POWER MATE TECHNOLOGY CO., LTD.

SDS(H)01 SERIES

DC-DC CONVERTER

2:1 WIDE INPUT RANGE
UP TO 1.08 WATTS

RoHS Compliant

FEATURES

- ULTRA SMALL SMD AND DIP PACKAGE, 0.52 x 0.36x 0.40 INCH WITH REGULATED
- SMD PACKAGE QUALIFIED FOR LEADFREE REFLOW SOLDER PROCESS ACCORDING IPC J-STD-020D
- NO MINIMUM LOAD REQUIRED
- CONTINUOUS SHORT CIRCUIT PROTECTION
- 1600VDC INPUT TO OUTPUT ISOLATION AND 3000VDC FOR OPTION
- SAFETY MEETS UL60950-1, EN60950-1 AND IEC60950-1
- CE MARK MEETS 2006/95/EC, 2011/95/EC AND 2004/108/EC
- COMPLIANT TO RoHS EU DIRECTIVE 2011/65/EU

APPLICATIONS

- WIRELESS NETWORK
- TELECOM/DATACOM
- INDUSTRY CONTROL SYSTEM
- MEASUREMENT EQUIPMENT
- SEMICONDUCTOR EQUIPMENT

TECHNICAL SPECIFICATION All specifications are typical at nominal input, full load and 25℃ otherwise noted

Model Number	Input Range VDC	Output Voltage VDC	Output Current @Full Load mA	Input Current @ No Load mA	Efficiency %	Maximum Capacitor Load µF
SDS(H)01-05S3P3	4.5 ~ 9	3.3	300	35	79	1680
SDS(H)01-05S05	4.5 ~ 9	5	200	35	80	820
SDS(H)01-05S12	4.5 ~ 9	12	90	40	83	470
SDS(H)01-05S15	4.5 ~ 9	15	70	40	82	330
SDS(H)01-05S24	4.5 ~ 9	24	45	40	82	160
SDS(H)01-05D05	4.5 ~ 9	±5	±100	40	81	±470
SDS(H)01-05D12	4.5 ~ 9	±12	±45	40	82	±330
SDS(H)01-05D15	4.5 ~ 9	±15	±35	40	82	±220
SDS(H)01-12S3P3	9 ~ 18	3.3	300	16	78	1680
SDS(H)01-12S05	9 ~ 18	5	200	16	79	820
SDS(H)01-12S12	9 ~ 18	12	90	22	82	470
SDS(H)01-12S15	9 ~ 18	15	70	22	81	330
SDS(H)01-12S24	9 ~ 18	24	45	22	80	160
SDS(H)01-12D05	9 ~ 18	±5	±100	22	80	±470
SDS(H)01-12D12	9 ~ 18	±12	±45	22	80	±330
SDS(H)01-12D15	9 ~ 18	±15	±35	22	80	±220
SDS(H)01-24S3P3	18 ~ 36	3.3	300	8	78	1680
SDS(H)01-24S05	18 ~ 36	5	200	8	80	820
SDS(H)01-24S12	18 ~ 36	12	90	10	81	470
SDS(H)01-24S15	18 ~ 36	15	70	10	81	330
SDS(H)01-24S24	18 ~ 36	24	45	10	80	160
SDS(H)01-24D05	18 ~ 36	±5	±100	10	79	±470
SDS(H)01-24D12	18 ~ 36	±12	±45	10	80	±330
SDS(H)01-24D15	18 ~ 36	±15	±35	10	81	±220
SDS(H)01-48S3P3	36 ~ 75	3.3	300	5	79	1680
SDS(H)01-48S05	36 ~ 75	5	200	5	80	820
SDS(H)01-48S12	36 ~ 75	12	90	5	82	470
SDS(H)01-48S15	36 ~ 75	15	70	5	83	330
SDS(H)01-48S24	36 ~ 75	24	45	5	81	160
SDS(H)01-48D05	36 ~ 75	±5	±100	5	80	±470
SDS(H)01-48D12	36 ~ 75	±12	±45	5	81	±330
SDS(H)01-48D15	36 ~ 75	±15	±35	5	81	±220

