Ordering information



SNDH S 50 A 05 -



<ol> <li>Series name</li> </ol>
②Single output
③Output wattage
(4)A: DC60-160V
Output voltage
Optional
C: with Coating
R: with Remote ON/OFF

Please refer to Instruction manual 7.

MODEL SNDHS50A05		SNDHS50A12	SNDHS50A15	SNDHS50A24
MAX OUTPUT WATTAGE[W]	50.0	50.4	51.0	50.4
DC OUTPUT	5V 10A	12V 4.2A	15V 3.4A	24V 2.1A

# **SPECIFICATIONS**

	MODEL		SNDHS50A05	SNDHS50A12	SNDHS50A15	SNDHS50A24		
	VOLTAGE[V]		DC60 - 160					
INPUT	CURRENT[A]	*1	0.55typ	0.55typ	0.55typ	0.55typ		
	EFFICIENCY[%]	*1	83.0typ	85.0typ	85.0typ	85.0typ		
	VOLTAGE[V]		5	12	15	24		
OUTPUT OUTPUTVOTAGE OUTPUT OUTPUTVOTAGE OUTPUT OUTPUTVOTAGE OUTPUTVOT OUTPUTVOTAGE OUTPUT SAFETY ONDUCTED OTHERS OTHERS OTHERS OUTPUT	CURRENT[A]		10	4.2	3.4	2.1		
	LINE REGULATION	mV]	10max	24max	30max	48max		
	LOAD REGULATION	[mV]	150max	100max	100max	100max		
		0 to +95°C *2	80max	120max	120max	120max		
RIPPLE[mVp-p	RIPPLE[mVp-p]	-20 to 0°C *2	120max	150max	150max	150max		
		0 to 15% Load *2	160max	240max	240max	240max		
		0 to +95°C *2	160max	200max	200max	200max		
001701	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	250max	280max	280max	280max		
		0 to 15% Load *2	300max	300max	300max	300max		
TEMP		0 to +50℃	50max	120max	150max	240max		
	TEMPERATURE REGULATION[mV]	-20 to +95℃	100max	240max	300max	480max		
	DRIFT[mV] *3		20max	40max	60max	90max		
	START-UP TIME[ms]		200max (DCIN 110V, lo=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40		
	OUTPUT VOLTAGE SET	TING[V]	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96		
	OVERCURRENT PROT	ECTION	Works over 105% of rating a	and recovers automatically				
PROTECTION	OVERVOLTAGE PROTEC	CTION[V]	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80		
OTHERS	REMOTE SENSING		None					
	REMOTE ON/OFF (R	C)	Optional (Required external	power source)				
	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	1Ω min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	1Ω min (20±15℃)			
ISOLATION	OUTPUT, RC-FG	*5	AC500V 1minute, Cutoff cur	rrent = 100mA, DC500V 50M	Ω min (20±15℃)			
	OUTPUT-RC	*5	AC100V 1minute, Cutoff cur	rrent = 25mA, DC100V 10MS	2 min (20±15℃)			
	OPERATING TEMP., HUMID. AND A	LTITUDE *6	-20 to +95°C (Aluminum base plate	of the power module), 20 - 95%RH (I	Non condensing) (Refer to DERATING	G CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +95℃, 20 - 95%RH (I	Non condensing), 9,000m (30	0,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3	minutes period, 60minutes ea	ach along X, Y and Z axis			
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, onc	e each along X, Y and Z axis				
SAFETY	AGENCY APPROVA	LS	UL60950-1, C-UL, EN60950	D-1				
JAFEIT	CONDUCTED NOISE (at only	/ DC input)	Complies with FCC-A, VCC	I-A, CISPR22-A, EN55011-A	EN55022-A			
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×150mm [2.42>	<1.75×5.91 inches] (W×H>	CD) / 270g max			
UTTERS	COOLING METHOD		Conduction cooling (e.g. hea	at radiation from the aluminu	m base plate to the attached	heat sink)		

At rated input(DC110V) and rated load. \*1

Ripple and ripple noise is measured by using measuring board with capacitor of 22 µ F at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2. \*2

\*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

**\***4 Refer to the instruction manual 4.6.

\*5 \*6 Applicable when remote control (optional) is added. Refer to the instruction manual 6.2.

