

M-Series

4 - 6W Isolated DC/DC-Converters

- Wide 4:1 Input Range
- Full SMD Technology
- 1.5 kVDC or 3.5kVDC Isolation
- Regulated 24 Pin DIP Package
- Single and Dual Output
- Continuous Short Circuit Protection

Selection Guide (See Model Code Information on Page 59)

Ordering Code	Nominal Input Voltage (VDC)	Input Current		Output Voltage (VDC)	Output Current (mA)	Efficiency at Full Load (%)
		No Load (mA)	Full Load (mA)			

4W, 1kVDC, Single Output

M4-243.3S(H)-(M)	9 - 36	12	222	3.3	1200	75
M4-2405S(H)-(M)	9 - 36	12	219	5	800	76
M4-2412S(H)-(M)	9 - 36	11	214	12	333	78
M4-4805S(H)-(M)	18 - 72	12	111	5	800	75
M4-4812S(H)-(M)	18 - 72	12	107	12	333	78
M4-4815S(H)-(M)	18 - 72	12	104	15	267	80
M4-4818S(H)-(M)	18 - 72	12	104	18	222	80

4W, 1kVDC, Dual Output

M4-243.3D(H)-(M)	9 - 36	16	219	±3.3	±600	76
M4-2405D(H)-(M)	9 - 36	16	379	±5	±400	77
M4-4805D(H)-(M)	18 - 72	16	108	±5	±400	77
M4-4812D(H)-(M)	18 - 72	16	106	±12	±167	79
M4-4815D(H)-(M)	18 - 72	16	106	±15	±133	79

5W, 1kVDC, Single Output

M5-2405S(H)-(M)	9 - 36	14.5	274	5	1000	76
M5-2415S(H)-(M)	9 - 36	14.5	260	15	333	80
M5-4805S(H)-(M)	18 - 72	15.8	139	5	1000	75
M5-4812S(H)-(M)	18 - 72	15.8	132	12	417	79
M5-4815S(H)-(M)	18 - 72	15.8	130	15	333	80

(*) Select on Inquiry Form 3,5 kVDC Isolation ('H' Feature) instead of 1.5 kVDC and Metal Case (Suffix 'M') vs. Plastic Case. See model Code information on page 59.

Continued on next Page.

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Selection Guide (See Model Code Information on Page 59)

Ordering Code	Nominal Input Voltage (VDC)	Input Current		Output Voltage (VDC)	Output Current (mA)	Efficiency at Full Load (%)
		No Load (mA)	Full Load (mA)			

5W, 1kVDC, Dual Output

M5-2405D(H)-(M)	9 - 36	19	281	±5	±500	74
M5-2412D(H)-(M)	9 - 36	19	267	±12	±208	78
M5-4805D(H)-(M)	18 - 72	19	137	±5	±500	76
M5-4812D(H)-(M)	18 - 72	19	135	±12	±208	77
M5-4815D(H)-(M)	18 - 72	19	132	±15	±167	79

6W, 1kVDC, Single Output

M6-2405S(H)-(M)	9 - 36	15	328	5	1200	76
M6-2412S(H)-(M)	9 - 36	15	317	12	500	79
M6-4805S(H)-(M)	18 - 72	16	167	5	1200	75
M6-4812S(H)-(M)	18 - 72	16	162	12	500	77
M6-4815S(H)-(M)	18 - 72	16	158	15	400	79

6W, 1kVDC, Dual Output

M6-2405D(H)-(M)	9 - 36	20	325	±5	±600	77
M6-2412D(H)-(M)	9 - 36	21	316	±12	±250	79
M6-4805D(H)-(M)	18 - 72	20	158	±5	±600	79
M6-4812D(H)-(M)	18 - 72	20	158	±12	±250	79

(* Select on Inquiry Form 3,5 kVDC Isolation ('H' Feature) instead of 1.5 kVDC and Metal Case (Suffix 'M') vs. Plastic Case. See model Code information on page 59.

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4 - 6W Isolated DC/DC-Converters

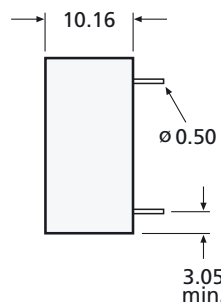
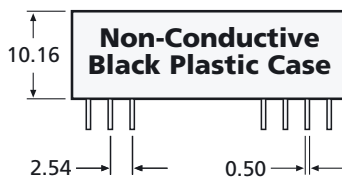
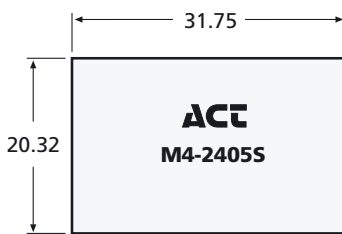
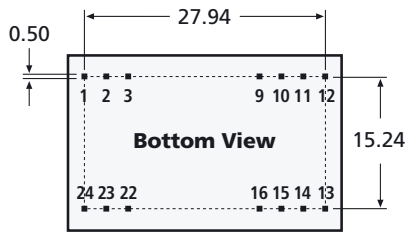
Specifications – Typical at +25°C, Unless Otherwise Noted

