MEAN WELL

10W DC-DC Regulated Single Output

NSD10-S series

■ Features :

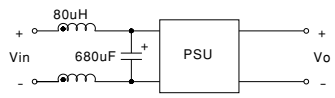
- Wide 4:1 DC input range
- Protections: Short circuit / Overload / Over voltage
- 1500VDC I/O isolation
- Built-in EMI filter
- Cooling by free air convection
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Lost cost
- High reliability
- 2 years warranty

SPECIFICATION

MODEL		NSD10-12S3	NSD10-12S5	NSD10-12S9	NSD10-12S12	NSD10-12S15	NSD10-48S3	NSD10-48S5	NSD10-48S9	NSD10-48S12	NSD10-48S15
OUTPUT	DC VOLTAGE	3.3V	5V	9V	12V	15V	3.3V	5V	9V	12V	15V
	RATED CURRENT	2.5A	2A	1.1A	0.83A	0.67A	2.5A	2A	1.1A	0.83A	0.67A
	CURRENT RANGE	0.12 ~ 2.5A	0.1 ~ 2A	0.05 ~ 1.1A	0.04 ~ 0.83A	0.03 ~ 0.67A	0.12 ~ 2.5A	0.1 ~ 2A	0.05 ~ 1.1A	0.04 ~ 0.83A	0.03 ~ 0.67A
	RATED POWER	8.25W	10W	9.9W	9.96W	10.05W	8.25W	10W	9.9W	9.96W	10.05W
	RIPPLE & NOISE (max.) Note.2	75mVp-p									
	VOLTAGE TOLERANCE Note.3	±2.0% max.									
	LINE REGULATION	±1.0%									
	LOAD REGULATION	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%	±2.0%	±1.0%	±1.0%	±1.0%	±1.0%
INPUT	RATED DC INPUT	12VDC					48VDC				
	VOLTAGE RANGE	9.8 ~ 36VDC					22 ~ 72VDC				
	EFFICIENCY (Typ.)	72%	75%	78%	79%	80%	74%	77%	78%	79%	80%
	DC CURRENT	1.4A/12VDC					0.4A/48VDC				
	SHUTDOWN IDLE CURRENT	20mA/12VDC									
PROTECTION	OVERLOAD	Above 105% rated output power									
		Protection type : Over power limiting, recovers automatically after fault condition is removed									
	OVER VOLTAGE(CLAMP)	3.8 ~ 4.95V	5.75 ~ 7.5V	10.4 ~ 13.5V	13.8 ~ 18V	17.3 ~ 22.5V	3.8 ~ 4.95V	5.75 ~ 7.5V	10.4 ~ 13.5V	13.8 ~ 18V	17.3 ~ 22.5V
	SHORT CIRCUIT Note.4	Recovers automatically after fault condition is removed									
FUNCTION	ON/OFF CONTROL	Logic "1" OPEN: ON logic "0" GND: OFF									
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃									
	WORKING HUMIDITY	0% ~ 95% RH max.									
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 0 ~ 95% RH									
	TEMP. COEFFICIENT	±0.03%/℃ (0~60℃)									
SAFETY & EMC (Note 5)	SAFETY STANDARDS	UL60950-1 Approved, Design refer to TUV EN60950-1									
	ISOLATION VOLTAGE	I/P-O/P:1.5KVDC									
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC 25℃ 70%RH									
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B									
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; EN55024, Light industry level, criteria A									
OTHERS	MTBF	2138.2K hrs min. MIL-HDBK-217F (25℃)									
	DIMENSION	25.4*50.8*10mm (1"*2"*0.394") (L*W*H)									
	PACKING	0.02Kg; 300pcs/7Kg/0.97CUFT									

