

승 인 원

(APPROVAL SHEET)


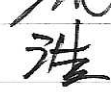
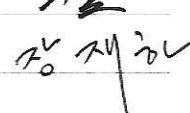
품 목	SMPS
품 명	VSF150-S
Rev. No.	A

CE

승 인 (APPROVED)	검 토
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	심 사
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	날 짜
	Date :

상기와 같이 승인원을 제출하오니 검토하시어 승인하여 주시기 바랍니다.

2008 년 2 월 19일

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CONTENTS

1.	3
2.	4 - 6
3. Dimension	7
4. User's guide	8 - 11
5.	12 - 14

승인원 변경이력

Product.	SMPS	Date.	2008. 2. 19
Model.	VSF150-S	Rev.	A
Customer.	STANDARD	Page.	1

DWG	연구원 김 재 환
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No.	Date.	변경내용	변경사유	변경항목	Rev.
1	2008.2.19	승인원 신규발행	신규발행	전체(All Pages)	A

SPECIFICATIONS

Product.	SMPS	Date.	2008. 2. 19.
Model.	VSF150-S	Rev.	A
Customer.	STANDARD	Page.	1 / 3

MODEL/CHANNEL		Unit.	2R4	03	3R3	05
INPUT	Voltage , Frequency	[V]	AC100V 120V,200 240V(AC85 132V/170 264V or DC240 370V),50/60Hz(44 440Hz or DC)			
	Current	110V	3.7A			
	Typ.	220V	2.1A			
	Efficiency	220V	71% Typ	78% Typ	78% Typ	78% Typ
	Typ.					
	Power factor	110V	-			
	Typ.	220V				
INPUT	Inrush Current	110V	20 (Ta=25 , Cold Start)			
	Typ.	220V	40 (Ta=25 , Cold Start)			
	Leakage Current	220V	3.5			
	Max.					
OUTPUT	Norminal Voltage	[V]	2.4	3	3.3	5
	Setting Voltage Range	[V]	2.38 2.42	2.97 3.03	3.25 3.35	4.95 5.05
	Current	[A]	30	30	30	30
	Line Regulations	[mV]	25	25	25	25
	Load Regulations	[mV]	50	50	50	50
	Cross Regulations	[mV]	-	-	-	-
	Temperature Drift	[mV]	75	50	50	75
	Ripple Max.	[mV]	50	100	100	50
	Ripple & Noise Max.	[mV]	100	150	150	100
	Turn - on Time Typ.	[ms]	500 max (AC IN 110/220V, Io=100%)			
	Hold - up Time Typ.	[ms]	16 typ (AC IN 110V/220, Io=100%)			
Function	Over Voltage Protection	[V]	2.76 3.36	3.8 4.7	3.8 4.7	5.75 7
	Over Current Protection	[A]	33.0 43.5	33 43.5	33 43.5	33 43.5
	Remote ON.OFF	-	-	-	-	-
	Remote Sensing	-	-	-	-	-
	Power Fail Signal	-	-	-	-	-
	Parallel/Series Operation	-	-	-	-	-
	Cooling / O.T.P	-	-	-	-	-
Electrical Isolation	(1) Input - Output	-	AC 3.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(2) Input - F.G	-	AC 2.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(3) Output - F.G	-	AC 0.5KV 1min, cut-off:100mA / DC 500V 100MΩ			
Environment	Operating temp. & Humidity	-	- 10 50 , 20 90% RH (Non Condensing)			
	Storage temp. & Humidity	-	- 20 75 , 20 90% RH (Non Condensing)			
	Vibration	-	10 55Hz at 1G 3minutes period, 30minutes along X,Y and Z axis			
Dimension	Size(WxHxD) / Weight	mm / g	93 X 65 X 218		/ 852	
Safety	-	-	-	-	-	CE
Emission	Conducted Emission	-	-			
PFHC	-	-	-			

SPECIFICATIONS

Product.	SMPS	Date.	2008. 2. 19.
Model.	VSF150-S	Rev.	A
Customer.	STANDARD	Page.	2 / 3