Voltage Range	24Vtypes 48Vtypes	9-36 VDC 18-72 VDC	Temperature Coefficient	±0.02% / °C
Filter		π (Pi) Network	Efficiency	75% to 85%
Rated Voltage		1500 VDC, Standard 3500 VDC, Feature "H"	Switching Frequency	250 KHz, typ.
Leakage Current		1 mA	Operating Temperature (Ambient)	-40°C to +85°C
Resistance		10 ⁹ Ω	Storage Temperature	-55°C to +125°C
Capacitance		80 pF, typ.	Derating	None Required
Voltage Accuracy		±1%, max.	Humidity	Up to 90%, Non-condensing
Voltage Balance (Dual Outputs)		±1%	Cooling	Free-air Convection
Ripple and Noise (at 20 MHz BW)		60 mVp-p, max.	Dimensions	31.75 x 20.32 x 10.16 mm 1.25 x 0.80 x 0.40"
Short Circuit Protection		Continuous	Weight	Black Plastic 21.5 g Metal 26.0 g
Short Circuit Restart		Automatic	Case Material	Non-conductive Black Plastic Nickel-Coated Copper = Suffix 'M'
Line Voltage Regulation		±0.5%, max.		
Load Voltage Regulation		±0.5%, max.		

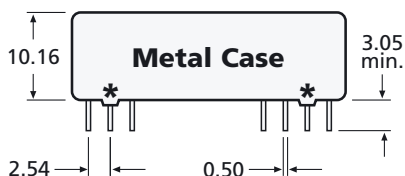
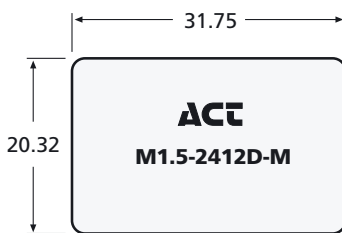
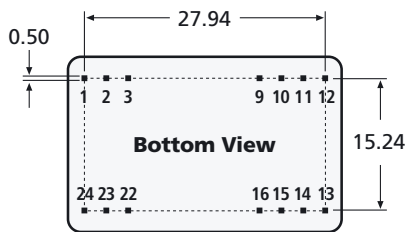
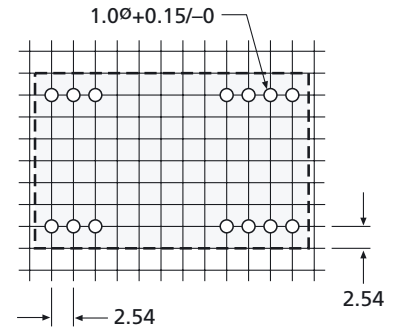
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DIP24 Package Style and Pinning (mm)



Recommended Footprint Details



Pin Connections

Pin #	1kVDC Standard		3.5kVDC	
	Single	Dual	Single	Dual
1	+Vin	+Vin	Omitted	Omitted
2	NC	-Vout	-Vin	-Vin
3	NC	Common	-Vin	-Vin
9	Omitted	Omitted	NC	Common
10	-Vout	Common	Omitted	Omitted
11	+Vout	+Vout	NC	-Vout
12	-Vin	-Vin	Omitted	Omitted
13	-Vin	-Vin	Omitted	Omitted
14	+Vout	+Vout	+Vout	+Vout
15	-Vout	Common	Omitted	Omitted
16	Omitted	Omitted	-Vout	Common
22	NC	Common	+Vin	+Vin
23	NC	-Vout	+Vin	+Vin
24	+Vin	+Vin	Omitted	Omitted

* Built-in stand-offs to ease PCB cleaning

Tolerance:
x.xx = ± 0.25 mm

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Model Code Information

		M* - * * * (H) - (M)			
Series					
M4	=	4W			
M5	=	5W			
M6	=	6W			
Input Voltages					
24	=	9-36VDC			
48	=	18-72VDC			
Output Voltages					
Single Models					
3.3	=	3.3VDC			
05	=	5VDC			
12	=	12VDC			
15	=	15VDC			
18	=	18VDC			
Dual Models					
3.3	=	±3.3VDC			
05	=	±5VDC			
12	=	±12VDC			
15	=	±15VDC			
				Suffix	
				Blank	= Plastic case
				'M' Suffix	= Metal Case
				Isolation	
				Blank	= 1.5kVDC
				'H' Feature	= 3.5kVDC
				Output	
				S	= Single
				D	= Dual

Ordering Examples: For availability see Selection Guides on pages 55 and 56
M2-053.3DH-M = M-series 2 watt , 9-36VDC input, ±3.3VDC output, dual output, 3.5kVDC isolation, metal case