DEL ELEC I
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SELECTION GUIDE

Order code	Input		Output			Efficiency[1] (%,Typ)
	Voltage(VDC)		Voltage (VDC)	Current(mA)		
	Nominal	Range		Max.	Min.	
MA0512XD-1W	5	4. 75-5.25	±12	±42	±5	64
MA0515XD-1W	5	4. 75-5.25	±15	±33	±4	65
MA0509XD-2W	5	4. 75-5.25	±9	±100	±10	62
MA0512XD-2W	5	4. 75-5.25	±12	±83	±9	63
MA0515XD-2W	5	4. 75-5.25	±15	±67	±7	64
MA1212XD-1W	12	11. 4-12.6	±12	±42	±5	64
MA1215XD-1W	12	11. 4-12.6	±15	±33	±4	65
MA1209XD-2W	12	11. 4-12.6	±9	±100	±10	63
MA1212XD-2W	12	11. 4-12.6	±12	±83	±9	65
MA1215XD-2W	12	11. 4-12.6	±15	±67	±7	66
MA2412XD-1W	24	22. 8-25.2	±12	±42	±5	64
MA2415XD-1W	24	22. 8-25.2	±15	±33	±4	65
MA2409XD-2W	24	22. 8-25.2	±9	±100	±10	63
MA2412XD-2W	24	22. 8-25.2	±12	±83	±9	66
MA2415XD-2W	24	22. 8-25.2	±15	±67	±7	67

COMMON SPECIFICATION

Parameter	Test conditions	Min.	Typ.	Max	Units
Storage humidity				95	%
Operating temperature		-40		85	
Storage temperature		-55		125	
Temp. rise at full load			20	30	
Lead temperature	1. 5mm from case for 10 seconds			300	
Short circuit protection*				1	s
Cooling		Free air convection			
Case material		Plastic(UL94-V0)			
MTBF		3500			K hours
Weight			11		g

*Supply voltage must be discontinued at the end of short circuit duration.

TYPICAL CHARACTERISTICS

APPLICATION NOTE

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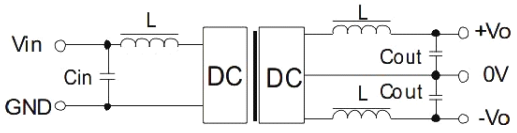
To ensure this module can operate efficiently and reliably , During operation, the minimum output load is 10% A , and that this product should

I If the actual output power is very small, please connect a resistor with proper resistance at the output end in parallel to increase the load, or use our company’ s products with a lower rated output power.

If you want to further decrease the input /output ripple, an LC filtering network may be connected to the input and output ends of the DC/ DC converter , see (Figure 1).



(Figure 1)

It should also be noted that the inductance and the frequency of the LC filtering network should be staggered with the DC/ DC frequency to avoid mutual interference. However , the capacitance of the out put filter capacitor must be proper .If the capacitance is too big, a startup problem might arise. For every channel of out put , provided the safe and reliable operation is ensured, the greatest capacitance of its filter capacitor sees (Table 1).

3LE (Table 1) EXTERNAL CAPACITOR TA

12	2.2	±9	2.2
24	1	±12	
-	-	±15	0.47

It s not recommended to connect any external capacitor in the application field with less than 0.5 watt output.

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Under normal operating conditions, the output circuit of these products has no protection against over-current and short-circuits. The simplest method is to connect a self-recovery fuse in series at the input end or add a circuit breaker to the circuit.

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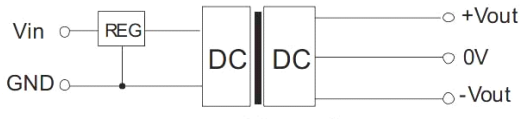
The simplest device for input over-voltage protection is a linear voltage regulator with overheat protection that is connected to the input end in series (Figure 2).



(Figure 2)

71° C,

66% A .

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