

**SERIES:** VFM40 | **DESCRIPTION:** AC-DC POWER SUPPLY

**FEATURES**

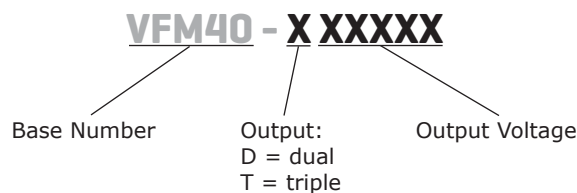
- up to 40 W continuous power
- industry standard footprint (2x4")
- universal input (90~264 Vac)
- 4,242 V isolation
- over current, over temperature, over voltage, and short circuit protections
- efficiency up to 81%



| MODEL          | output voltage<br>(Vdc) | output current |            |            | output power<br>max<br>(W) | ripple and noise <sup>1</sup><br>max<br>(mVp-p) | efficiency<br>typ<br>(%) |
|----------------|-------------------------|----------------|------------|------------|----------------------------|-------------------------------------------------|--------------------------|
|                |                         | min<br>(A)     | typ<br>(A) | max<br>(A) |                            |                                                 |                          |
| VFM40-D512     | 5 (V1)<br>12 (V2)       | 0.4<br>0.2     | 3.2<br>2.0 | 5.0<br>2.5 | 40.0                       | 50<br>120                                       | 80                       |
| VFM40-D524     | 5 (V1)<br>24 (V2)       | 0.4<br>0.2     | 3.2<br>1.0 | 5.0<br>1.5 | 40.0                       | 50<br>240                                       | 81                       |
| VFM40-T5125    | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 40.5                       | 50                                              | 78                       |
|                | 12 (V2)                 | 0.2            | 2.0        | 2.5        |                            | 120                                             |                          |
|                | -5 (V3)                 | 0              | 0.3        | 0.5        |                            | 50                                              |                          |
| VFM40-T512     | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 42.6                       | 50                                              | 78                       |
|                | 12 (V2)                 | 0.2            | 2.0        | 2.5        |                            | 120                                             |                          |
|                | -12 (V3)                | 0              | 0.3        | 0.5        |                            | 120                                             |                          |
| VFM40-T515     | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 42.0                       | 50                                              | 78                       |
|                | 15 (V2)                 | 0.2            | 1.5        | 2.3        |                            | 150                                             |                          |
|                | -15 (V3)                | 0              | 0.3        | 0.5        |                            | 150                                             |                          |
| VFM40-T52412   | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 42.6                       | 50                                              | 78                       |
|                | 24 (V2)                 | 0.2            | 1.0        | 1.5        |                            | 240                                             |                          |
|                | -12 (V3)                | 0              | 0.3        | 0.5        |                            | 120                                             |                          |
| VFM40-T5245    | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 40.5                       | 50                                              | 78                       |
|                | 24 (V2)                 | 0.2            | 1.0        | 1.5        |                            | 240                                             |                          |
|                | -5 (V3)                 | 0              | 0.3        | 0.5        |                            | 50                                              |                          |
| VFM40-T52412-1 | 5 (V1)                  | 0.4            | 3.0        | 5.0        | 42.6                       | 50                                              | 78                       |
|                | 24 (V2)                 | 0.2            | 1.0        | 1.5        |                            | 240                                             |                          |
|                | 12 (V3)                 | 0              | 0.3        | 0.5        |                            | 120                                             |                          |
| VFM40-3512     | 3.3 (V1)                | 0.4            | 5.0        | 7.0        | 30.0                       | 100                                             | 71                       |
|                | 5 (V2)                  | 0.2            | 2.0        | 3.5        |                            | 100                                             |                          |
|                | 12 (V3)                 | 0              | 0.3        | 0.5        |                            | 120                                             |                          |

Notes: 1. Ripple & noise are measured at 20 MHz BW with 0.1  $\mu$ F ceramic cap and a 10  $\mu$ F electrolytic capacitors on the output