MODEL/CHANNEL			Unit.	06	09	12	13.8
INPUT	Voltage , Frequency		[V]	AC100V 120V,200 240V(AC85 132V/170 264V or DC240 370V),50/60Hz(44 440Hz or DC)			
	Current Typ.	110V	[A]	3.7A			
		220V		2.1A			
	Efficiency Typ.	110V 220V	[%]	75% Typ	80% Typ	80% Typ	80% Typ
	Power factor Typ.	110V 220V	-	-			
	Inrush Current Typ.	110V 220V	[A]	20 (Ta=25 , Cold Start)			
				40 (Ta=25 , Cold Start)			
Leakage Current Max.	110V 220V	[mA]	3.5				
OUTPUT	Normal Voltage		[V]	6	9	12	13.8
	Setting Voltage Range		[V]	5.94 6.06	8.91 9.09	11.88 12.12	13.66 13.94
	Current		[A]	25	17	13	10.8
	Line Regulations		[mV]	30	45	60	70
	Load Regulations		[mV]	60	90	120	140
	Cross Regulations		[mV]	-	-	-	-
	Temperature Drift		[mV]	90	135	180	210
	Ripple Max.		[mV]	60	90	120	140
	Ripple & Noise Max.		[mV]	110	140	170	190
	Turn - on Time Typ.		[ms]	500 max (AC IN 110/220V, Io=100%)			
	Hold - up Time Typ.		[ms]	16 typ (AC IN 110V/220, Io=100%)			
Function	Over Voltage Protection		[V]	6.9 8.4	10.35 12.6	13.8 16.8	15.87 19.32
	Over Current Protection		[A]	27.5 36.3	18.7 24.65	14.3 18.9	11.88 15.66
	Remote ON.OFF		-	-	-	-	-
	Remote Sensing		-	-	-	-	-
	Power Fail Signal		-	-	-	-	-
	Parallel/Series Operation		-	-	-	-	-
	Cooling / O.T.P		-	-	-	-	-
Electrical Isolation	(1) Input - Output		-	AC 3.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(2) Input - F.G		-	AC 2.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(3) Output - F.G		-	AC 0.5KV 1min, cut-off:100mA / DC 500V 100MΩ			
Environment	Operating temp. & Humidity		-	- 10 50 , 20 90% RH (Non Condensing)			
	Storage temp. & Humidity		-	- 20 75 , 20 90% RH (Non Condensing)			
	Vibration		-	10 55Hz at 1G 3minutes period, 30minutes along X,Y and Z axis			
Dimension	Size(WxHxD) / Weight		mm / g	93 X 65 X 218		/ 852	
Safety	Safety Regulation		-	-	-	CE	-
Emission	Conducted Emission		-	-			
PFHC	-		-	-			