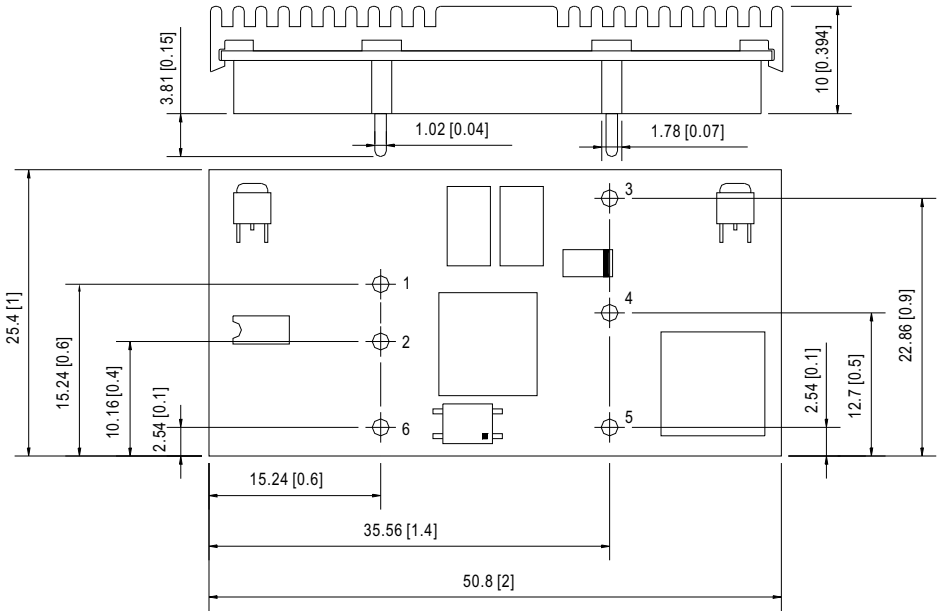
NOTE

1. All parameters NOT specially mentioned are measured at 12, 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 seconds.
5. 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.
6. For the input line, a 220uF/100V electrolytic capacitor with Esr<1 Ω is used in the test.
7. EMC filter suggestion:



■ Mechanical Specification

Unit:mm[inch]

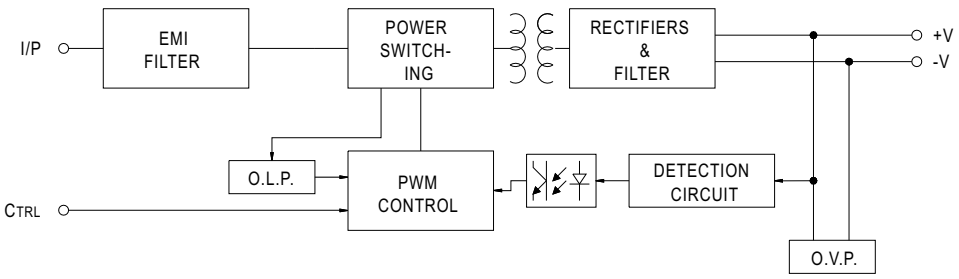


Pin. No Assignment

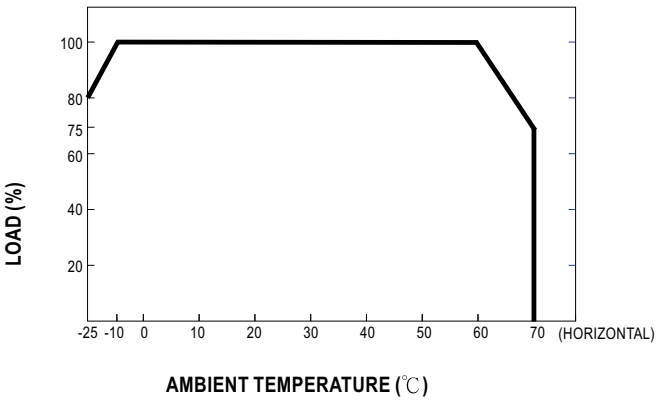
Pin No.	Assignment	Pin No.	Assignment
1	+INPUT	4	N/C
2	-INPUT(GND)	5	-OUT
3	+OUT	6	CONTROL

