

Features

- Efficiency up to 80%
- 1500VDC Isolation(Suffix H for 3000VDC)
- Singl/Double output
- Continuous short circuit protection
- Wide input voltage range
- Wide temperature -40 ~ to 85 ~
- Low ripple and noise
- Short circuit protection


Model Selection Guide

Order Code	Vin(V)		Output		Recommend capacitive(uF)	Efficiency(%) (Typ)		
	Nominal	Range	Vo(V)	Io(mA)				
DDM5-05S05(P/H)	5	4.5-9.0	5	1000	220	76		
DDM5-05S09(P/H)			9	556	150	76		
DDM5-05S12(P/H)			12	417	150	77		
DDM5-12S3V3(P/H)	12	9-18	3.3	1500	220	75		
DDM5-12S05(P/H)			5	1000	220	78		
DDM5-12S09(P/H)			9	556	220	78		
DDM5-12S12(P/H)			12	417	100	82		
DDM5-12S15(P/H)			15	333	100	82		
DDM5-12S24(P/H)			24	208	100	82		
DDM5-12D05(P/H)			±5	±500	150	78		
DDM5-12D09(P/H)			±9	±278	150	78		
DDM5-12D12(P/H)			±12	±208	100	80		
DDM5-12D15(P/H)			±15	±167	100	81		
DDM(F)5-24S3V3(P/H)			24	18-36 (F)9-36	3.3	1500	220	75
DDM(F)5-24S05(P/H)	5	1000			220	80		
DDM(F)5-24S09(P/H)	9	556			220	80		
DDM(F)5-24S12(P/H)	12	417			100	81		
DDM(F)5-24S15(P/H)	15	333			100	82		
DDM(F)5-24S24(P/H)	24	208			100	82		
DDM(F)5-24D05(P/H)	±5	±500			150	78		
DDM(F)5-24D09(P/H)	±9	±278			150	79		
DDM(F)5-24D12(P/H)	±12	±208			100	80		
DDM(F)5-24D15(P/H)	±15	±167			100	81		
DDM(F)5-48S3V3(P/H)	48	36-72 (F)18-72			3.3	1500	220	76
DDM(F)5-48S05(P/H)					5	1000	220	80
DDM(F)5-48S09(P/H)					9	556	220	80
DDM(F)5-48S12(P/H)					12	417	100	81
DDM(F)5-48S15(P/H)					15	333	100	82
DDM(F)5-48S24(P/H)			24	208	100	82		
DDM(F)5-48D05(P/H)			±5	±500	150	80		
DDM(F)5-48D09(P/H)			±9	±278	150	80		
DDM(F)5-48D12(P/H)			±12	±208	100	81		
DDM(F)5-48D15(P/H)			±15	±167	100	82		

Input Characteristics

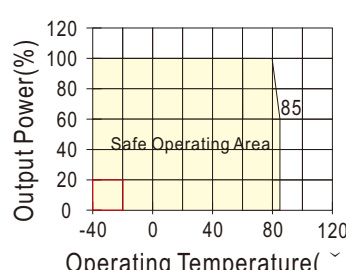
Parameter	Condition	Min	Typ	Max	Units
Input Surge Voltage (1 sec. Max.)	5V Input Models	-0.7	---	15	VDC
	12V Input Models	-0.7	---	25	
	24V Input Models	-0.7	---	50	
	48V Input Models	-0.7	---	90	
Input Filter Type	All Models	Internal Capacitor			