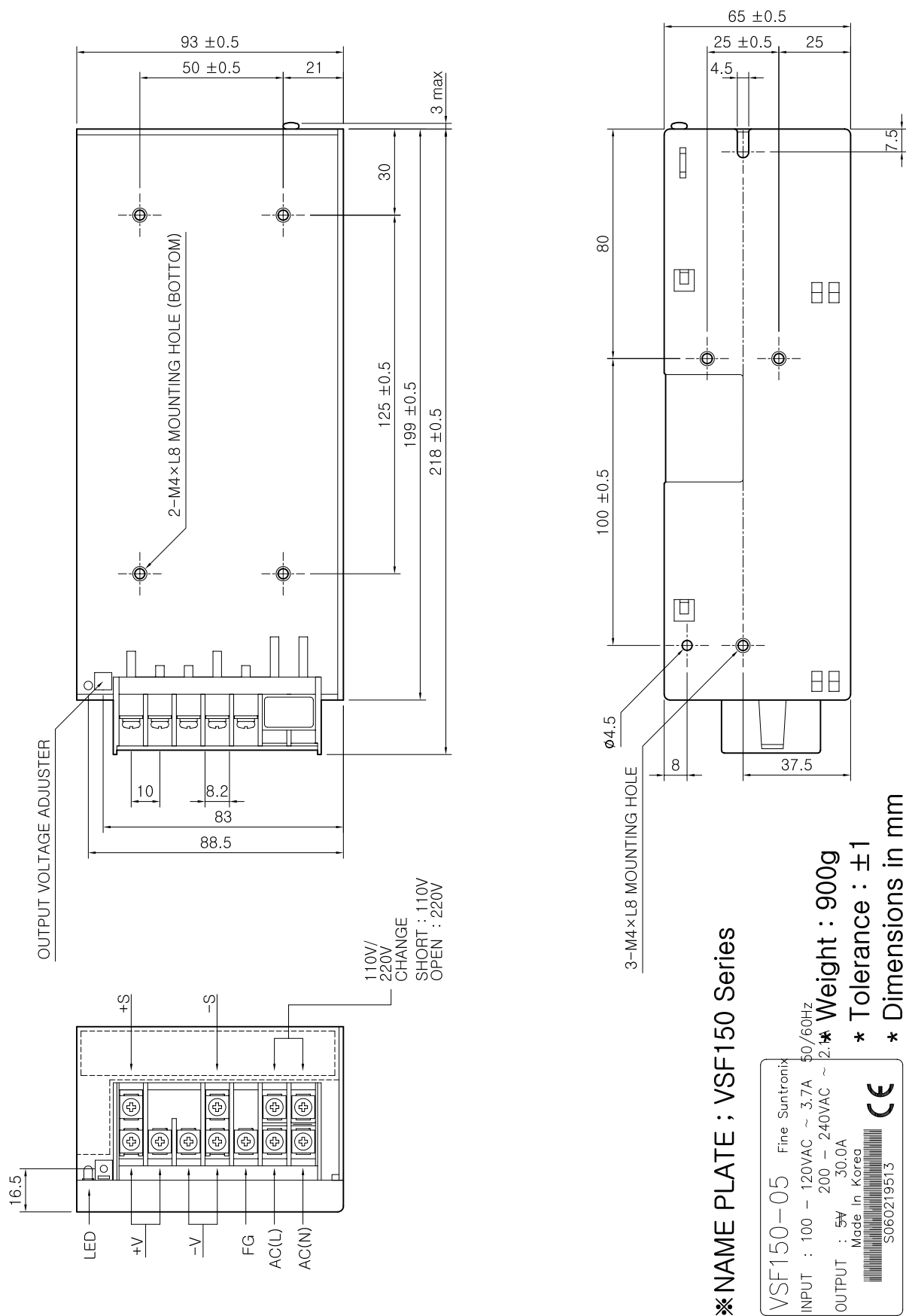
SPECIFICATIONS

Product.	SMPS	Date.	2008. 2. 19.
Model.	VSF150-S	Rev.	A
Customer.	STANDARD	Page.	3 / 3

MODEL/CHANNEL			Unit.	15	24	28	48
INPUT	Voltage , Frequency		[V]	AC100V 120V,200 240V(AC85 132V/170 264V or DC240 370V) ,50/60Hz(44 440Hz or DC)			
	Current	110V	[A]	3.7A			
	Typ.	220V		2.1A			
	Efficiency	110V	[%]	82% Typ	8.% Typ	85% Typ	86% Typ
	Typ.	220V					
	Power factor	110V	-	-			
	Typ.	220V					
Inrush Current	110V	[A]	20 (Ta=25 , Cold Start)				
Typ.	220V		40 (Ta=25 , Cold Start)				
Leakage Current	110V	[mA]	3.5				
Max.	220V						
OUTPUT	Norminal Voltage		[V]	15	24	28	48
	Setting Voltage Range		[V]	14.85 15.15	23.76 24.24	27.72 28.28	47.52 48.48
	Current		[A]	10	6.5	5.3	3.1
	Line Regulations		[mV]	75	120	140	240
	Load Regulations		[mV]	150	240	280	480
	Cross Regulations		[mV]	-	-	-	-
	Temperature Drift		[mV]	225	360	420	720
	Ripple Max.		[mV]	150	240	280	480
	Ripple & Noise Max.		[mV]	200	290	330	530
	Turn - on Time Typ.		[ms]	500 max (AC IN 110/220V, Io=100%)			
	Hold - up Time Typ.		[ms]	16 typ (AC IN 110V/220, Io=100%)			
Function	Over Voltage Protection		[V]	17.3 21	27.6 33.6	32 39	55.2 67.2
	Over Current Protection		[A]	11 14.5	7.15 9.43	5.8 7.7	3.4 4.5
	Remote ON.OFF		-	-	-	-	-
	Remote Sensing		-	-	-	-	-
	Power Fail Signal		-	-	-	-	-
	Parallel/Series Operation		-	-	-	-	-
	Cooling / O.T.P		-	-	-	-	-
Electrical Isolation	(1) Input - Output		-	AC 3.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(2) Input - F.G		-	AC 2.0KV 1min, cut-off: 20mA / DC 500V 100MΩ			
	(3) Output - F.G		-	AC 0.5KV 1min, cut-off:100mA / DC 500V 100MΩ			
Environment	Operating temp. & Humidity		-	- 10 50 , 20 90% RH (Non Condensing)			
	Storage temp. & Humidity		-	- 20 75 , 20 90% RH (Non Condensing)			
	Vibration		-	10 55Hz at 1G 3minutes period, 30minutes along X,Y and Z axis			
Dimension	Size(WxHxD) / Weight		mm / g	93 X 65 X 218		/ 852	
Safety	-		-	CE	CE	-	-
Emission	Conducted Emission		-	-			
PFHC	-		-	-			