■ Block Diagram

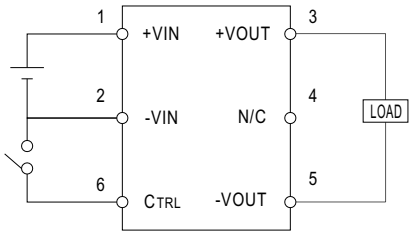
fosc : 350KHz



■ Derating Curve



■ ON/OFF Control



CONTROL INPUT.....PIN6

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

MEAN WELL

10W DC-DC Regulated Dual Output

NSD10-D series

■ Features :

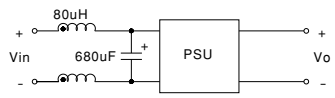
- Wide 4:1 DC input range
- Protections: Short circuit / Overload / Over voltage
- 1500VDC I/O isolation
- Built-in EMI filter
- Cooling by free air convection
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Lost cost
- High reliability
- 2 years warranty

SPECIFICATION

MODEL		NSD10-12D5		NSD10-12D12		NSD10-12D15		NSD10-48D5		NSD10-48D12		NSD10-48D15	
OUTPUT	DC VOLTAGE	5V	-5V	12V	-12V	15V	-15V	5V	-5V	12V	-12V	15V	-15V
	RATED CURRENT	1A	1A	0.42A	0.42A	0.33A	0.33A	1A	1A	0.42A	0.42A	0.33A	0.33A
	CURRENT RANGE	0.05 ~ 1A	0.05 ~ 1A	0.02 ~ 0.42A	0.02 ~ 0.42A	0.016 ~ 0.33A	0.016 ~ 0.33A	0.05 ~ 1A	0.05 ~ 1A	0.02 ~ 0.42A	0.02 ~ 0.42A	0.016 ~ 0.33A	0.016 ~ 0.33A
	RATED POWER	10W											
	RIPPLE & NOISE (max.) Note.2	75mVp-p(10% ~ 100% load)											
	VOLTAGE TOLERANCE Note.3	±4.0%		±2.0%		±2.0%		±3.0%		±2.0%		±2.0%	
	LINE REGULATION	±1.0%											
	LOAD REGULATION	±3.0%		±2.0%		±1.0%		±2.0%		±2.0%		±1.0%	
INPUT	RATED DC INPUT	12VDC						48VDC					
	VOLTAGE RANGE	9.8 ~ 36VDC						22 ~ 72VDC					
	EFFICIENCY (Typ.)	76%		77%		77%		78%		77%		77%	
	DC CURRENT	1.4A/12VDC						0.4A/48VDC					
	SHUTDOWN IDLE CURRENT	20mA/12VDC											
PROTECTION	OVERLOAD	Above 105% rated output power											
		Protection type : Over power limiting, recovers automatically after fault condition is removed											
	OVER VOLTAGE(CLAMP)	5.75 ~ 7.5V	-5.75 ~ -7.5V	13.8 ~ 18V	-13.8 ~ -18V	17.3 ~ 22.5V	-17.3 ~ -22.5V	5.75 ~ 7.5V	-5.75 ~ -7.5V	13.8 ~ 18V	-13.8 ~ -18V	17.3 ~ 22.5V	-17.3 ~ -22.5V
	SHORT CIRCUIT Note.4	Recovers automatically after fault condition is removed											
FUNCTION	ON/OFF CONTROL	Logic "1" OPEN: ON logic "0" GND: OFF											
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃											
	WORKING HUMIDITY	0% ~ 95% RH max.											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 0 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0~60℃)											
SAFETY & EMC (Note 5)	SAFETY STANDARDS	UL60950-1 Approved, Design refer to TUV EN60950-1											
	ISOLATION VOLTAGE	I/P-O/P:1.5KVDC											
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC 25℃ 70%RH											
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B											
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; EN55024, Light industry level, criteria A											
OTHERS	MTBF	1878.5K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	25.4*50.8*10mm (1"*2"*0.394") (L*W*H)											
	PACKING	0.02Kg; 300pcs/7Kg/0.97CUFT											