SNDHS

#### August 11, 2015

SNDHS50A | CO\$EL



Ordering information

# SNDHS100A

100 A 05 SNDH S

3



 Series name
 Single output
 Output wattage (4)A : DC60-160V 5 Output voltage (i) Optional
 C: with Coating
 R: with Remote ON/OFF

-

Please refer to Instruction manual 7.

MODEL	SNDHS100A05	SNDHS100A12	SNDHS100A15	SNDHS100A24	
MAX OUTPUT WATTAGE[W]	100.0	100.8	100.5	100.8	
DC OUTPUT	5V 20A	12V 8.4A	15V 6.7A	24V 4.2A	

# **SPECIFICATIONS**

**RoHS** 

eco

	MODEL		SNDHS100A05	SNDHS100A12	SNDHS100A15	SNDHS100A24		
	VOLTAGE[V]		DC60 - 160					
INPUT	CURRENT[A]	*1	1.1typ	1.1typ	1.1typ	1.1typ		
	EFFICIENCY[%]	*1	84.0typ	87.0typ	87.0typ	87.0typ		
	VOLTAGE[V]		5	12	15	24		
OUTPUT PROTECTION CIRCUIT AND OTHERS R	CURRENT[A]		20	8.4	6.7	4.2		
	LINE REGULATION	mV]	10max	24max	30max	48max		
	LOAD REGULATION	[mV]	150max	100max	100max	100max		
		0 to +95°C *2	80max	120max	120max	120max		
RIPPLE[mV	RIPPLE[mVp-p]	-20 to 0°C *2	120max	150max	150max	150max		
		0 to 15% Load *2	160max	240max	240max	240max		
		0 to +95°C *2	160max	200max	200max	200max		
001701	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	250max	280max	280max	280max		
		0 to 15% Load *2	300max	300max	300max	300max		
		0 to +50°C	50max	120max	150max	240max		
		-20 to +95℃	100max	240max	300max	480max		
	DRIFT[mV] *3		20max	40max	60max	90max		
	START-UP TIME[ms]		200max (DCIN 110V, lo=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40		
	OUTPUT VOLTAGE SET	TING[V]	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96		
	OVERCURRENT PROT	ECTION	Works over 105% of rating a	and recovers automatically				
PROTECTION	OVERVOLTAGE PROTEC	CTION[V]	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80		
OTHERS	REMOTE SENSING		None					
	REMOTE ON/OFF (R	(C)	Optional (Required external	power source)				
	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	1Ω min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	1Ω min (20±15℃)			
ISOLATION	OUTPUT, RC-FG	*5	AC500V 1minute, Cutoff cur	rrent = 100mA, DC500V 50M	Ω min (20±15℃)			
	OUTPUT-RC	*5	AC100V 1minute, Cutoff cur	rrent = 25mA, DC100V 10MS	2 min (20±15℃)			
	OPERATING TEMP., HUMID. AND A	LTITUDE *6	-20 to +95°C (Aluminum base plate	of the power module), 20 - 95%RH (I	Non condensing) (Refer to DERATING	G CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +95℃, 20 - 95%RH (I	Non condensing), 9,000m (30	0,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/s <sup>2</sup> (2G), 3	8 minutes period, 60 minutes e	ach along X, Y and Z axis			
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, onc	e each along X, Y and Z axis	;			
SAFETY	AGENCY APPROVA	LS	UL60950-1, C-UL, EN60950	D-1				
JAFEIT	CONDUCTED NOISE (at only	y DC input)	Complies with FCC-A, VCC	I-A, CISPR22-A, EN55011-A	, EN55022-A			
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×150mm [2.42>	<1.75×5.91 inches] (W×H>	(D) / 270g max			
UTERS	COOLING METHOD		Conduction cooling (e.g. hea	at radiation from the aluminu	m base plate to the attached	heat sink)		

At rated input(DC110V) and rated load. \*1

\*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22 µ F at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.

\*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output.

\*4 Refer to the instruction manual 4.6.

\*5 \*6 Applicable when remote control (optional) is added. Refer to the instruction manual 6.2.