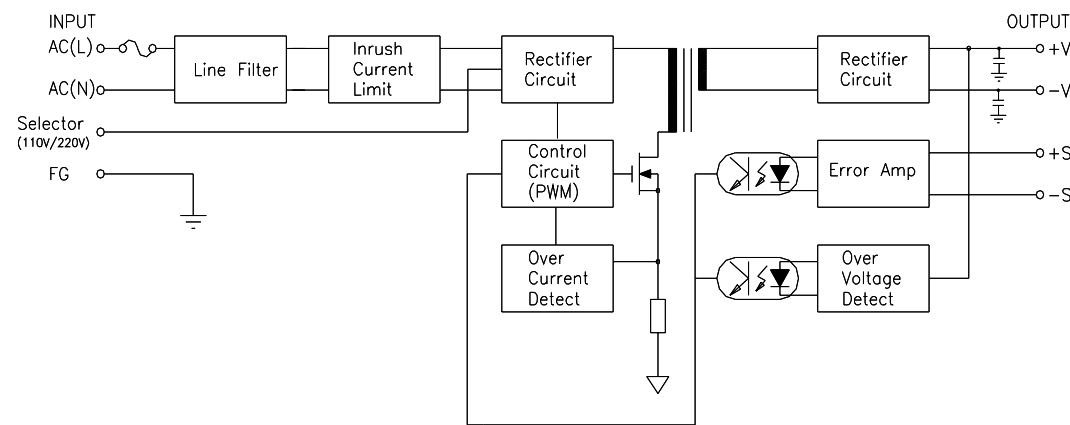
Dimension

VSF150W Single Output



User's guide

1. BLOCK DIAGRAM



2. Terminal Connection

Mark	Pin Connection	Function
L	AC L	SMPS AC Terminal (Fuse in Line)
N	AC N	SMPS AC Terminal
F.G	Frame ground	SMPS AC , CASE
+V	DC Output (+)	DC (+) Termianl
-V	DC Output (-)	DC (-) Terminal
+S	SENSING (+)	DC (+) Sensing
-S	SENSING (-)	DC (-) Sensing

3. Function

3-1. (Adjustable output voltage range)

o 가 5% , .

3-2. (O.C.P : Over Current Protection)

o SMPS 가 110% .
o short 가 .

3-3. (O.V.P : Over Voltage Protection)

o 115% 가 SMPS .
o AC 3 A/S , .

User's guide

4. / (Series operation / Parallel operation)

4-1. A (Fig 1.) B (Fig 2.)

4-2. 가 가 , , SMPS (Fig 4.) 가 .

)

