JAMECO ELECTRONICS **Jameco SKU Number: 217242**

MEAN WELL

30W DC-DC Single Output

SDM30 series

■ Features :

- Wide 2:1 DC input range
- In/out capacitance1000pF
- Protections: Short circuit / Overload / Over voltage
- 1000VDC I/O isolation for D/D
- Cooling by free air convection
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Fixed switching frequency at 225KHz
- Lost cost
- High reliability
- 1 year warranty

CE

SPECIFICATION

MODEL		SDM30-12S3	SDM30-24S3	SDM30-48S3	SDM30-12S5	SDM30-24S5	SDM30-48S5
OUTPUT	DC VOLTAGE	3.3V			5V		
	RATED CURRENT	5A			5A		
	CURRENT RANGE	0 ~ 5A			0 ~ 5A		
	RATED POWER	16.5W			25W		
	RIPPLE & NOISE (max.) Note.2	75mVp-p			75mVp-p		
	VOLTAGE TOLERANCE Note.3	±3.0%			±2.0% max.		
	LINE REGULATION	±1.0%			±1.0%		
	LOAD REGULATION	±1.0%			±1.0%		
	TRIM OUTPUT	±13%(Typ.) output voltage			±10%(Typ.) output voltage		
INPUT	RATED DC INPUT	12S: 12VDC 24S: 24VDC 48S: 48VDC					
	VOLTAGE RANGE	12S: 9.2 ~ 18VDC 24S: 18~ 36VDC 48S: 36~ 72VDC					
	EFFICIENCY (Typ.)	77%	79%	80%	77%	79%	80%
	DC CURRENT	12S:3.6A 24S:2A 48S:1A					
	IDLE CURRENT	12S:35mA 24S/48S:30mA					
PROTECTION	OVERLOAD	Above 105% rated output power					
		Protection type : Over power limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	3.8 ~ 4.95V			5.75 ~ 7.5V		
		Protection type : Shut off o/p voltage, clamping by zener diode					
	SHORT CIRCUIT	Protection type : Constant current limiting, recovers automatically after fault condition is removed					
FUNCTION	ON/OFF CONTROL	Logic "1" or open: power on Logic "0" short to Vin-: power off					
ENVIRONMENT	WORKING TEMP.	-25 ~ +85℃ (Refer to output load derating curve)					
	STORAGE TEMP., HUMIDITY	-25 ~ +85℃, 0 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)					
SAFETY & EMC (Note 6)	SAFETY STANDARDS	Design refer to LVD					
	ISOLATION VOLTAGE	I/P-O/P:1KVDC					
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC					
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B					
	EMS IMMUNITY	Compliance to EN61000-2,3,4,6,8; ENV50204, EN55024, light industry level, criteria A					
OTHERS	MTBF	322.4K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	50.8*50.8*16mm (2"*2"*0.63") (L*W*H)					
	PACKING	0.1Kg; 150pcs/15.8Kg/0.97CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Short circuit not more than 60 second. 5. DC source wires ≧5cm, an input external al capacitor 47 ~ 100uF is required. 6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.						

