

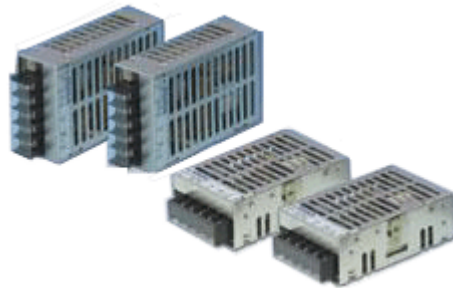


# ETA-USA

## HIGH QUALITY SWITCHING POWER SUPPLIES

DC/DC SWITCHING POWER SUPPLY  
DC INPUT 12, 24, 48, 110  
SINGLE OUTPUT  
100 WATTS

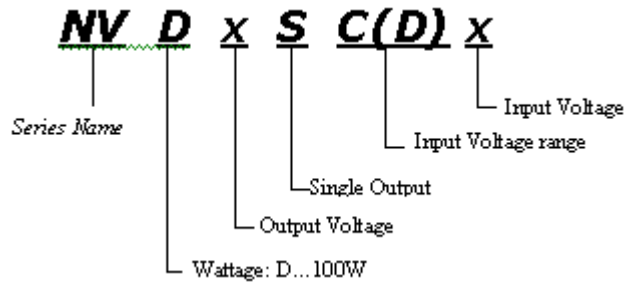
# NVDxSCx / NVDxSD SERIES



65(W)x101(D)x34(H) mm(Not include output terminal)



### General Description



### Features

1. Light weight, compact size
2. High efficiency, high reliability
3. Input under voltage protection
5. Over current, over voltage, thermal protection
6. UL, cUL, CE

### DC INPUT: 12V

Input Characteristics	Unit	Models				
		NVD3.3SC12	NVD05SC12	NVD12SC12	NVD15SC12	NVD24SC12
Input Voltage	Vdc	12				
Input Voltage Range	vdc	9.6-16				
Input Current at full-load	A	6.18	8.33	8.24	8.33	8.26
Efficiency (typical)	%	89	90	91	90	92
MTBF	H	495'000	495'000	560'000	576'000	549'000
Switching Frequency	kHz	125fix.				

### DC INPUT: 24V

Input Characteristics	Unit	Models				
		NVD3.3SC24	NVD05SC24	NVD12SC24	NVD15SC24	NVD24SC24
Input Voltage	Vdc	24				
Input Voltage Range	vdc	19-32				
Input Current at full-load	A	3.3	4.53	4.89	4.75	5.4
Efficiency (typical)	%	90	92	92	92	92
MTBF	H	496'000	496'000	555'000	571'000	556'000
Switching Frequency	kHz	125fix.				

### DC INPUT: 48V

Input Characteristics	Unit	Models				
		NVD3.3SC48	NVD05SC48	NVD12SC48	NVD15SC48	NVD24SC48
Input Voltage	Vdc	48				
Input Voltage Range	vdc	38V-63				
Input Current at full-load	A	1.65	2.24	2.39	2.33	2.64
Efficiency (typical)	%	91	93	94	94	94
MTBF	H	554'000	554'000	554'000	569'000	562'000
Switching Frequency	kHz	125fix.				





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## HIGH QUALITY SWITCHING POWER SUPPLIES

**DC INPUT: 110V**

Input Characteristics	Unit	Models				
		NVD3.3SD	NVD05SD	NVD12SD	NVD15SD	NVD24SD
Input Voltage	Vdc	110				
Input Voltage Range	vdc	85~140				
Input Current at full-load	A	0.725	0.977	1.055	1.02	1.16
Efficiency (typical) *1	%	91	93	93	93	94
MTBF	H	480'000	480'000	550'000	550'000	550'000
Switching Frequency	kHz	91fix.	125fix.			

Output Characteristics	Unit	Models				
		NVD3.3Sx	NVD05Sx	NVD12Sx	NVD15Sx	NVD24Sx
Output Voltage	Vdc	3.3	5	12	15	24
Output Current	A	22.0	20.0	9.0	7.0	5.0
Output Current(for NVDxSC12)	A	20.0	18.0	7.5	6.0	3.8
Voltage Adjust Range	%	±10% of Rated Output Voltage				
Ripple and Noise(max.) *2	mV	150	150	220	250	350
<b>Regulation</b>						
a. Statistic Line Regulation	mV	26	40	96	120	190
b. Statistic Load Regulation	mV	30	45	108	135	216
c. Temperature Coefficient *3	%/°C	0.03 % / °C				
d. Drift *4	mV	32	40	75	90	135
e. Dynamic Load Regulation *5	mV	±150	±200	±360	±450	±720
f. Recovery Time *5	mS	20				
Rise up time	mS	200mS(500mS for NVDxSD Series)(maximum) at 25C and rated input/output				

\*1 at DC 12, 24, 48, 110V and rated output

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

\*3 at -10 to +71C

\*4 for 7hour period after 1hour warm-up at 25C and rated input/output

\*5 when output current changed between 25% and 75% of rated output current rapidly at rated input

\*6 Latch timer type ( For NVDxSD: Output turns to hiccup mode when output drops after over-load )