## PART NUMBER KEY



## INPUT

| parameter      | conditions/description | min | typ | max | units |
|----------------|------------------------|-----|-----|-----|-------|
| voltage        |                        | 90  |     | 264 | Vac   |
|                |                        | 120 |     | 370 | Vdc   |
| frequency      |                        | 47  |     | 440 | Hz    |
| input current  | 115 Vac                |     |     | 1   | A     |
| inrush current | 230 Vac                |     |     | 60  | mA    |

## OUTPUT

| parameter            | conditions/description |                      | min | typ | max | units |
|----------------------|------------------------|----------------------|-----|-----|-----|-------|
| line regulation      | dual output models     | V1                   |     |     | ±1  | %     |
|                      |                        | V2                   |     |     | ±2  | %     |
|                      | triple output models   | V1                   |     |     | ±1  | %     |
|                      |                        | V2                   |     |     | ±2  | %     |
|                      |                        | V3                   |     |     | ±1  | %     |
|                      | load regulation        | dual output models   |     |     | V1  | ±3    |
| V2                   |                        |                      |     |     | ±5  | %     |
| triple output models |                        | V1                   |     |     | ±3  | %     |
|                      |                        | V2                   |     |     | ±5  | %     |
|                      |                        | V3                   |     |     | ±1  | %     |
| voltage accuracy     |                        | dual output models   |     |     | V1  | ±3    |
|                      | V2                     |                      |     |     | ±4  | %     |
|                      | triple output models   | V1                   | ±3  | %   |     |       |
|                      |                        | V2                   | ±4  | %   |     |       |
|                      |                        | V3                   | ±3  | %   |     |       |
|                      | hold-up time           | 115 Vac at full load |     |     | 20  |       |
| adjustment range     |                        |                      |     | 10  |     | %     |

## PROTECTIONS

| parameter                | conditions/description              |                  | min | typ | max | units |
|--------------------------|-------------------------------------|------------------|-----|-----|-----|-------|
| over voltage protection  | V1                                  | 3.3 V            | 3.6 | 4.6 |     | Vdc   |
|                          |                                     | 5 V              | 5.7 | 6.7 |     | Vdc   |
|                          | V2                                  | 12, 15, and 24 V | 120 |     | 140 | %     |
| over current protection  | auto recovery                       |                  |     |     | 180 | %Io   |
| short circuit protection | auto recovery upon removal of short |                  |     |     |     |       |

## SAFETY & COMPLIANCE

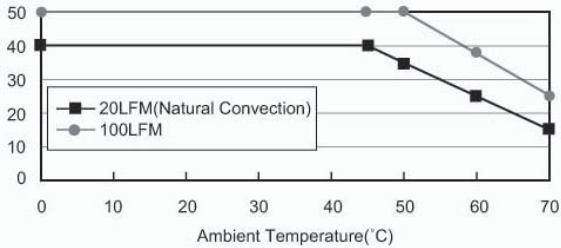
| parameter         | conditions/description                 | min   | typ | max | units |
|-------------------|----------------------------------------|-------|-----|-----|-------|
| isolation voltage | primary to secondary                   | 4,242 |     |     | Vac   |
| safety standards  | UL, TUV, CE                            |       |     |     |       |
| EMI/EMC           | EN 61204-3 Class B, CISPR, FCC Class B |       |     |     |       |
| leakage current   |                                        |       |     | 3.5 | mA    |
| RoHS compliant    | yes                                    |       |     |     |       |

ENVIRONMENTAL

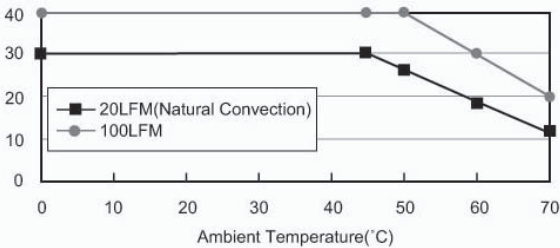
| parameter             | conditions/description | min | typ | max | units |
|-----------------------|------------------------|-----|-----|-----|-------|
| operating temperature | see derating curve     | 0   |     | 45  | °C    |
| storage temperature   |                        | -20 |     | 85  | °C    |