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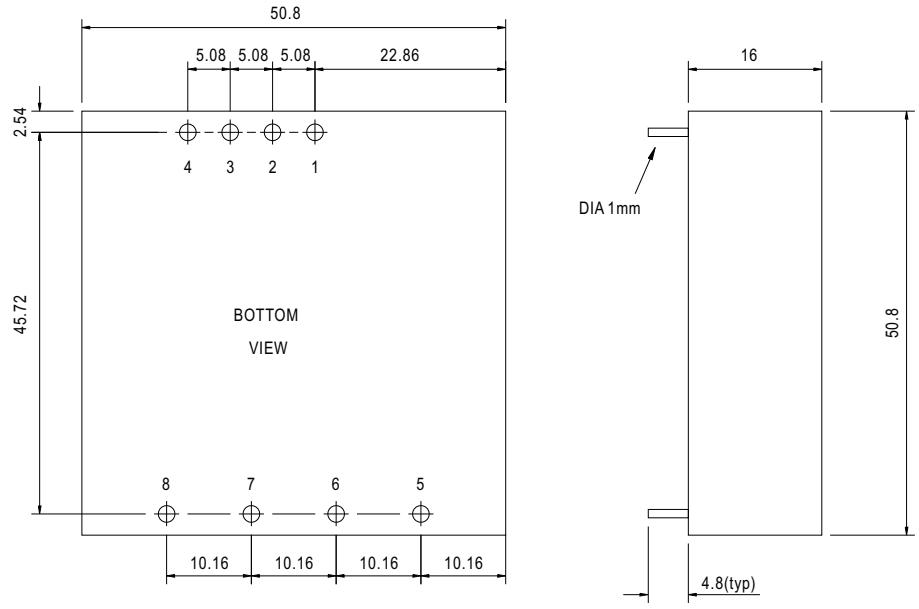
CE

SPECIFICATION

MODEL		SDM30-12S12	SDM30-24S12	SDM30-48S12	SDM30-12S15	SDM30-24S15	SDM30-48S15
OUTPUT	DC VOLTAGE	12V			15V		
	RATED CURRENT	2.1A	2.5A		1.7A	2A	
	CURRENT RANGE	0 ~ 2.1A	0 ~ 2.5A		0 ~ 1.7A	0 ~ 2A	
	RATED POWER	25.2W	30W		25.5W	30W	
	RIPPLE & NOISE (max.) Note.2	100mVp-p			100mVp-p		
	VOLTAGE TOLERANCE Note.3	±2.0% max.			±2.0% max.		
	LINE REGULATION	±1.0%			±1.0%		
	LOAD REGULATION	±1.0%			±1.0%		
	TRIM OUTPUT	±10%(Typ.) output voltage					
INPUT	RATED DC INPUT	12S: 12VDC 24S: 24VDC 48S: 48VDC					
	VOLTAGE RANGE	12S: 9.2 ~ 18VDC 24S: 18~ 36VDC 48S: 36~ 72VDC					
	EFFICIENCY (Typ.)	80%	82%	84%	80%	83%	85%
	DC CURRENT	12S:3.6A 24S:2A 48S:1A					
	IDLE CURRENT	12S:35mA 24S/48S:30mA					
PROTECTION	OVERLOAD	Above 105% rated output power					
		Protection type : Over power limiting, recovers automatically after fault condition is removed					
	OVER VOLTAGE	13.8 ~ 18V			17.25 ~ 22.5V		
		Protection type : Shut off o/p voltage, clamping by zener diode					
	SHORT CIRCUIT	Protection type : Constant current limiting, recovers automatically after fault condition is removed					
FUNCTION	ON/OFF CONTROL	Logic "1" or open: power on Logic "0" short to Vin-: power off					
ENVIRONMENT	WORKING TEMP.	-25 ~ +85℃ (Refer to output load derating curve)					
	STORAGE TEMP., HUMIDITY	-25 ~ +85℃, 0 ~ 95% RH					
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)					
SAFETY & EMC (Note 6)	SAFETY STANDARDS	Design refer to LVD					
	ISOLATION VOLTAGE	I/P-O/P:1KVDC					
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC					
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B					
	EMS IMMUNITY	Compliance to EN61000-2,3,4,6,8; ENV50204, EN55024, light industry level, criteria A					
OTHERS	MTBF	322.4K hrs min. MIL-HDBK-217F (25℃)					
	DIMENSION	50.8*50.8*16mm (2"*2"*0.63") (L*W*H)					
	PACKING	0.1Kg; 150pcs/15.8Kg/0.97CUFT					
NOTE	1. All parameters NOT specially mentioned are measured at 12,24,48VDC input, rated load and 25℃ of ambient temperature. 2. Ripple & noise are measured at 20MHz of bandwidth by using a 12" twisted pair-wire terminated with a 0.1uf & 47uf parallel capacitor. 3. Tolerance : includes set up tolerance, line regulation and load regulation. 4. Short circuit not more than 60 second. 5. DC source wires ≧5cm, an input external al capacitor 47 ~ 100uF is required. 6. The power supply is considered a component which will be installed into a final equipment. The final equipment must be re-confirmed that it still meets EMC directives.						