SNDHS

#### August 11, 2015

SNDHS100A COSEL



Ordering information **COSEL** DC-DC Converters Bus Converter · Power Module Value-added Type SNDHS200A 200 A 05 SNDH S -1 Series name
 Single output
 Output wattage (A: DC60-160V **RoHS** 5 Output voltage (i) Optional
 C: with Coating
 R: with Remote ON/OFF eco Please refer to Instruction manual 7.

MODEL SNDHS200A05		SNDHS200A12	SNDHS200A15	SNDHS200A24
MAX OUTPUT WATTAGE[W]	200.0	200.4	201.0	201.6
DC OUTPUT	5V 40A	12V 16.7A	15V 13.4A	24V 8.4A

# **SPECIFICATIONS**

	MODEL		SNDHS200A05	SNDHS200A12	SNDHS200A15	SNDHS200A24		
	VOLTAGE[V]		DC60 - 160					
INPUT	CURRENT[A]	*1	2.1typ	2.1typ	2.1typ	2.1typ		
	EFFICIENCY[%]	*1	87.0typ	87.0typ	87.0typ	87.0typ		
	VOLTAGE[V]		5	12	15	24		
	CURRENT[A]		40	16.7	13.4	8.4		
	MODEL         VOLTAGE[V]         YUT         CURRENT[A]         EFFICIENCY[%]         VOLTAGE[V]         CURRENT[A]         EFFICIENCY[%]         VOLTAGE[V]         CURRENT[A]         LINE REGULATION[mV]         LOAD REGULATION[mV]         LOAD REGULATION[mV]         RIPPLE[mVp-p]         22         DRIFT[mV]         START-UP TIME[ms]         OUTPUT VOLTAGE ADJUSTMENT RAN         OUTPUT VOLTAGE ADJUSTMENT RAN         OUTPUT VOLTAGE SETTIN         OUTPUT VOLTAGE PROTECTI         REMOTE ON/OFF (RC)         NEMOTE SENSING         REMOTE ON/OFF (RC)         NUPUT-OUTPUT, RC         INPUT-G         OUTPUT, RC-FG         OUTPUT, RC-FG         OUTPUT-RC         OPERATING TEMP, HUMID.AND ALTI         YIBRATION         IMPACT         AGENCY APPROVALS         YUBRATION         IMPACT         AGENCY APPROVALS         CONDUCTED NOISE (at only D         HERS	mV]	10max	24max	30max	48max		
	LOAD REGULATION	[mV]	150max	100max	100max	100max		
		0 to +95°C *2	80max	120max	120max	120max		
	RIPPLE[mVp-p]	-20 to 0°C *2	120max	150max	150max	150max		
		0 to 15% Load *2	160max	240max	240max	240max		
OUTPUT		0 to +95°C *2	160max	200max	200max	200max		
001901	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	250max	280max	280max	280max		
		0 to 15% Load *2	300max	300max	300max	300max		
TEMPERATURE REGULATION[m\		0 to +50°C	50max	120max	150max	240max		
		-20 to +95℃	100max	240max	300max	480max		
	DRIFT[mV]	*3	20max	40max	60max	90max		
	START-UP TIME[ms]		200max (DCIN 110V, lo=100%)					
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40		
	OUTPUT VOLTAGE SET	TING[V]	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96		
	OVERCURRENT PROT	ECTION	Works over 105% of rating and recovers automatically					
	OVERVOLTAGE PROTEC	CTION[V]	6.30 - 7.60	13.90 - 16.35	17.25 - 20.25	27.60 - 32.40		
OTHERS	REMOTE SENSING		Provided					
	REMOTE ON/OFF (R	(C)	Optional (Required external	power source)				
	INPUT-OUTPUT, RC	*5	AC3,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	1Ω min (20±15℃)			
	INPUT-FG		AC2,000V 1minute, Cutoff c	current = 15mA, DC500V 50N	IΩ min (20±15℃)			
ISOLATION	OUTPUT, RC-FG	*5	AC500V 1minute, $\overline{\text{Cutoff current} = 100\text{mA}, \text{DC500V 50M}\Omega \text{ min } (20\pm15\degree\text{C})}$					
	OUTPUT-RC	*5	AC100V 1minute, Cutoff cur	rrent = 25mA, DC100V 10MS	⊇ min (20±15℃)			
	OPERATING TEMP., HUMID.AND A	LTITUDE *6	-20 to +95°C (Aluminum base plate	of the power module), 20 - 95%RH (I	Non condensing) (Refer to DERATING	G CURVE), 3,000m (10,000 feet) max		
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +95℃, 20 - 95%RH (I	Non condensing), 9,000m (30	0,000 feet) max			
	ENVIRONMENT STORAGE TEMP., HUMID.AND ALTITUDE		10 - 55Hz, 19.6m/s² (2G), 3r	minutes period, 60minutes ea	ach along X, Y and Z axis			
	IMPACT		196.1m/s <sup>2</sup> (20G), 11ms, onc	ce each along X, Y and Z axis	5			
SAFETV	AGENCY APPROVA	LS	UL60950-1, C-UL, EN60950	D-1				
	CONDUCTED NOISE (at only	y DC input)	Complies with FCC-A, VCC	I-A, CISPR22-A, EN55011-A	, EN55022-A			
OTHERS	CASE SIZE/WEIGHT		74.2×44.5×150mm [2.92>	×1.75×5.91 inches](W×H×	D) / 390g max			
	COOLING METHOD		Conduction cooling (e.g. hea	at radiation from the aluminu	m base plate to the attached	heat sink)		

