

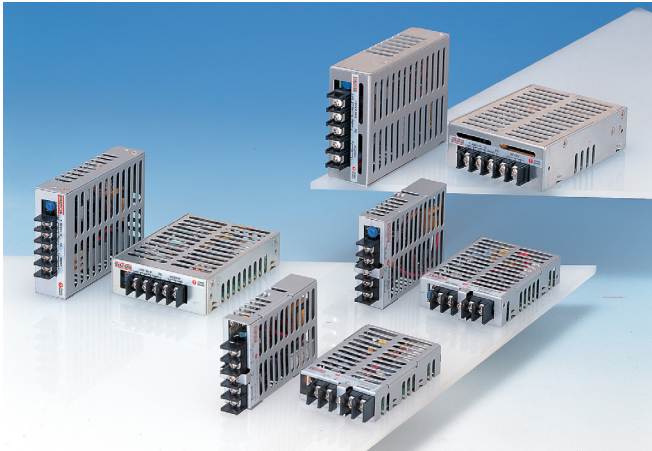


ETA-USA

HIGH QUALITY SWITCHING POWER SUPPLIES

15 WATT DC-DC CONVERTER

**SVM-SC series
Single Channel**



Features

1. Very small (one of the smallest in Japan)
2. No derating when mounted on a horizontal surface
3. Low impedance capacitors
4. Over voltage protection
5. EMI: Complies with FCC/A

The SV-series has been developed to follow ETA's philosophy of "Miniaturization and high efficiency" of power supplies. The small size and high efficiency are suitable for many applications, especially small equipment.

SVM-SC12 Input Specifications

Specifications	Model				
SVM**SC12 15WATTS/1 OUTPUT	SVM05SC12	SVM12SC12	SVM15SC12	SVM24SC12	SVM48SC12
Input Characteristic					
Input Voltage	DC12V				
Input Range	DC9.2-16V				
Inrush Current	Not specified				
Efficiency [%] (typical) *1	79	80	82	83	83

SVM-SC24 Input Specifications

Specifications	Model				
SVM**SC24 15WATTS/1 OUTPUT	SVM05SC24	SVM12SC24	SVM15SC24	SVM24SC24	SVM48SC24
Input Characteristic					
Input Voltage	DC24V				
Input Range	DC19-32V				
Inrush Current	Not specified				
Efficiency [%] (typical) *1	79	81	82	84	85

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SVM-SC48 Input Specifications

Specifications	Model				
SVM**SC48 15WATTS/1 OUTPUT	SVM05SC48	SVM12SC48	SVM15SC48	SVM24SC48	SVM48SC48
Input Characteristic					
Input Voltage	DC48V				
Input Range	DC38-63V				
Inrush Current	Not specified				
Efficiency [%] (typical) *1	81	83	84	86	86

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SVM-SC12 Output Specifications

Specifications	Model				
	SVM05SC12	SVM12SC12	SVM15SC12	SVM24SC12	SVM48SC12
SVM**SC12 15WATTS/1 OUTPUT					
Output Voltage [V]	5	12	15	24	48
Output Current [A]	3.0	1.3	1.0	0.7	0.4
Voltage Adjust Range	+/-10% of Rated Output Voltage(at no load within input range)				
Ripple and Noise [mVp-p](maximum) *2	100	170	200	290	530
Regulation					
a.Statistic Line Regulation [mV](maximum)	40	96	120	192	384
b.Statistic Load Regulation [mV](maximum)	45	108	135	216	432
c.Temperature Coefficient *3	0.03%/°C				
d.Drift[mV](maximum) *4	40	75	90	135	255
e.Dynamic Load Regulation [mV](typical) *5	150	360	450	720	1440
f.Recovery Time *5	0.5mS(typical)				
Rise up time	100mS(maximum) at 25°C and rated input/output				
Hold up time	Not specified				
Functions					
Overcurrent Protection	Current Limiting with automatic recovery				
≥ 110% of Rated Output [A]	3.30	1.43	1.10	0.77	0.39
Overvoltage Protection	Output shutdown(to reset,leave 1minute after shutdown)				
≥ 110% of Rated Output [V]	5.50	13.2	16.5	26.4	52.8
Remote Sense	not available				
Remote On/Off	not available				
Reverse Voltage Protection	by internal fuse				
Environmental					
Operating Temperature	0 to +50°C				
Operating Humidity	85%RH(non-condensing)				
Storage Temperature	-20 to +85°C				
Storage Humidity	85%RH(non-condensing)				
Withstanding Voltage	Primary-Secondary AC2,000Vfor 1minute				
	Primary-Frame Ground AC2,000V for 1minute				
	Secondary-Frame Ground AC500V for 1minute				
Isolation Resistance	Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester				
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ² ,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)				
Shock	294m/s ²				
Cooling	Convection				
Line Conduction Noise	Not specified				
Safety	-				
Weight (typical)	120g				
MTBF [H]	660,000				
Switching Frequency[kHz](typical)	90 Fix.	90 Fix.	90 Fix.	90 Fix.	90 Fix.