Function/Protection	
Over current Protection *6	Current Limitting
Over voltage Protection	Latch Type (output shutdown)
Input Voltage Protection	Output shutdown when input voltage remains under the input range for 3 seconds (typ.)
Thermal Protection	Output shutdown when input voltage remains under the input range for 3 seconds (typ.)
Remote Sense	not available
Remote On/Off	not available
<b>Input fuse is installed in unit</b>	
Common mode filter is installed at the input side of unit	
Environmental Specification	
Operating Temperature	-10 to 71°C
Derating	3.5%/C(50C to 71C)
Operating Humidity	20-80%/RH (non-condensing)
Storage Temperature	-20 to +85°C
Storage Humidity	20 to 90%/RH
Withstanding Voltage	Primary-Secondary AC2,000V at 10mA for 1minute/Primary-Frame Ground AC2,000V at 10mA for 1minute/Secondary-Frame Ground AC1,000V at 10mA for 1minute
Isolation Resistance	Primary-Secondary-Frame Ground 50M ohm(minimum) by DC500V insulation tester
Vibration	5-10Hz:10mm double amplitude,10-55Hz:19.6m/s <sup>2</sup> ,20minutes' period for 30minutes each along X,Y,Z axes(non-operating)
Shock	196m/s <sup>2</sup>
Cooling	Convection
Line Conduction Noise	Not specified
Environmental Agencies	
SAFETY	UL60950,C-UL(CSA60950),CE
Mechanical Specification	
Dimension [mm]	65(W)x101(D)x34(H) mm(Not include output terminal)
Weight (typical)	250g



ETA USA

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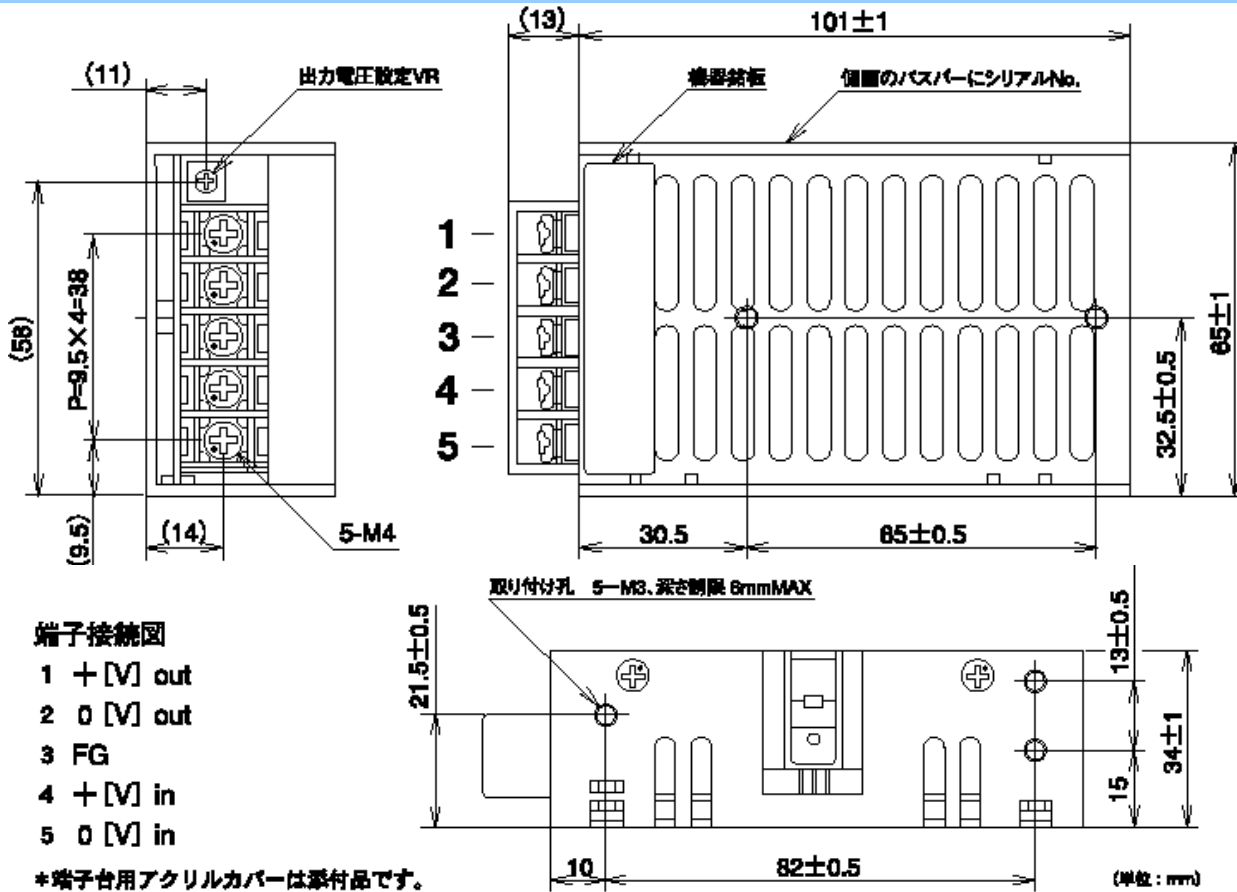
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## HIGH QUALITY SWITCHING POWER SUPPLIES