At rated input(DC110V) and rated load.

Ripple and ripple noise is measured by using measuring board with capacitor of 22 µ F at 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2. \*2

Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output. \*3

\*4 Refer to the instruction manual 4.6.

Applicable when remote control (optional) is added. Refer to the instruction manual 6.2. \*5 \*6

**SNDHS-6** 

SNDHS

#### August 11, 2015

SNDHS200A COSEL



Ordering information

2

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50 B 05 SNDH S

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 Series name
 Single output
 Output wattage () B : DC200-400V 5 Output voltage (i) Optional
 C: with Coating
 R: with a function not to need

external power source

-

MODEL	SNDHS50B03	SNDHS50B05	SNDHS50B12	SNDHS50B15	SNDHS50B24	SNDHS50B28
MAX OUTPUT WATTAGE[W]	33.0	50.0	50.4	51.0	50.4	50.4
DC OUTPUT	3.3V 10A	5V 10A	12V 4.2A	15V 3.4A	24V 2.1A	28V 1.8A

### **SPECIFICATIONS**

**RoHS** 

eco

	MODEL		SNDHS50B03	SNDHS50B05	SNDHS50B12	SNDHS50B15	SNDHS50B24	SNDHS50B28	
	VOLTAGE[V]		DC200 - 400 (Prej	pare another power	r supply to the RC1	terminal *5)			
INPUT	CURRENT[A]	*1	0.15typ	0.22typ	0.22typ	0.22typ	0.22typ	0.22typ	
MOI           INPUT         CUF           EFF         VOL           EUR         CUF           LINE         LOA           OUTPUT         RIPI           OUTPUT         RIPI           DRIF         STA           OUTPUT         DRIF           STA         OUTPU           PROTECTION CIRCUIT AND OTHERS         OVE           ISOLATION         OUT           ISOLATION         OUT           OUT         OUT           SAFETY         AGE           OTHERS         CO           SAFETY         AGE           OTHERS         CO           *1         A trated input(	EFFICIENCY[%]	*1	76.0typ	79.0typ	82.0typ	82.0typ	82.0typ	82.0typ	
OUTPUT INPUT CI CI CI CI LI LI LC CI CI CI CI CI CI CI CI CI C	VOLTAGE[V]		3.3	5	12	15	24	28	
OUTPUT CU EF VO CU LIN LO CU LIN LO CU LIN LO RIF OUTPUT RIP TEM DR ST OUT OU PROTECTION OV CIRCUIT AND OTHERS RE RE ISOLATION OV CIRCUIT AND OTHERS CA OTHERS CA OTHERS CA	CURRENT[A]		10	10	4.2	3.4	2.1	1.8	
	LINE REGULATION	mV]	10max	10max	24max	30max	48max	56max	
	LOAD REGULATION	[mV]	150max	150max	100max	100max	100max	100max	
		0 to +95°C *2	80max	80max	120max	120max	120max	120max	
	RIPPLE[mVp-p]	-20 to 0°C *2	120max	120max	150max	150max	150max	150max	
		0 to 15% Load *2	160max	160max	240max	240max	240max	240max	
		0 to +95°C *2	160max	160max	200max	200max	200max	200max	
001901	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	250max	250max	280max	280max	280max	280max	
		0 to 15% Load *2	300max	300max	300max	300max	300max	300max	
		0 to +50°C	35max	50max	120max	150max	240max	280max	
	TEMPERATURE REGULATION[mV]	-20 to +95℃	66max	100max	240max	300max	480max	560max	
	DRIFT[mV] *3		16max	20max	40max	60max	90max	90max	