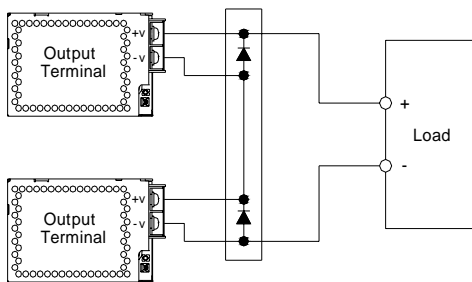


Fig 1. A

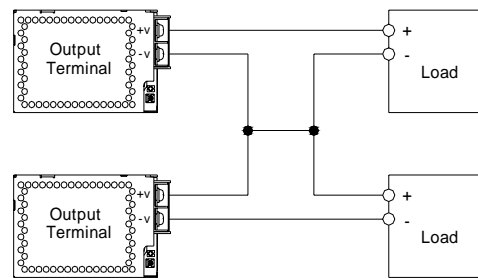


Fig 2. B

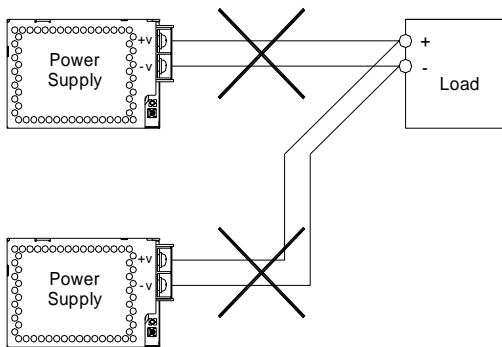


Fig 3. A (가)

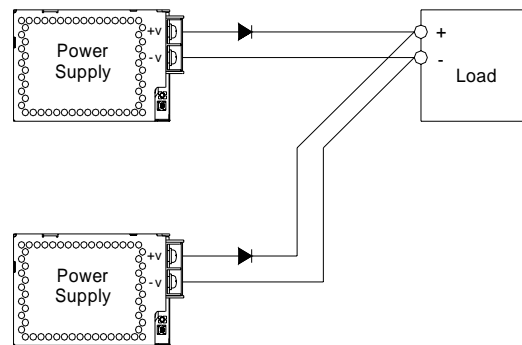


Fig 4. B (Back up)

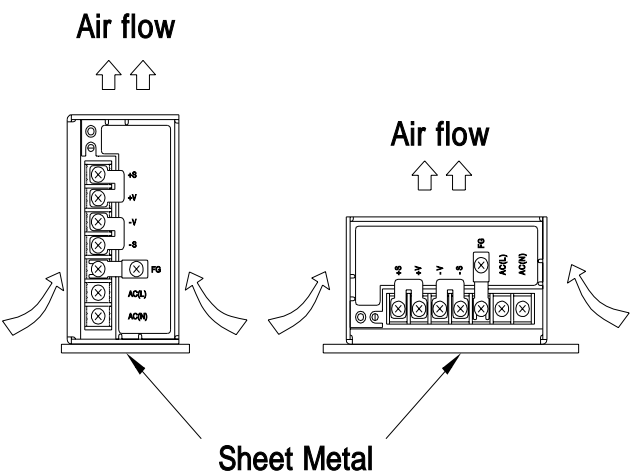
User's guide

5. (Mounting method)

5-1.

o
o
o

)



(1) MOUNT A

(2) MOUNT B

Fig 1.

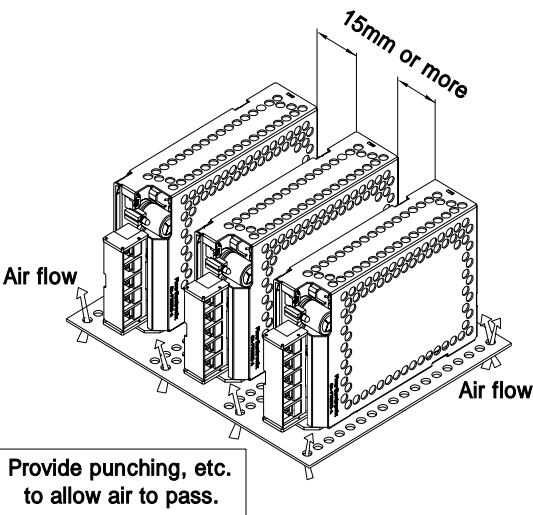


Fig 2.

6. Output derating curve

6-1.

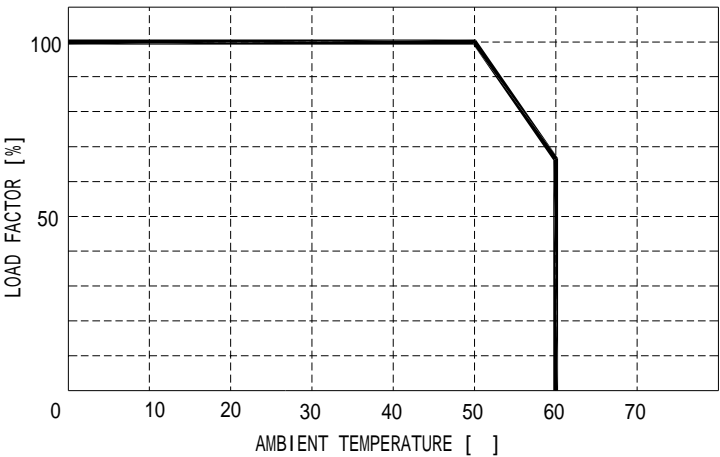
curve

(Mount A, Mount B) TOP CASE

output derating

6-2. Output derating curve (Mount A, Mount B, Convection cooling)