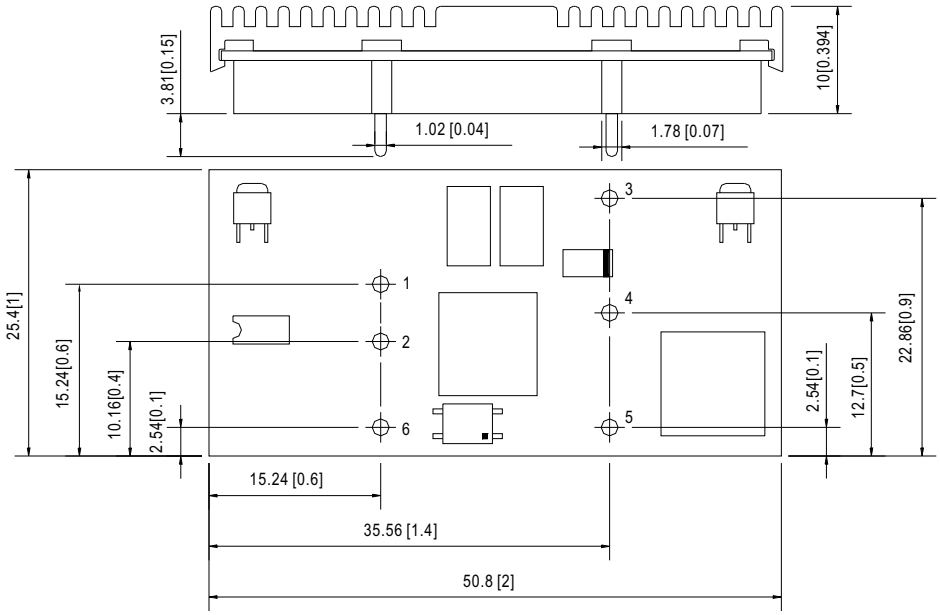
NOTE

1. All parameters NOT specially mentioned are measured at 12, 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 seconds.
5. 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.
6. For the input line, a 47uF/100V electrolytic capacitor with Esr<1 Ω is used in the test.
7. EMC filter suggestion:



■ Mechanical Specification

Unit:mm[inch]

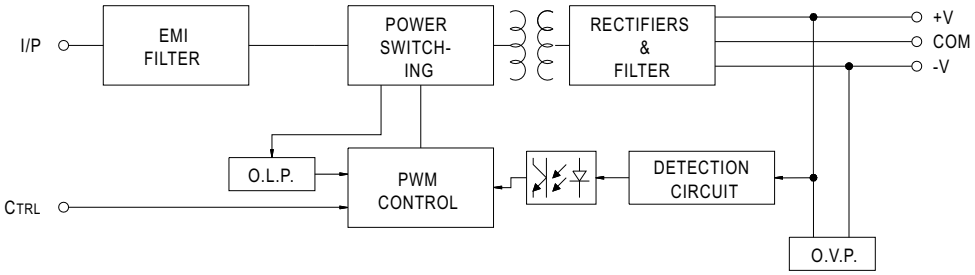


Pin. No Assignment

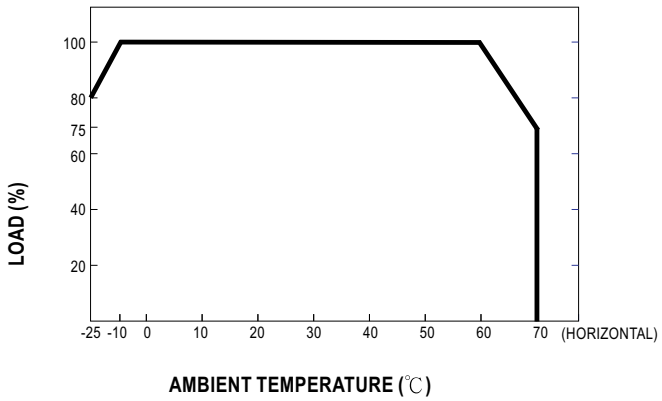
Pin No.	Assignment	Pin No.	Assignment
1	+INPUT	4	COMMON
2	-INPUT(GND)	5	-OUT
3	+OUT	6	CONTROL