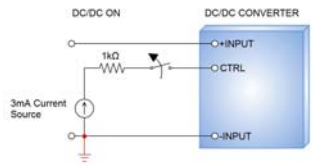
PART NUMBER STRUCTURE

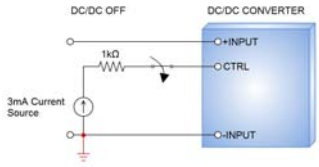
SDS01 - 48 S 05 H

Series Name	Input Voltage (VDC)	Output Quantity	Output Voltage (VDC)	Assembly Option
SDS01: SMD type **SDH01:** DIP type	**05:**4.5~9 **12:** 9~18 **24:**18~36 **48:**36~75	**S:**Single **D:**Dual	**3P3:**3.3 **05:**5 **12:**12 **15:**15 **24:**24 **05:**±5 **12:**±12 **15:**±15	□:Standard **H:**Isolation 3kV

INPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating input voltage range		5Vin(nom)	4.5	5	9	VDC
		12Vin(nom)	9	12	18	
		24Vin(nom)	18	24	36	
		48Vin(nom)	36	48	75	
Start up time	Constant resistive load	Power up		5	10	ms
		Remote ON/OFF		5	10	
Input surge voltage	1 second, max.	5Vin(nom)			15	VDC
		12Vin(nom)			25	
		24Vin(nom)			50	
		48Vin(nom)			100	
Input reflected ripple current(1)		5Vin(nom)		10		mAp-p
		12Vin(nom)		10		
		24Vin(nom)		10		
		48Vin(nom)		10		
Input filter				Capacitor type		
Remote ON/OFF	Referenced to –INPUT pin and CTRL pin applied current	DC-DC ON		Open or high impedance		
		DC-DC OFF	2.0	3.0	4.0	mA
		Remote off input current			2.5	mA





OUTPUT SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Voltage accuracy			-1.0		+1.0	%
Line regulation	Low Line to High Line at Full Load		-0.2		+0.2	%
Load regulation	No Load to Full Load	Single	-1.0		+1.0	%
		Dual	-1.0		+1.0	
	10% Load to 90% Load	Single	-0.5		+0.5	
		Dual	-0.8		+0.8	
Cross regulation	Asymmetrical load 25%/100% FL	Dual	-5.0		+5.0	%
Ripple and noise	Measured by 20MHz bandwidth			50		mVp-p
Temperature coefficient			-0.02		+0.02	%/℃
Transient response recovery time	25% load step change			500		μs
Short circuit protection				Continuous, automatics recovery		

GENERAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Isolation voltage	1 minute	Standard	1600			VDC
		Suffix ”H”	3000			
Isolation resistance	500VDC		1			GΩ
Isolation capacitance		Standard			50	pF
		Suffix ”H”			50	
Switching frequency			100			kHz
Design meet safety standard			IEC60950-1, UL60950-1, EN60950-1			
Case material			Non-conductive black plastic			
Base material			Non-conductive black plastic			
Potting material			Silicone (UL94-V0)			
Dimensions			0.52 X 0.36 X 0.40 Inch (13.2 X 9.1 X10.2 mm)			
Weight			2.7g (0.10oz)			
MTBF	MIL-HDBK-217F Ta=25℃, Full load		8.534 x 10^6 hrs			

ENVIRONMENTAL SPECIFICATIONS

Parameter	Conditions		Min.	Typ.	Max.	Unit
Operating ambient temperature		Without derating	-40		+90	℃
Storage temperature range			-55		+125	℃
Thermal shock			MIL-STD-810F			
Vibration			MIL-STD-810F			
Relative humidity			5% to 95% RH			
Lead-free reflow solder process			IPC J-STD-020D			
Moisture sensitivity level(MSL)			IPC J-STD-033B Level 2			

EMC SPECIFICATIONS

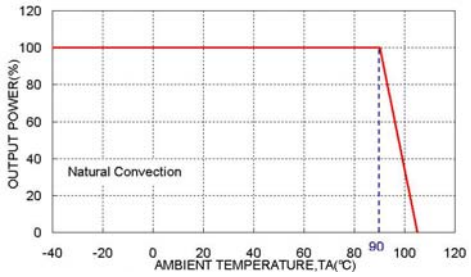
Parameter	Conditions		Level
EMI (1)	EN55022		Class A, Class B
ESD	EN61000-4-2	Air ± 8kV Contact ± 6kV	Perf. Criteria A
Radiated immunity	EN61000-4-3	10 V/m	Perf. Criteria A
Fast transient (2)	EN61000-4-4	± 2kV	Perf. Criteria A
Surge (2)	EN61000-4-5	± 1kV	Perf. Criteria A
Conducted immunity	EN61000-4-6	10 Vr.m.s	Perf. Criteria A