■ Mechanical Specification

Case No. SDM-30 Unit:mm

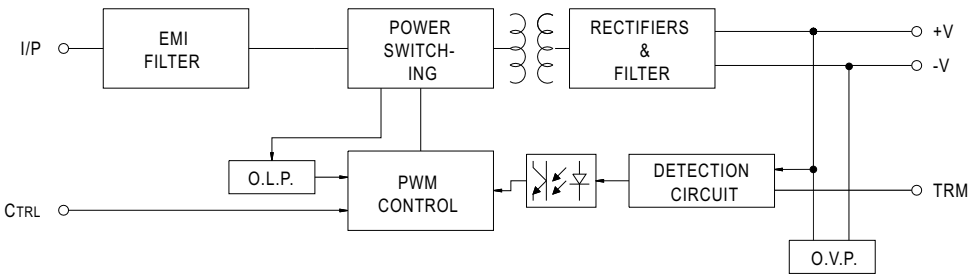


Pin No. Assignment

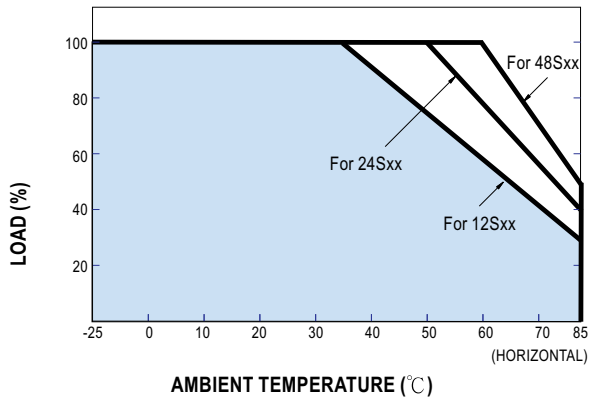
Pin No.	Assignment	Pin No.	Assignment
1	+Vin	6	+Vout
2	-Vin	7	-Vout
3,5	No pin	8	Trim
4	Control ON/OFF		

■ Block Diagram

fosc : 225KHz



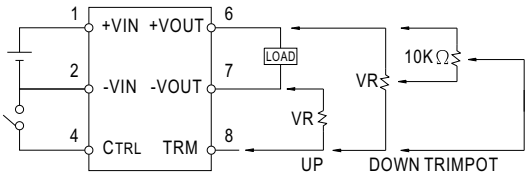
■ Derating Curve



■ External Output Trimming

OUTPUT MAY OPTIONALLY BE EXTERNALLY TRIMMED(±10%)

A FIXED RESISTER OR AN EXTERNAL TRIMPOT AS SHOWN



■ ON/OFF Control Pin

CONTROL INPUT.....PIN4
CONTROL COMMON.....PIN2
LOGIC COMPATIBILITY.....CMOS OR OPEN COLLECTOR TTL
CONTROL VOLTAGE
ON.....+5.5VDC min OR OPEN CIRCUIT
OFF.....+2.5VDC max. OR SHORT TO PIN2