■ Block Diagram

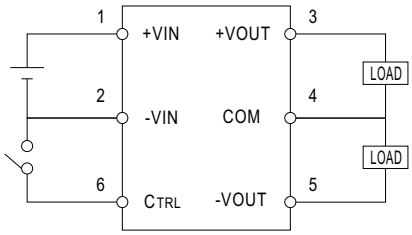
fosc : 350KHz



■ Derating Curve



■ ON/OFF Control



CONTROL INPUT.....PIN6

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

15W DC-DC Regulated Single Output

NSD15-S series

Features :

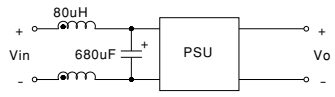
- Wide 4:1 DC input range
- Protections: Short circuit / Overload / Over voltage
- 1500VDC I/O isolation
- Built-in EMI filter
- Cooling by free air convection
- Output voltage trimming function
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Lost cost
- High reliability
- 2 years warranty

SPECIFICATION

MODEL		NSD15-12S3	NSD15-12S5	NSD15-12S12	NSD15-12S15	NSD15-48S3	NSD15-48S5	NSD15-48S12	NSD15-48S15
OUTPUT	DC VOLTAGE	3.3V	5V	12V	15V	3.3V	5V	12V	15V
	RATED CURRENT	3.75A	3A	1.25A	1A	3.75A	3A	1.25A	1A
	CURRENT RANGE	0.18 ~ 3.75A	0.15 ~ 3A	0.06 ~ 1.25A	0.05 ~ 1A	0.18 ~ 3.75A	0.15 ~ 3A	0.06 ~ 1.25A	0.05 ~ 1A
	RATED POWER	12.37W	15W	15W	15W	12.37W	15W	15W	15W
	RIPPLE & NOISE (max.) Note.2	100mVp-p(25% ~ 100% load) for 3.3V only			75mVp-p(25% ~ 100% load)				
	VOLTAGE TOLERANCE Note.3	±2.0%							
	LINE REGULATION	±1.0% at 10% ~ 100% load							
	LOAD REGULATION	±1.0% at 10% ~ 100% load							
INPUT	RATED DC INPUT	12VDC				48VDC			
	VOLTAGE RANGE	9.4 ~ 36VDC				18 ~ 72VDC			
	EFFICIENCY (Typ.)	73%	77%	81%	81%	77%	81%	84%	85%
	DC CURRENT	1.8A/12VDC				0.4A/48VDC			
	SHUTDOWN IDLE CURRENT	20mA							
PROTECTION	OVERLOAD	Above 105% rated output power							
		Protection type : Over power limiting, recovers automatically after fault condition is removed							
	OVER VOLTAGE(CLAMP)	5.8 ~ 6.93V	5.8 ~ 7.5V	13.8 ~ 18V	17.25 ~ 22.5V	5.61 ~ 6.93V	5.5 ~ 7.5V	13.8 ~ 18V	17.25 ~ 22.5V
	SHORT CIRCUIT Note.4	Recovers automatically after fault condition is removed							
FUNCTION	ON/OFF CONTROL	Logic "1" OPEN: ON, logic "0" GND: OFF							
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃							
	WORKING HUMIDITY	0% ~ 95% RH max.							
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 0 ~ 95% RH							
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)							
SAFETY & EMC (Note 5)	SAFETY STANDARDS	Design refer to UL60950-1, TUV EN60950-1							
	ISOLATION VOLTAGE	I/P-O/P:1.5KVDC							
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC 25℃ 70%RH							
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B							
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; EN55024, Light industry level, criteria A							
OTHERS	MTBF	1734K hrs min. MIL-HDBK-217F (25℃)							
	DIMENSION	38.1*50.8*9.82mm (1.5"*2"*0.387") (L*W*H)							
	PACKING	0.03Kg; 180pcs/6.4Kg/0.97CUFT							