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)						
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		2.97 - 3.63	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80	
	OUTPUT VOLTAGE SET	TING[V]	3.30 - 3.40	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12	
	OVERCURRENT PROT	ECTION	Works over 105%	of rating and recov	ers automatically				
PROTECTION	OVERVOLTAGE PROTEC	CTION[V]	4.20 - 5.70	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80	32.20 - 40.60	
OTHERS	REMOTE SENSING		None						
	REMOTE ON/OFF (R	C1) *6	Provided (Logic H	: ON, L :OFF) Req	uired external powe	er source			
	INPUT-OUTPUT, RC2	2 *8	AC3,000V 1minute	e, Cutoff current = "	10mA, DC500V 50N	IΩ min (20±15℃)			
	INPUT-FG		AC2,000V 1minute	e, Cutoff current = <sup>2</sup>	10mA, DC500V 50N	IΩ min (20±15℃)			
ISULATION	OUTPUT, RC2-FG	*8	AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15°C)						
	OUTPUT-RC2	*8	AC100V 1minute,	Cutoff current = 25	mA, DC100V 10M	2 min (20±15℃)			
	OPERATING TEMP., HUMID.AND A	LTITUDE *7	-20 to +95℃ (Aluminun	n base plate of the powe	r module), 20 - 95%RH (l	Non condensing) (Refer t	o DERATING CURVE),	3,000m (10,000 feet) max	
	STORAGE TEMP., HUMID. AND	ALTITUDE	-20 to +95℃, 20 -	95%RH (Non cond	lensing), 9,000m (3	0,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/	s² (2G), 3minutes p	eriod, 60minutes ea	ach along X, Y and	Z axis		
	IMPACT		196.1m/s² (20G), *	11ms, once each a	long X, Y and Z axis	5			
SAFETY	AGENCY APPROVA	LS	UL60950-1, C-UL	EN60950-1					
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×127n	nm [2.42×1.75×5	.0 inches] (W×H×	D) / 220g max			
UTERS	COOLING METHOD		Conduction coolin	g (e.g. heat radiatio	on from the aluminu	m base plate to the	attached heat sink	)	
*1 At rated	input(DC280V) and rated lo	ad.			*6 Refer to the instr	uction manual 4.4			

Ripple and ripple noise is measured by using measuring board with capacitor of 22  $\mu$  F at \*2 150mm [5.91 inches] from output terminal. Refer to the instruction manual 3.2.

Refer to the instruction manual 6.2 \*7

\*8 "RC2" is applicable to an option not to need external power source.

\*3 Drift is the change in DC output for an eight hour period after a half-hour warm-up at  $25^\circ C$ ,

with the input voltage held constant at the rated input/output. Refer to the instruction manual 4.6.

\*4

\*5 Refer to the instruction manual 2, 4.4

SNDHS50B | CO\$EL

in φ4.5 [φ0.177] hole.



Ordering information

# **SNDHS100B**

100 B 05 SNDH S 3 2

-

 Series name
 Single output
 Output wattage () B : DC200-400V **RoHS** 5 Output voltage (i) Optional
 C: with Coating
 R: with a function not to need external power source eco

1

MODEL	SNDHS100B03	SNDHS100B05	SNDHS100B12	SNDHS100B15	SNDHS100B24	SNDHS100B28
MAX OUTPUT WATTAGE[W]	66.0	100.0	100.8	100.5	100.8	100.8
DC OUTPUT	3.3V 20A	5V 20A	12V 8.4A	15V 6.7A	24V 4.2A	28V 3.6A