MODEL：SDM30-24S12

OUTPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	RIPPLE & NOISE	V1: 100 mVp-p (Max)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	V1: 11 mVp-p (Max)	P
2	OUTPUT VOLTAGE TOLERANCE	V1: +2 %~ -2 % (Max)	I/P: 18 VDC / 36 VDC O/P:FULL/ MIN LOAD Ta:25℃	V1: 0.06 %~ -0.06 %	P
3	LINE REGULATION	V1: +1 %~ -1 % (Max)	I/P: 18 VDC ~ 36 VDC O/P:FULL LOAD Ta:25℃	V1: 0 %~ -0.06 %	P
4	LOAD REGULATION	V1: +1 %~ -1 % (Max)	I/P: 24 VDC O/P:FULL ~MIN LOAD Ta:25℃	V1: 0.06 %~ -0.06 %	P
5	OVER/UNDERSHOOT TEST	＜±5%	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	TEST: ＜5 %	P
6	DYNAMIC LOAD	V1: 1200 mVp-p	I/P: 24 VDC O/P:FULL /Min LOAD 90%DUTY/1KHZ Ta:25℃	422 mVp-p	P
7	TRI M OUTPUT	V1: 10% output voltage (Typ)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	V1: 13.075V	P

INPUT FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	INPUT VOLTAGE RANGE	18VDC~ 36 VDC	I/P:TESTING O/P:FULL LOAD Ta:25℃	15 V~ 36 V	P
			I/P: LOW-LINE-3V= 15 VDC HIGH-LINE+3%= 37 VDC O/P:FULL/MIN LOAD ON: 30 Sec . OFF: 30 Sec 10MIN (AC POWER ON/OFF NO DAMAGE)	TEST: OK	
2	EFFICIENCY	82 % (TYP)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	82.14 %	P
3	INPUT CURRENT	24 V/ 2 A (Max)	I/P: 24 VDC O/P:FULL LOAD Ta:25℃	I =1.47 A	P
4	IDEL CURRENT	30mA / 24 VDC	I/P: 24 VDC O/P:Min LOAD Ta:25℃	I = 18.96 mA	P

PROTECTION FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	OVER LOAD PROTECTION	> 105 %	I/P: 24 VDC I/P: 18 VAC O/P:TESTING Ta:25℃	110%/ 24 VDC 114%/ 18 VDC Over Power Limiting	P
2	OVER VOLTAGE PROTECTION	CH1: 13.8V~ 18.0 V	I/P: 24 VDC I/P: 18 VAC O/P:MIN LOAD Ta:25℃	16.6V/ 24 VDC 16.6V/ 18 VDC Shunt down Re- power ON	P
3	SHORT PROTECTION	SHORT EVERY OUTPUT 1 HOUR NO DAMAGE	I/P: 36 VDC O/P: 100% LOAD Ta:25℃	NO DAMAGE Constant Current Limiting	P

CONTROL FUNCTION TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	ON/OFF CONTROL	Logic * 1 * or Open POWER ON Logic * 0 * or Short POWER OFF	I/P: 24VDCO/P:FULL LOAD Ta:25℃	Logic * 1 * or Open POWER ON Logic * 0 * or Short POWER OFF	P

ENVIRONMENT TEST

<table>
<tr><th>NO</th><th>TEST ITEM</th><th>SPECICATION</th><th>TEST CONDITION</th><th>RESULT</th><th>VERDICT</th></tr>
<tr><td>1</td><td>TEMPERATURE RISE TEST</td><td colspan="3">MODEL： SDM30-24S5
1. ROOM AMBIENT BURN-IN： 87 HRS
I/P: 24 VDC O/P: 100% LOAD Ta= 27.2 ℃
2. HIGH AMBIENT BURN-IN： 15 HRS
I/P: 24 VDC O/P: 100% LOAD Ta= 48.6 ℃