Conditions:

*1 at DC12V and rated output

*2 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth

*3 at 0 to +50°C

*4 for 7hours from 1hour after switch-on at 25°C and rated input/output

*5 when output current changed from 25% to 75% of rated output current rapidly at DC12V input

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SVM-SC24 Output Specifications

Specifications	Model				
	SVM05SC24	SVM12SC24	SVM15SC24	SVM24SC24	SVM48SC24
SVM**SC24 15WATTS/1 OUTPUT					
Output Voltage [V]	5	12	15	24	48
Output Current [A]	3.0	1.3	1.0	0.7	0.35
Voltage Adjust Range	+/-10% of Rated Output Voltage(at no load within input range)				
Ripple and Noise [mVp-p](maximum) *2	150	220	250	340	580
Regulation					
a.Statistic Line Regulation [mV](maximum)	40	96	120	192	384
b.Statistic Load Regulation [mV](maximum)	45	108	135	216	432
c.Temperature Coefficient *3	0.03%/°C				
d.Drift[mV](maximum) *4	40	75	90	135	255
e.Dynamic Load Regulation [mV](typical) *5	150	360	450	720	1440
f.Recovery Time *5	0.3mS(typical)				
Rise up time	100mS(maximum) at 25°Cand rated input/output				
Hold up time	Not specified				
Functions					
Overcurrent Protection	Current Limiting with automatic recovery				
≥10% of Rated Output [A]	3.30	1.43	1.10	0.77	0.39
Overvoltage Protection	Output shutdown(to reset,leave 1minute after shutdown)				
≥10% of Rated Output [V]	5.50	13.2	16.5	26.4	52.8
Remote Sense	not available				
Remote On/Off	not available				
Reverse Voltage Protection	by internal fuse				
Environmental					
Operating Temperature	0 to +50°C				
Operating Humidity	85%RH(non-condensing)				
Storage Temperature	-20 to +85°C				
Storage Humidity	85%RH(non-condensing)				
Withstanding Voltage	Primary-Secondary AC2,000Vfor 1minute				
	Primary-Frame Ground AC2,000V for 1minute				
	Secondary-Frame Ground AC500V for 1minute				
Isolation Resistance	Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester				
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ² ,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)				
Shock	294m/s ²				
Cooling	Convection				
Line Conduction Noise	Not specified				
Safety	-				
Weight (typical)	120g				
MTBF [H]	750,000				
Switching Frequency[kHz](typical)	90 Fix.	90 Fix.	90 Fix.	90 Fix.	90 Fix.

Conditions:

*1 at DC24V and rated output

*2 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth

*3 at 0 to +50°C

*4 for 7hours from 1hour after switch-on at 25°Cand rated input/output

*5 when output current changed from 25% to 75% of rated output current rapidly at DC24V input

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SVM-SC48 Output Specifications

Specifications	Model				
	SVM05SC48	SVM12SC48	SVM15SC48	SVM24SC48	SVM48SC48
SVM**SC48 15WATTS/1 OUTPUT					
Output Voltage [V]	5	12	15	24	48
Output Current [A]	3.0	1.3	1.0	0.7	0.35
Voltage Adjust Range	+/-10% of Rated Output Voltage(at no load within input range)				
Ripple and Noise [mVp-p](maximum) *2	150	220	250	340	580
Regulation					
a.Statistic Line Regulation [mV](maximum)	40	96	120	192	384
b.Statistic Load Regulation [mV](maximum)	45	108	135	216	432
c.Temperature Coefficient *3	0.03%/°C				
d.Drift[mV](maximum) *4	40	75	90	135	255
e.Dynamic Load Regulation [mV](typical) *5	150	360	450	720	1440
f.Recovery Time *5	0.3mS(typical)				
Rise up time	500mS(maximum) at 25°Cand rated input/output				
Hold up time	Not specified				
Functions					
Overcurrent Protection	Current Limiting with automatic recovery				
≥ 10% of Rated Output [A]	3.30	1.43	1.10	0.77	0.39
Overvoltage Protection	Output shutdown(to reset,leave 1minute after shutdown)				
≥ 10% of Rated Output [V]	5.50	13.2	16.5	26.4	52.8
Remote Sense	not available				
Remote On/Off	not available				
Reverse Voltage Protection	by internal fuse				
Environmental					
Operating Temperature	0 to +50°C				
Operating Humidity	85%RH(non-condensing)				
Storage Temperature	-20 to +85°C				
Storage Humidity	85%RH(non-condensing)				
Withstanding Voltage	Primary-Secondary AC2,000Vfor 1minute Primary-Frame Ground AC2,000V for 1minute Secondary-Frame Ground AC500V for 1minute				
Isolation Resistance	Primary-Secondary-Frame Ground 50MΩ(minimum) by DC500V insulation tester				
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s ² ,20minutes' period for 60minutes each along X,Y,Z axes(non-operating)				
Shock	294m/s ²				
Cooling	Convection				
? Line Conduction Noise	Not specified				
? Safety	-				
? Weight (typical)	120g				
? MTBF [H]	750,000				
? Switching Frequency[kHz](typical)	90 Fix.	90 Fix.	90 Fix.	90 Fix.	90 Fix.