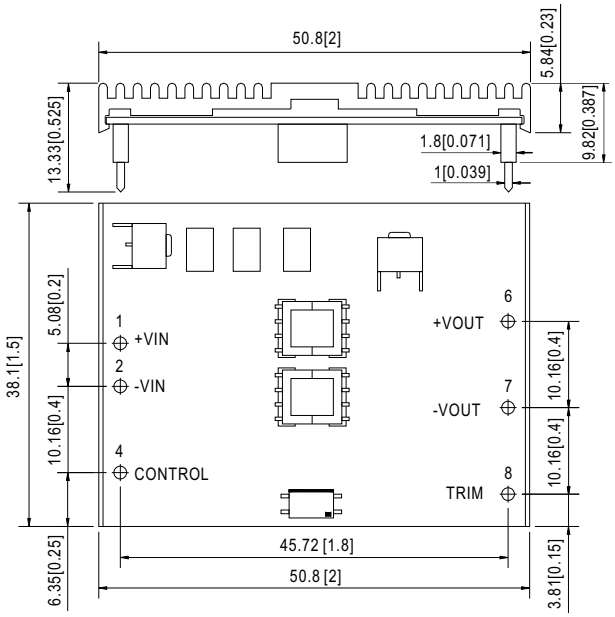
NOTE

1. All parameters NOT specially mentioned are measured at 12,48VDC 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. 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.
6. EMC filter suggestion:



■ Mechanical Specification

Unit:mm[inch]

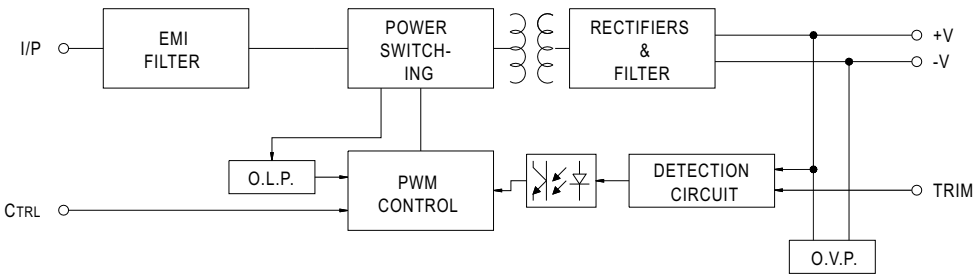


Pin No. Assignment

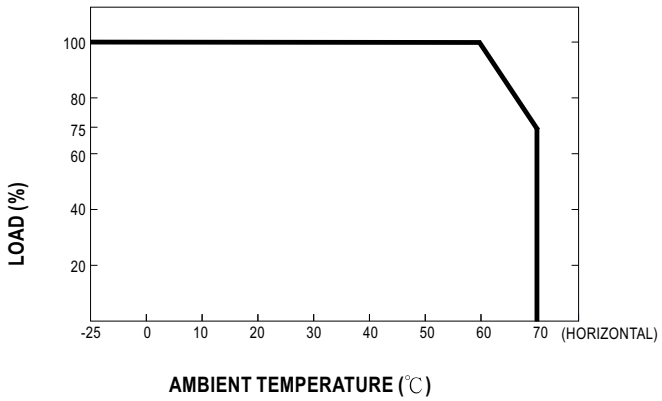
Pin No.	Assignment	Pin No.	Assignment
1	+VIN	6	+VOUT
2	-VIN	7	-VOUT
3,5	No Pin	8	TRIM
4	CONTROL		

■ Block Diagram

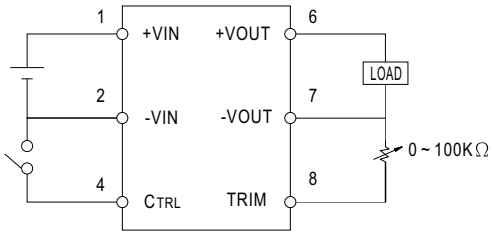
fosc : 400KHz



■ Derating Curve



■ ON/OFF Control & Output Trim



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

15W DC-DC Regulated Dual Output

NSD15-D series

Features :

- Wide 4:1 DC input range
- Protections: Short circuit / Overload / Over voltage
- 1500VDC I/O isolation
- Built-in EMI filter
- Cooling by free air convection
- Output voltage trimming function
- Built-in remote ON-OFF control
- 100% full load burn-in test
- Lost cost
- High reliability
- 2 years warranty