6-2-1. VSF150-S



User's guide

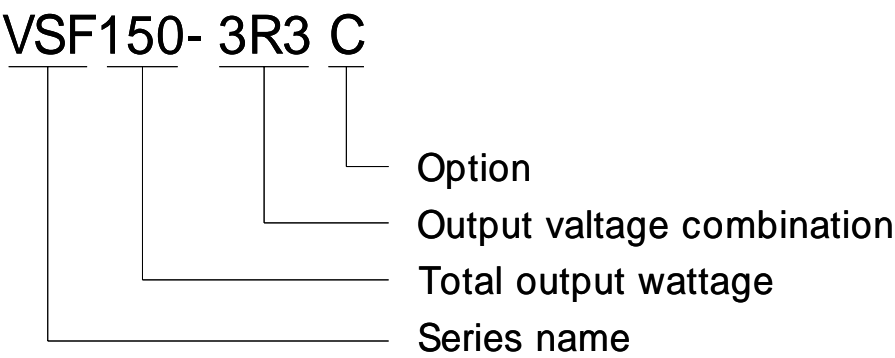
7.

- .
- 가 .
- 가 .
- .
- 가
- 가
- 가
- 가
- 가
-

8.

- , , .
- 3 , .

9. ORDERING INFORMATION



- Option
- 1. : Silicon Bonding
 - 2. Coating

INPUT ()

- o Input Voltage () : AC() (110VAC, 220VAC) DC()
(5VDC, 12VDC)
- o Input Current () : 가 .
- o Input Wattage () : SMPS .
- o Input Frequency () : AC() 50Hz, 60Hz(60Hz)
- o Input Efficiency () : .
- o Inrush Current () : .
- o Leakage Current () : 1 Capacitor .
- o Power Factor () : .

OUTPUT ()

- o Output Voltage () : DC() .
- o Output Current () : DC() .
- o Output Wattage () : SMPS가 DC (X) .
- o Line Regulation () : (AC DC) DC() .
- o Load Regulation () : min~100% DC() .
- o Cross Regulation () : SMPS min~100% DC() .
- o Temperature Drift () : SMPS DC() .
- o Ripple & Noise () : DC() .
- o Turn on Time () : DC() 90% .
- o Hold up Time () : DC() 90% .

FUNCTION ()

- o Over Current Protection (OCP,) : 가 SMPS

 - o Over Voltage Protection (OVP,) : SMPS가 DC()
SMPS가 DC()

 - o Over Temperature Protection (OTP,) : SMPS 가

 - o Remote ON/OFF (RC or CNT,) : SMPS ON/OFF

 - o Remote Sensing (+S, -S,) : SMPS 가

 - o Load Detect (LD,) : , .

 - o Adjustable Output Voltage (VR,) : SMPS
가 TRM

 - o Power Fail Signal (P.F,)
1) P.F : 가
2) P.F : SMPS

 - o Low Voltage alarm (LV alarm,) : SMPS

 - o Power alarm (PR alarm,) : SMPS AC , FAN
. (P.F, LV alarm, FAN alarm)

 - o Parallel / Series Operation (/) : SMPS
가

 - o Voltage Balance (VB,) : 가

 - o Current Balance (CB,) : 가
가

 - o Frame Gnd(FG), AC Gnd(ACG) : Frame Ground, AC Ground

ELECTRICAL ISOLATION ()

- o Electrically Isolated Input-Output (-) : AC()
DC() .
- o Electrically Isolated Input-Case, FG (- ,) : AC()
, .
- o Electrically Isolated Output-Case, FG (- ,) : DC()
.

ENVIRONMENT ()

- o Operating Temp and Humidity (&) : SMPS
.
- o Storage Temp and Humidity (&) : SMPS ,
.
- o Vibration () : SMPS가 .

ETC ()

- o Safety () : .
- o Safety Regulation () : .
- o Line Conducted RF Voltage () : .