### **SPECIFICATIONS**

	MODEL		SNDHS100B03	SNDHS100B05	SNDHS100B12	SNDHS100B15	SNDHS100B24	SNDHS100B28	
	VOLTAGE[V]		DC200 - 400 (Pre	pare another power	supply to the RC1	terminal *5)			
INPUT	CURRENT[A]	*1	0.30typ	0.44typ	0.42typ	0.42typ	0.42typ	0.42typ	
	MODEL           VOLTAGE[V]           CURRENT[A]           EFFICIENCY[%]           VOLTAGE[V]           CURRENT[A]           EFFICIENCY[%]           VOLTAGE[V]           CURRENT[A]           LINE REGULATION[mV]           LOAD REGULATION[mV]           LOAD REGULATION[mV]           0t0 +95C           RIPPLE[mVp-p]           -20 to 0'C           0t0 +95C           RIPPLE NOISE[mVp-p]           -20 to 0'C           0 to +95C           RIPPLE NOISE[mVp-p]           -20 to 0'C           0 to +95C           20 to 0'C           0 to +95C           20 to 0'C           0 to 9'S           20 to 0'C           0 to +95C           20 to 0'C           0 to 9'S           20 to 0'C           0 to 9'S           20 to 0'C           0 to 9'S           20 to 9'S           DRIFT[mV]           START-UP TIME[ms]           0UTPUT VOLTAGE ADJUSTMENT RANGE[V]           OVERCURRENT PROTECTION[V]           REMOTE SENSING           REMOTE ON/OFF (RC1)           INPUT-OUTPUT	*1	78.0typ	81.0typ	84.0typ	85.0typ	85.0typ	85.0typ	
OUTPUT C C C C C C C C C C C C C C C C C C C	VOLTAGE[V]		3.3	5	12	15	24	28	
OUTPUT  INPUT  INPUT  CUI  EFF  VOL  CUI  CUI  LIN  LOA  RIP  OUTPUT  RIPF  OUTPUT  RIPF  OUT  OUT  PROTECTION  OVE  CIRCUIT AND  OTHERS  REI  ISOLATION  INP  OUT  OUT  SAFETY  AGI  OTHERS  CO  *1  At rated input	CURRENT[A]		20	20	8.4	6.7	4.2	3.6	
	LINE REGULATION[	mV]	10max	10max	24max	30max	48max	56max	
	LOAD REGULATION	[mV]	150max	150max	100max	100max	100max	100max	
		0 to +95°C *2	80max	80max	120max	120max	120max	120max	
	RIPPLE[mVp-p]	-20 to 0°C *2	120max	120max	150max	150max	150max	150max	
		0 to 15% Load *2	160max	160max	240max	240max	240max	240max	
OUTPUT		0 to +95°C *2	160max	160max	200max	200max	200max	200max	
UUIPUI	RIPPLE NOISE[mVp-p]	-20 to 0°C *2	250max	250max	280max	280max	280max	280max	
		0 to 15% Load *2	300max	300max	300max	300max	300max	300max	
		0 to +50°C	35max	50max	120max	150max	240max	280max	
		-20 to +95℃	66max	100max	240max	300max	480max	560max	
	DRIFT[mV] *3		16max	20max	40max	60max	90max	90max	
	START-UP TIME[ms]		200max (DCIN 280V, lo=100%)						