<table>
<tr><th>NO</th><th>Position</th><th>P/N</th><th>ROOM AMBIENT Ta= 27.2 ℃</th><th>HIGH AMBIENT Ta= 48.6 ℃</th></tr>
<tr><td>1</td><td>U1</td><td>MIC38C43BM</td><td>79.0℃</td><td>95.4℃</td></tr>
<tr><td>2</td><td>Q2</td><td>BJT BCX56 1A/80V</td><td>80.6℃</td><td>96.8℃</td></tr>
<tr><td>3</td><td>Q3</td><td>BJT 2SA1797 –2A/-50V</td><td>80.5℃</td><td>97.2℃</td></tr>
<tr><td>4</td><td>L3</td><td>TR 273</td><td>81.2℃</td><td>97.3℃</td></tr>
<tr><td>5</td><td>L2</td><td>DRS001A</td><td>78.0℃</td><td>94.3℃</td></tr>
<tr><td>6</td><td>D1</td><td>SMD EC11FS2-TE12L</td><td>80.3℃</td><td>96.5℃</td></tr>
<tr><td>7</td><td>C52</td><td>C/E 470u/10V</td><td>79.4℃</td><td>95.5℃</td></tr>
<tr><td>8</td><td>C54</td><td>C/E 33u/10V</td><td>83.3℃</td><td>99.6℃</td></tr>
<tr><td>9</td><td>D50</td><td>SBD DF30SC4M 30A/40V</td><td>84.4℃</td><td>100.4℃</td></tr>
<tr><td>10</td><td>T1core</td><td>CT TS013</td><td>81.6℃</td><td>97.7℃</td></tr>
<tr><td>11</td><td>T1coil</td><td>CT TS013</td><td>83.3℃</td><td>99.8℃</td></tr>
<tr><td>12</td><td>C5</td><td>105/50V</td><td>79.0℃</td><td>95.2℃</td></tr>
<tr><td>13</td><td>L1</td><td>DRS003B</td><td>79.9℃</td><td>96.3℃</td></tr>
<tr><td>14</td><td>T2</td><td>CT TS013</td><td>81.3℃</td><td>97.6℃</td></tr>
<tr><td>15</td><td>Q1</td><td>FET CEB</td><td>82.6℃</td><td>99.1℃</td></tr>
</table></td><td>P</td></tr>
<tr><td>2</td><td>OVER LOAD BURN-IN TEST</td><td>NO DAMAGE
1 HOUR (MIN)</td><td>I/P: 24 VDC
O/P: 120 % LOAD
Ta:25℃</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>3</td><td>LOW TEMPERATURE
TURN ON TEST</td><td>TURN ON AFTER 2 HOUR</td><td>I/P: 24 VDC
O/P: 100 % LOAD
Ta= -8.8 ℃</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>4</td><td>HIGH HUMIDITY
HIGH TEMPERATURE
HIGH VOLTAGE
TURN ON TEST</td><td>AFTER 12 HOURS
IN CHAMBER ON
CONTROL 25 ℃
NO DAMAGE</td><td>I/P: 36 VDC
O/P:FULL LOAD
Ta= 25 ℃
HUMIDITY= 95 %R.H</td><td>TEST： OK</td><td>P</td></tr>
<tr><td>5</td><td>TEMPERATURE
COEFFICIENT</td><td>± 0.03 %(0~50℃)</td><td>I/P: 24 VDC
O/P:FULL LOAD</td><td>± 0.01 %(0~50℃)</td><td>P</td></tr>
</table>

SAFETY TEST

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	WITHSTAND VOLTAGE	I/P-O/P: 1 KVDC/min	I/P-O/P: 1.2 KVDC/min Ta:25℃	I/P-O/P: 0.002 mA NO DAMAGE	P
2	ISOLATION RESISTANCE	I/P-O/P:500VDC>100MΩ	I/P-O/P: 500 VDC Ta:25℃	I/P-O/P: 1.2G Ω NO DAMAGE	P

M.T.B.F & LIFE CYCLE CALCULATION

NO	TEST ITEM	SPECICATION	TEST CONDITION	RESULT	VERDICT
1	MTBF	MIL-HDBK-217F NOTICES2 PARTS COUNT TOTAL FAILURE RATE: 322.4K HRS			P

DATE	SAMPLE	TEST RESULT	TESTER	APPROVAL
2000/09/09	RD SAMPLE	PASS	VINCENT TSENG	MAX LIN
2002/12/7	PRODUCT SAMPLE A211A14	PASS	VINCENT TSENG	MAX LIN

2003/12/12 A50-F023