Io rating On "Model selection Guide".
- 2) Model numbers are for SMD type pin configuration, replace suffix (SM) with (TH) for through-hole type
- 3) Typical start-up for 12Vin models is 9V. Maximum startup is 9.5V.
- 4) Operation is allowed to No-Load, however operation below 10% load may cause ripple & noise to exceed spec.

Mechanical Specifications



Pin Connections	
Pin No.	Function
1	-Vin
2	-Vin
3	N/C
4	N/C
5	-sense
6	-Vo
7	+Vo
8	+sense
9	Trim
10	ON/OFF
11	-Vin
12	+Vin