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		2.97 - 3.63	4.50 - 5.50	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80	
	OUTPUT VOLTAGE SET	ring[v]	3.30 - 3.40	5.00 - 5.15	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12	
	OVERCURRENT PROT	ECTION	Works over 105%	of rating and recover	ers automatically				
PROTECTION	DRIFT[mV] START-UP TIME[ms] OUTPUT VOLTAGE ADJUSTMENT RANGE[ OUTPUT VOLTAGE SETTING OVERCURRENT PROTECT OVERVOLTAGE PROTECTIOI REMOTE SENSING	CTION[V]	4.20 - 5.70	6.30 - 7.60	13.90 - 17.55	17.25 - 21.75	27.60 - 34.80	32.20 - 40.60	
OTHERS	REMOTE SENSING		None						
	RIPPLE[mVp-p]         20 tc           010 4         00 0 fc           RIPPLE NOISE[mVp-p]         20 tc           010 fc         00 fc           RIPPLE NOISE[mVp-p]         20 tc           010 fc         0 tc           010 fc         20 tc           010 fc         0 tc           010 fc         20 tc           010 fc         0 tc           010 fc         20 tc           010 fc         20 tc           010 fc         0 tc<		Provided (Logic H	: ON, L :OFF) Req	uired external powe	r source			
	INPUT-OUTPUT, RC2	*8	AC3,000V 1minute	e, Cutoff current = 1	0mA, DC500V 50N	1Ω min (20±15℃)			
	INPUT-FG		AC2,000V 1minute	e, Cutoff current = 1	0mA, DC500V 50N	1Ω min (20±15℃)			
ISULATION	OUTPUT, RC2-FG	*8	AC500V 1minute,	Cutoff current = 10	0mA, DC500V 50M	Ω min (20±15℃)			
	OUTPUT-RC2	*8	AC100V 1minute,	Cutoff current = 25	mA, DC100V 10MS	2 min (20±15℃)			
	OPERATING TEMP., HUMID. AND A	LTITUDE *7	-20 to +95℃ (Aluminum	h base plate of the power	r module), 20 - 95%RH (1	Non condensing) (Refer t	o DERATING CURVE), 3	3,000m (10,000 feet) max	
	STORAGE TEMP., HUMID.AND	ALTITUDE	-20 to +95℃, 20 -	95%RH (Non cond	ensing), 9,000m (30	0,000 feet) max			
	VIBRATION		10 - 55Hz, 19.6m/	s <sup>2</sup> (2G), 3minutes p	period, 60minutes e	ach along X, Y and	Z axis		
	IMPACT		196.1m/s² (20G), 1	11ms, once each al	ong X, Y and Z axis	;			
SAFETY	AGENCY APPROVA	LS	UL60950-1, C-UL,	EN60950-1					
OTHERS	CASE SIZE/WEIGHT		61.5×44.5×127n	nm [2.42×1.75×5.	0 inches] (W×H×I	D) / 220g max			
	COOLING METHOD		Conduction cooling	g (e.g. heat radiatio	n from the aluminur	n base plate to the	attached heat sink)		
*1 At rated	input(DC280V) and rated lo	ad.			*6 Refer to the instr	uction manual 4.4			