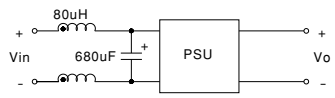
CE

SPECIFICATION

MODEL		NSD15-12D5		NSD15-12D12		NSD15-12D15		NSD15-48D5		NSD15-48D12		NSD15-48D15	
OUTPUT	DC VOLTAGE	5V	-5V	12V	-12V	15V	-15V	5V	-5V	12V	-12V	15V	-15V
	RATED CURRENT	1.5A	1.5A	0.62A	0.62A	0.5A	0.5A	1.5A	1.5A	0.62A	0.62A	0.5A	0.5A
	CURRENT RANGE	0.07 ~ 1.5A	0.07 ~ 1.5A	0.03 ~ 0.62A	0.03 ~ 0.62A	0.02 ~ 0.5A	0.02 ~ 0.5A	0.07 ~ 1.5A	0.07 ~ 1.5A	0.03 ~ 0.62A	0.03 ~ 0.62A	0.02 ~ 0.5A	0.02 ~ 0.5A
	RATED POWER	15W											
	RIPPLE & NOISE (max.) Note.2	100mVp-p(25% ~ 100% load)											
	VOLTAGE TOLERANCE Note.3	±3.0%		±2.0%		±2.0%		±3.0%		±2.0%		±2.0%	
	LINE REGULATION	±1.0% at 10% ~ 100% load											
	LOAD REGULATION	±2.0%		±1.0%		±1.0%		±2.0%		±1.0%		±1.0%	
INPUT	RATED DC INPUT	12VDC						48VDC					
	VOLTAGE RANGE Note.6	9.4 ~ 36VDC						18 ~ 72VDC					
	EFFICIENCY (Typ.)	76%		80%		80%		80%		84%		84%	
	DC CURRENT	1.8A/12VDC						0.4A/48VDC					
	SHUTDOWN IDLE CURRENT	20mA											
PROTECTION	OVERLOAD	Above 105% rated output power											
		Protection type : Over power limiting, recovers automatically after fault condition is removed											
	OVER VOLTAGE(CLAMP)	7.25 ~ 9V	-7.25 ~ -9V	13.8 ~ 18V	-13.8 ~ -18V	17.3 ~ 22.5V	-17.3 ~ -22.5V	7.25 ~ 9V	-7.25 ~ -9V	13.8 ~ 18V	-13.8 ~ -18V	17.3 ~ 22.5V	-17.3 ~ -22.5V
	SHORT CIRCUIT Note.4	Recovers automatically after fault condition is removed											
FUNCTION	ON/OFF CONTROL	Logic "1" OPEN: ON, logic "0" GND: OFF											
ENVIRONMENT	WORKING TEMP.	-25 ~ +70℃											
	WORKING HUMIDITY	0% ~ 95% RH max.											
	STORAGE TEMP., HUMIDITY	-40 ~ +85℃, 0 ~ 95% RH											
	TEMP. COEFFICIENT	±0.03%/℃ (0~50℃)											
SAFETY & EMC (Note 5)	SAFETY STANDARDS	Design refer to UL60950-1, TUV EN60950-1											
	ISOLATION VOLTAGE	I/P-O/P:1.5KVDC											
	ISOLATION RESISTANCE	I/P-O/P:100M Ohms/500VDC 25℃ 70%RH											
	EMI CONDUCTION & RADIATION	Compliance to EN55022 (CISPR22) Class B											
	EMS IMMUNITY	Compliance to EN61000-4-2,3,4,6,8; EN55024, Light industry level, criteria A											
OTHERS	MTBF	1673.1K hrs min. MIL-HDBK-217F (25℃)											
	DIMENSION	38.1*50.8*9.82mm (1.5"*2"*0.387") (L*W*H)											
	PACKING	0.03Kg; 180pcs/6.4Kg/0.97CUFT											