### DIMENSION DIAGRAM



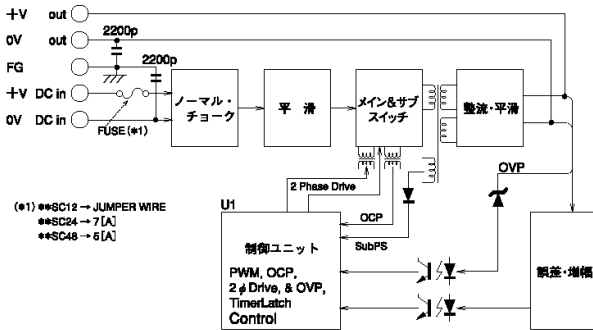
#### 端子接続図

- 1 + [V] out
- 2 0 [V] out
- 3 FG
- 4 + [V] in
- 5 0 [V] in

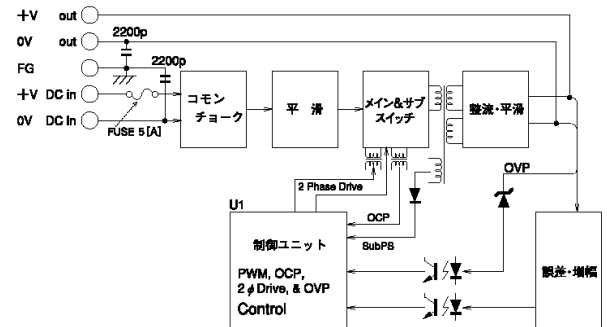
\*端子台用アクリルカバーは添付品です。

### BLOCK DIAGRAM

#### A. NVDxSCx BLOCK DIAGRAM



#### B. NVDxSD BLOCK DIAGRAM



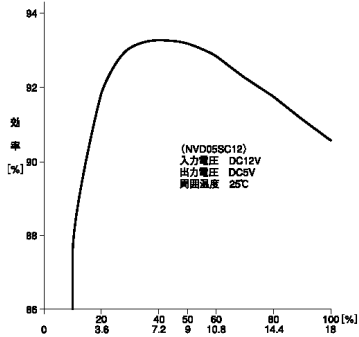


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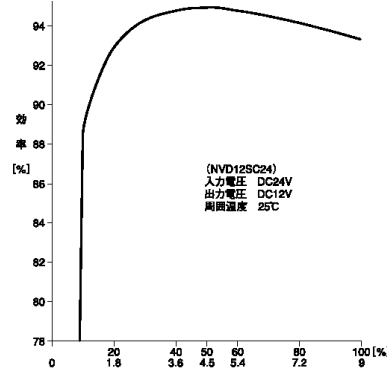
## HIGH QUALITY SWITCHING POWER SUPPLIES

### EFFICIENCY CURVE

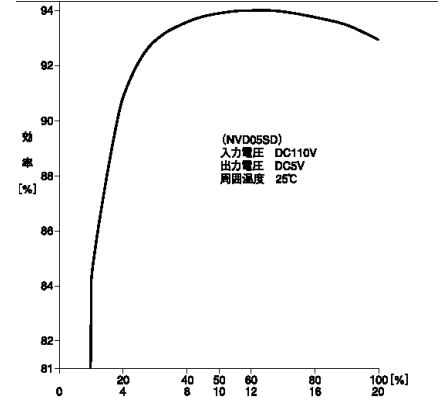
#### A. NVDxSC12



#### B. NVDxSC24

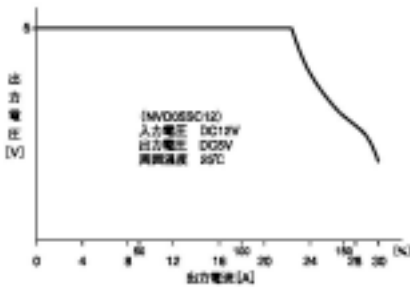


#### C. NVDxSD

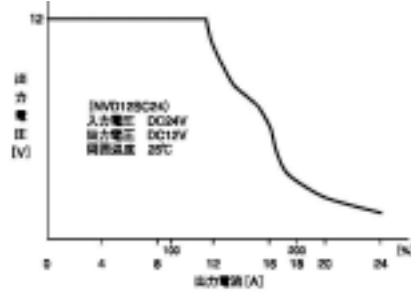


### OCP CURVE

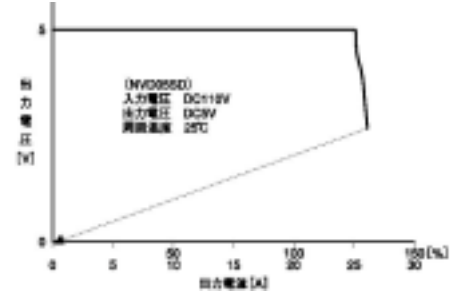
#### A. NVDxSC12



#### B. NVDxSC24



#### C. NVDxSD



### DERATING CURVE