Output Characteristics

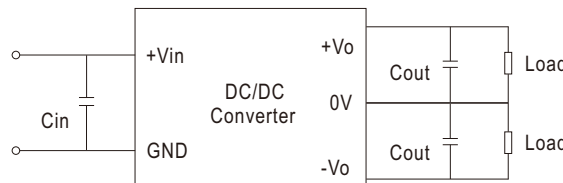
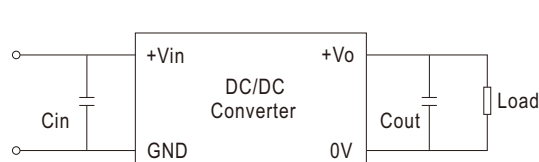
Parameter	Condition	Min	Typ	Max	Units
Output Voltage Accuracy	+Vo	---	1%	---	%
	-Vo	---	2%	3%	%
Load regulation	10% ~ 100% load	---	±0.5	±1	%
Line regulation	Vin(Min~Max)	±0.1	---	±0.5	%
Ripple and noise	BW=DC to 20MHz	---	50	100	mVp-p
Switching frequency	Full load,nominal input	---	300	400	KHz
Transient Recovery Time	25% Load Step Change	---	---	500	uS
Short circuit Protection	Continuous, Automatic Recovery				

General Characteristics

Parameter	Condition	Min	Typ	Max	Units
Operating Temperature	All output types	-40	---	+85	~
Storage		-55	---	+125	~
Storage humidity		---	---	+95	%
Cooling	Free air convection	---	---	---	
Isolation voltage	1mA ~ 1minute	1500	---	---	VDC
		3000	---	---	VDC
Isolation resistance	500VDC	1000	---	---	MΩ
MTBF	2 ~ 10 ⁶				K hours
Case material					Metal
	/P				Plastic

Temperature Derating Graph Curve

Design & Feature Considerations
1. Input/Output Ripple Reduction

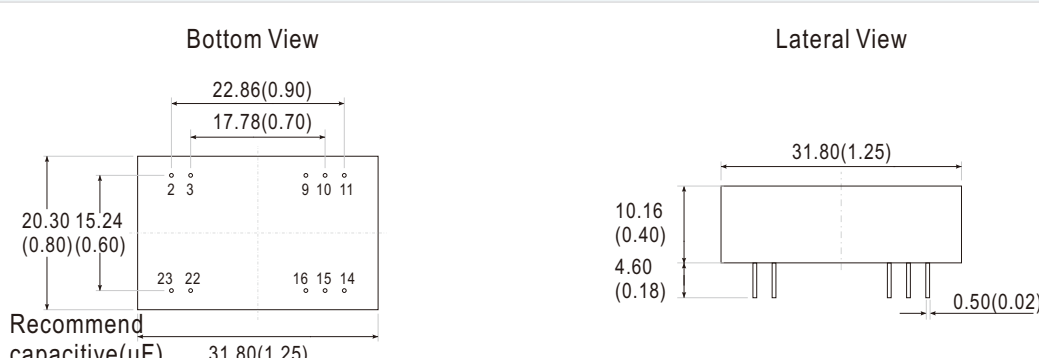
Reduce output ripple, it is recommended to use capacitors at the input/output. It is recommended to use 10uF~100uF capacitors at the input; 47~220uF capacitors at the output.


2. Overload Protection

The products provide protection against overload, the unit is equipped with internal current limiting circuitry .

Note

- 1.All the specifications nominal at Ta=+25℃ resistive load, nominal input voltage and rated output current unless otherwise noted.
- 2.Operation under no-load condition will not damage these modules; however they may not meet all specifications listed.
- 3.Ripple & Noise measurement bandwidth is 0-20MHz.
- 3.Other input and output voltage may be available, please
- 4.To order the converter with 4:1 input voltage range, add letter F (e.g:DDF5-24S05) in the order code.
- 5.All DC/DC converters should be externally fused at the front end for protection.
- 6.Specifications subject to change without notice

Mechanical Dimension & Pin Connections


Pin	2,3	9	10	11	14	15	16	22,23
Single	-Vin	NC	NP	NC	+Vo	NP	-Vo	+Vin
Double	-Vin	COM	NP	-Vo	+Vo	NP	COM	+Vin

 Note:
Unit:mm(inch)