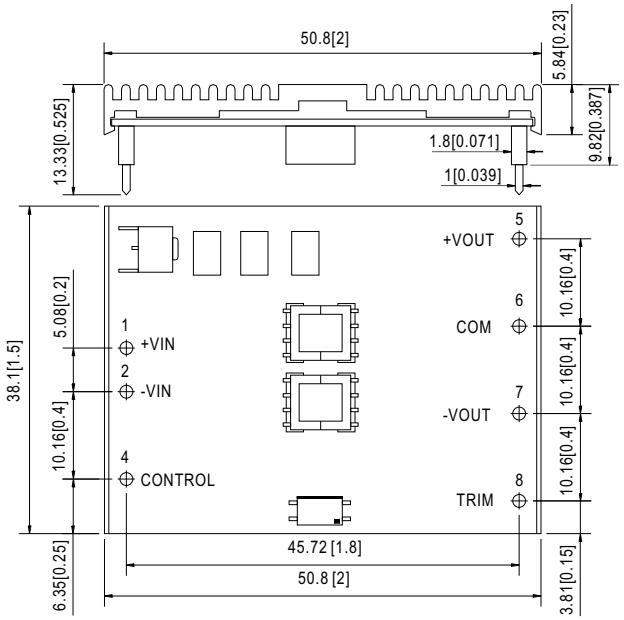
NOTE

1. All parameters NOT specially mentioned are measured at 12,48VDC 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. 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.
6. Derating to 80% load is needed for NSD15-48D series at 18Vdc input voltage. Full output wattage can be acquired when the input voltage is higher than 20Vdc.
7. EMC filter suggestion:



■ Mechanical Specification

Unit:mm[inch]

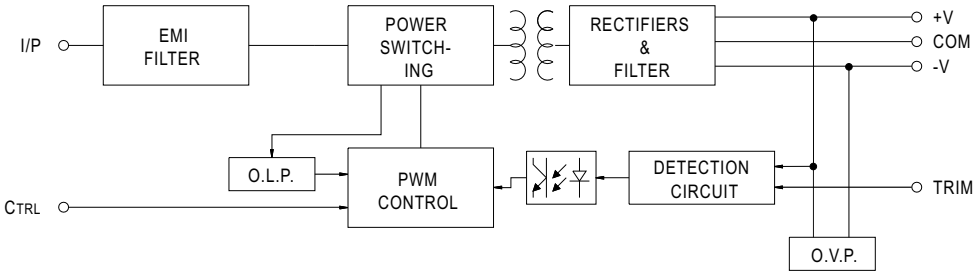


Pin No. Assignment

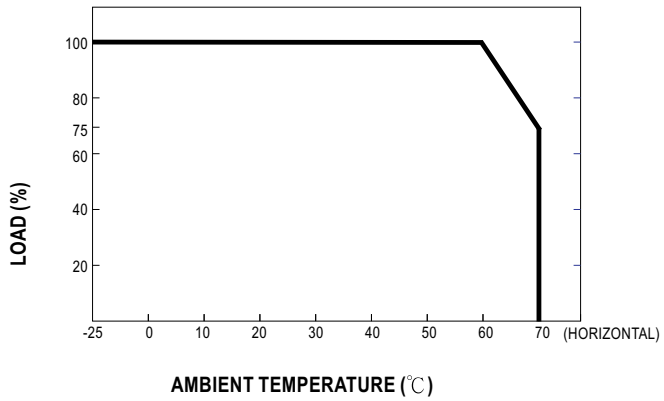
Pin No.	Assignment	Pin No.	Assignment
1	+VIN	5	+VOUT
2	-VIN	6	COMMON
3	No Pin	7	-VOUT
4	CONTROL	8	TRIM

■ Block Diagram

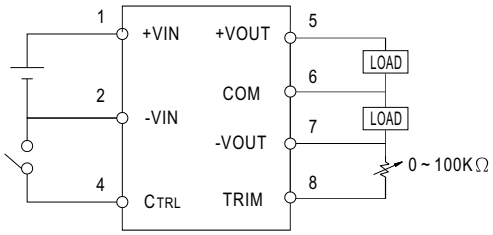
fosc : 400KHz



■ Derating Curve



■ ON/OFF Control & Output Trim



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