\*2 Ripple and ripple noise is measured by using measuring board with capacitor of  $22 \,\mu$  F at 150mm [5.91 inches] from output terminal. \*7 Refer to the instruction manual 6.2 \*8 "RC2" is applicable to an option not to need external power source.

Refer to the instruction manual 3.2.

Drift is the change in DC output for an eight hour period after a half-hour warm-up at  $25^{\circ}$ C, with the input voltage held constant at the rated input/output. \*3

**\***4 Refer to the instruction manual 4.6.

\*5 Refer to the instruction manual 2, 4.4

SNDHS100B COSEL



Ordering information



250 B 05 SNDH S 2 3

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MODEL	SNDHS250B03	SNDHS250B05	SNDHS250B07	SNDHS250B12	SNDHS250B15	SNDHS250B24	SNDHS250B28	SNDHS250B48
MAX OUTPUT WATTAGE[W]	165.0	250.0	247.5	252.0	247.5	252.0	252.0	249.6
DC OUTPUT	3.3V 50A	5V 50A	7.5V 33A	12V 21A	15V 16.5A	24V 10.5A	28V 9.0A	48V 5.2A

# **SPECIFICATIONS**

	MODEL		SNDHS250B03	SNDHS250B05	SNDHS250B07	SNDHS250B12	SNDHS250B15	SNDHS250B24	SNDHS250B28	SNDHS250B48
	VOLTAGE[V]		DC200 - 400 (Prepare another power supply to the RC1 terminal *5)							
INPUT	CURRENT[A] *1		0.67typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ	1.0typ
	EFFICIENCY[%] *1		86.0typ	88.0typ	86.0typ	86.0typ	86.0typ	86.0typ	86.0typ	87.0typ
	VOLTAGE[V]		3.3	5	7.5	12	15	24	28	48
ουτρυτ	CURRENT[A]		50	50	33	21	16.5	10.5	9.0	5.2
	LINE REGULATION[mV]		10max	10max	20max	24max	30max	48max	56max	96max
	LOAD REGULATION[mV]		150max	150max	150max	100max	100max	100max	100max	100max
	RIPPLE[mVp-p]	0 to +95°C *2	80max	80max	100max	120max	120max	120max	120max	200max
		-20 to 0°C *2	120max	120max	130max	150max	150max	150max	150max	250max
		0 to 15% Load *2	160max	160max	200max	240max	240max	240max	240max	400max
	RIPPLE NOISE[mVp-p]	0 to +95°C *2	160max	160max	200max	200max	200max	200max	200max	250max
		-20 to 0°C *2	250max	250max	280max	280max	280max	280max	280max	400max
		0 to 15% Load *2	300max	300max	300max	300max	300max	300max	300max	500max
	TEMPERATURE REGULATION[mV]	0 to +50℃	35max	50max	70max	120max	150max	240max	280max	480max
		-20 to +95℃	66max	100max	140max	240max	300max	480max	560max	960max
	DRIFT[mV] *3		16max	20max	30max	40max	60max	90max	90max	180max
	START-UP TIME[ms]		200max (DCIN 280V, Io=100%)							
	OUTPUT VOLTAGE ADJUSTMENT RANGE[V] *4		2.97 - 3.63	4.50 - 5.50	6.75 - 8.25	10.80 - 13.20	13.50 - 16.50	21.60 - 26.40	25.20 - 30.80	43.20 - 52.80
	OUTPUT VOLTAGE SETTING[V]		3.30 - 3.40	5.00 - 5.15	7.50 - 7.80	12.00 - 12.48	15.00 - 15.60	24.00 - 24.96	28.00 - 29.12	48.00 - 49.92
PROTECTION CIRCUIT AND OTHERS	OVERCURRENT PROTECTION		Works over 105% of rating and recovers automatically							
	OVERVOLTAGE PROTECTION[V]		4.20 - 4.85	6.30 - 7.30	8.70 - 10.20	13.90 - 16.35	17.25 - 20.25	27.60 - 32.40	32.20 - 37.80	55.20 - 64.80
	REMOTE SENSING		Provided							
	REMOTE ON/OFF (RC1) *6		Provided (Logic H : ON, L :OFF) Required external power source							
ISOLATION	INPUT-OUTPUT, RC2 *8		AC3,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15°C)							
	INPUT-FG		AC2,000V 1minute, Cutoff current = 10mA, DC500V 50M $\Omega$ min (20±15°C)							
	OUTPUT, RC2-FG *8		AC500V 1minute, Cutoff current = 100mA, DC500V 50M $\Omega$ min (20±15°C)							
	OUTPUT-RC2 *8		AC100V 1minute, Cutoff current = 25mA, DC100V 10M $\Omega$ min (20±15°C)							
ENVIRONMENT	OPERATING TEMP., HUMID. AND ALTITUDE *7		-20 to +95°C (Aluminum base plate of the power module), 20 - 95%RH (Non condensing) (Refer to DERATING CURVE), 3,000m (10,000 feet) max							
	STORAGE TEMP., HUMID. AND ALTITUDE		-20 to +95°C, 20 - 95%RH (Non condensing), 9,000m (30,000 feet) max							
	VIBRATION		10 - 55Hz, 19.6m/s² (2G), 3minutes period, 60minutes each along X, Y and Z axis							
	IMPACT		196.1m/s² (20G), 11ms, once each along X, Y and Z axis							
SAFETY	AGENCY APPROVA	UL60950-1, C-UL, EN60950-1								
OTHERS	CASE SIZE/WEIGHT		74.2×44.5×127mm [2.92×1.75×5.0 inches](W×H×D) / 310g max							
	COOLING METHOD		Conduction cooling (e.g. heat radiation from the aluminum base plate to the attached heat sink)							
<ul> <li>*1 At rated input(DC280V) and rated load.</li> <li>*6 Refer to the instruction manual 4.4</li> <li>*2 Ripple and ripple noise is measured by using measuring board with capacitor of 22 µ F at</li> <li>*6 Refer to the instruction manual 6.2</li> </ul>										

150mm [5.91 inches] from output terminal.

\*8 "RC2" is applicable to an option not to need external power source.

Refer to the instruction manual 3.2. Drift is the change in DC output for an eight hour period after a half-hour warm-up at 25°C, with the input voltage held constant at the rated input/output. Refer to the instruction manual 4.6.

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\*5 Refer to the instruction manual 2, 4.4

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