Conditions:

*1 at DC48V and rated output

*2 measured by a bayonet probe at the output connector at a 0 to 100MHz bandwidth

*3 at 0 to +50°C

*4 for 7hours from 1hour after switch-on at 25°Cand rated input/output

*5 when output current changed from 25% to 75% of rated output current rapidly at DC48V input

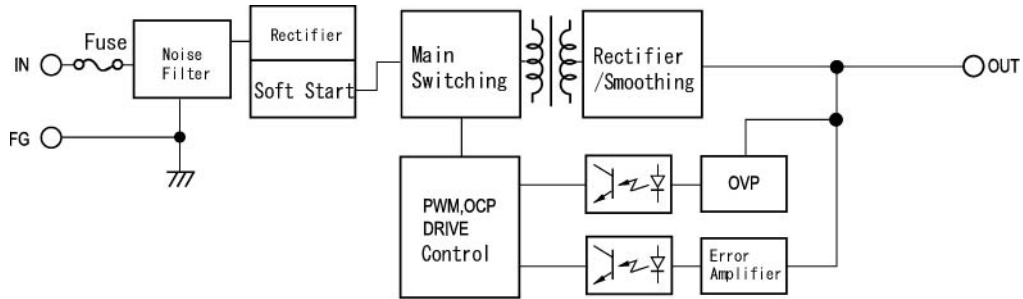
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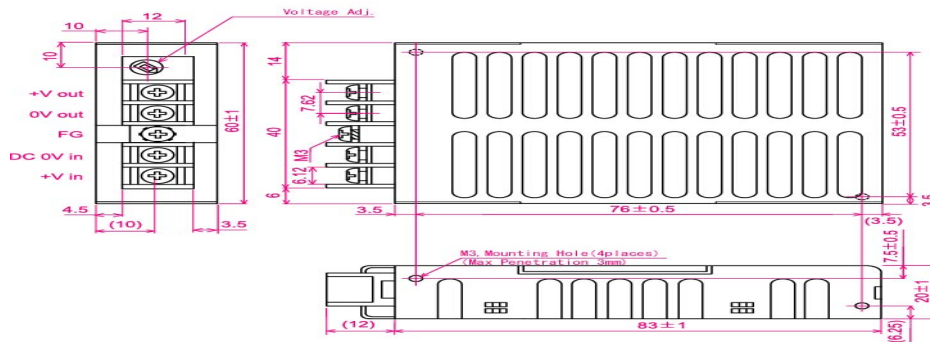
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Block Diagram



Dimension Diagram



SVM-SC/SD

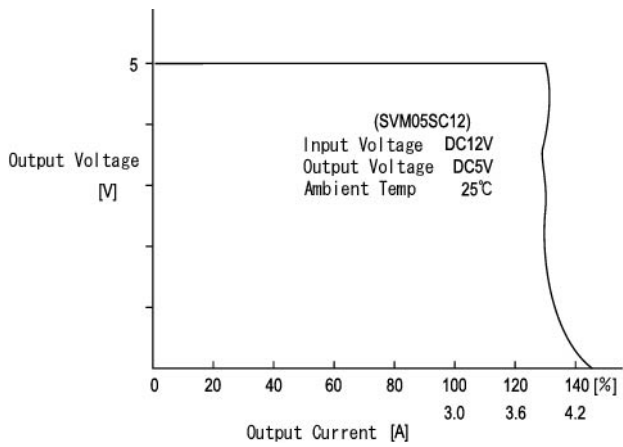
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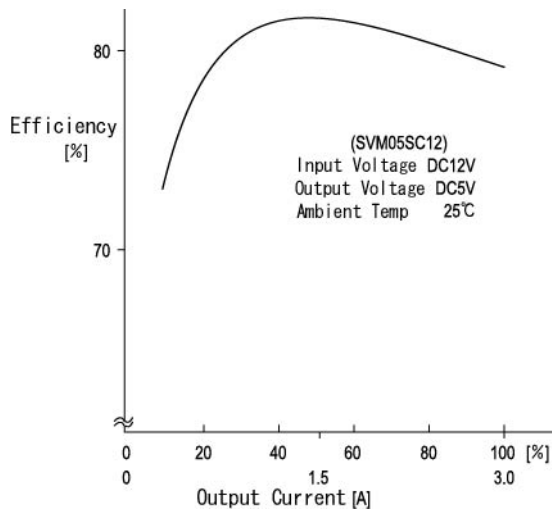
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OCP Curve



Efficiency Curve



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