DERATING CURVES

All other models



VFM40-3512



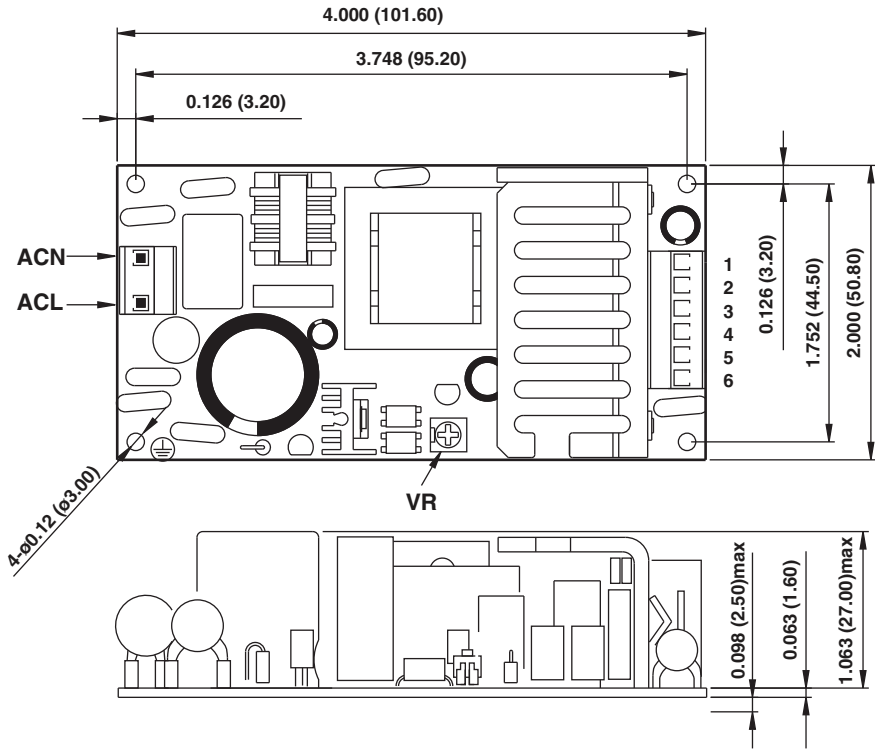
MECHANICAL

| parameter  | conditions/description                | min | typ | max | units |
|------------|---------------------------------------|-----|-----|-----|-------|
| dimensions | 4 x 2 x 1.2 (101.6 x 50.8 x 30.48 mm) |     |     |     | inch  |
| weight     |                                       |     | 180 |     | g     |

MECHANICAL DRAWING

units: inches (mm)  
tolerance: inches: x.xx = ±0.02  
mm: x.xx = ±0.5

| MATING CONNECTORS |                                            |
|-------------------|--------------------------------------------|
| CONNECTOR         | MOLEX                                      |
| AC input (CN1)    | housing: 09-50-3031<br>crimp contact: 2878 |
| DC output (CN2)   | housing: 09-50-3061<br>crimp contact: 2878 |



| PIN CONNECTIONS |          |
|-----------------|----------|
| PIN             | FUNCTION |
| 1               | V2       |
| 2               | V1       |
| 3               | V1       |
| 4               | COM      |
| 5               | COM      |
| 6               | V3       |

## REVISION HISTORY

| rev. | description                                                                                              | date       |
|------|----------------------------------------------------------------------------------------------------------|------------|
| 1.0  | initial release                                                                                          | 01/30/2007 |
| 1.01 | updated spec template and derating curves                                                                | 08/28/2007 |
| 1.03 | new template applied, V-Infinity branding removed, safety marks/standards and mechanical drawing updated | 08/17/2012 |

The revision history provided is for informational purposes only and is believed to be accurate.



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