Note:

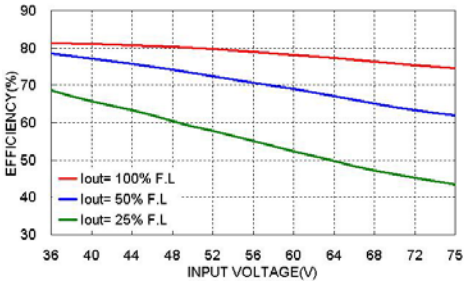
1. The SDS(H)01 series standard module meets EMI Class A or Class B and input reflected ripple current only with external components. For more detail information, please contact with P-DUKE.
2. An external input filter capacitor is required if the module has to meet EN61000-4-4, EN61000-4-5. The filter capacitor Power Mate suggest: Nippon chemi-con KY series, 220 μF/100V.

CAUTION: This power module is not internally fused. An input line fuse must always be used.

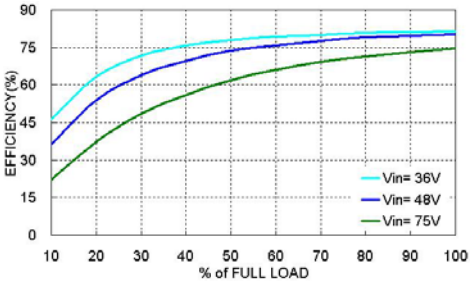
CHARACTERISTIC CURVE



SDS(H)01-48S05 Derating Curve



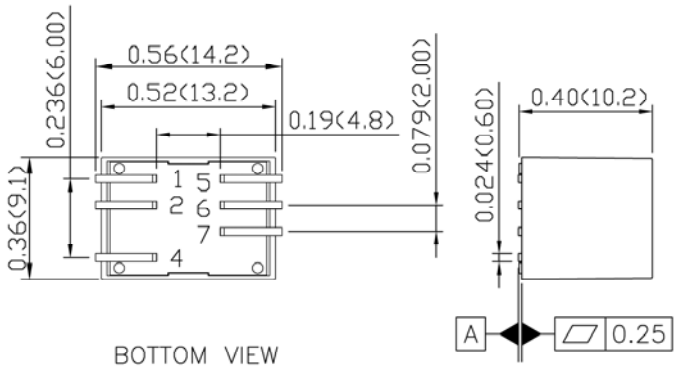
SDS(H)01-48S05 Efficiency VS Input Voltage



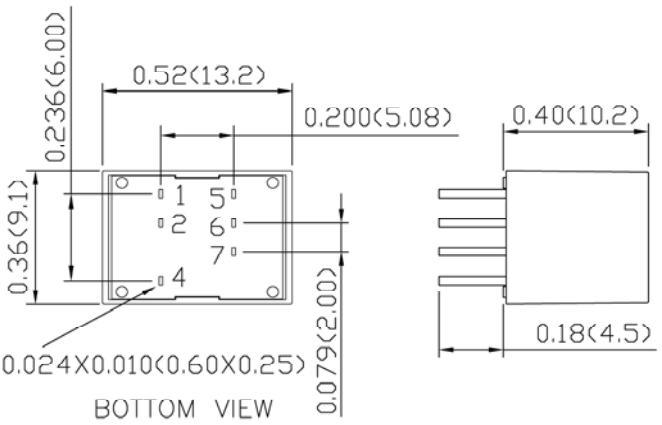
SDS(H)01-48S05 Efficiency VS Output Current

MECHANICAL DRAWING

SMD TYPE (SDS01)



DIP TYPE (SDH01)



PIN CONNECTION

PIN	SINGLE	DUAL
1	+INPUT	+INPUT
2	-INPUT	-INPUT
4	CTRL	CTRL
5	NC	-OUTPUT
6	-OUTPUT	COMMON
7	+OUTPUT	+OUTPUT

1. All dimensions in Inch (mm)
   Tolerance: X.XX±0.02 (X.X±0.5)
   X.XXX±0.01 (X.XX±0.25)
2. Pin pitch tolerance ±0.01(0.25)
3. Pin dimension tolerance ±0.004 (0.1)