



Chassis 3.77"L x 2.16"W x 1.0"H



PCB 2.28"L x 1.77"W x 0.85"H

- Single / Dual / Triple Outputs
- Universal 90 to 264VAC Input
- 3.3VDC to 24VDC Outputs
- 3,000VAC Input to Output Isolation
- PCB and Chassis Mount Packages
- Full Safety Approvals



| Model Number                          | Output Voltage | Output Amps | Output Watts | Ripple & Noise max. (Note 2) | Line/Load Reg. max. (Note 3) | Efficiency |
|---------------------------------------|----------------|-------------|--------------|------------------------------|------------------------------|------------|
| <b>SINGLE OUTPUT - PCB Mount</b>      |                |             |              |                              |                              |            |
| MSCA-5000                             | 3.3 VDC        | 1.25        | 4W           | 100mV pk-pk                  | 1% / 2%                      | 62% nom.   |
| MSCA-5001                             | 5 VDC          | 1           | 5W           | 75mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCA-5002                             | 12 VDC         | 0.42        | 5W           | 50mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCA-5003                             | 15 VDC         | 0.33        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 71% nom.   |
| MSCA-5005                             | 24 VDC         | 0.23        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 72% nom.   |
| <b>SINGLE OUTPUT - Chassis Mount</b>  |                |             |              |                              |                              |            |
| MSCC-5000                             | 3.3 VDC        | 1.25        | 4W           | 100mV pk-pk                  | 1% / 2%                      | 62% nom.   |
| MSCC-5001                             | 5 VDC          | 1           | 5W           | 75mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCC-5002                             | 12 VDC         | 0.42        | 5W           | 50mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCC-5003                             | 15 VDC         | 0.33        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 71% nom.   |
| MSCC-5005                             | 24 VDC         | 0.23        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 72% nom.   |
| <b>SINGLE OUTPUT - DIN Rail Mount</b> |                |             |              |                              |                              |            |
| MSCC-5000/DRL                         | 3.3 VDC        | 1.25        | 4W           | 100mV pk-pk                  | 1% / 2%                      | 62% nom.   |
| MSCC-5001/DRL                         | 5 VDC          | 1           | 5W           | 75mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCC-5002/DRL                         | 12 VDC         | 0.42        | 5W           | 50mV pk-pk                   | 1% / 1%                      | 71% nom.   |
| MSCC-5003/DRL                         | 15 VDC         | 0.33        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 71% nom.   |
| MSCC-5005/DRL                         | 24 VDC         | 0.23        | 5W           | 50mV pk-pk                   | 0.5% / 0.5%                  | 72% nom.   |

These Specifications are subject to change at any time without prior notification

All specifications are typical at nominal input, full load, and 25DegC unless otherwise noted

\* These are stress ratings. Exposure of the devices to any of these conditions may adversely affect long term reliability. Proper operation under conditions other than the standard operating conditions is neither warranted nor implied.



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| Model Number                          | Output Voltage | Output Amps | Output Watts | Ripple & Noise max. (Note 2) | Line/Load Reg. max. (Note 3) | Efficiency |
|---------------------------------------|----------------|-------------|--------------|------------------------------|------------------------------|------------|
| <b>DUAL OUTPUT - PCB Mount</b>        |                |             |              |                              |                              |            |
| MDCA-5006                             | ±12 VDC        | ±0.21       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 66% nom.   |
| MDCA-5007                             | ±15 VDC        | ±0.18       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 67% nom.   |
| <b>DUAL OUTPUT - Chassis Mount</b>    |                |             |              |                              |                              |            |
| MDCC-5006                             | ±12 VDC        | ±0.21       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 66% nom.   |
| MDCC-5007                             | ±15 VDC        | ±0.18       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 67% nom.   |
| <b>DUAL OUTPUT - DIN Rail Mount</b>   |                |             |              |                              |                              |            |
| MDCC-5006/DRL                         | ±12 VDC        | ±0.21       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 66% nom.   |
| MDCC-5007/DRL                         | ±15 VDC        | ±0.18       | 5W           | 100mV pk-pk                  | 0.5% / 2%                    | 67% nom.   |
| <b>TRIPLE OUTPUT - PCB Mount</b>      |                |             |              |                              |                              |            |
| MTCA-5009                             | +5,±12 VDC     | 0.6, ±0.1   | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 63% nom.   |
| MTCA-5011                             | +5,±15 VDC     | 0.45, ±0.1  | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 61% nom.   |
| <b>TRIPLE OUTPUT - Chassis Mount</b>  |                |             |              |                              |                              |            |
| MTCC-5009                             | +5,±12 VDC     | 0.6, ±0.1   | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 63% nom.   |
| MTCC-5011                             | +5,±15 VDC     | 0.45, ±0.1  | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 61% nom.   |
| <b>TRIPLE OUTPUT - DIN Rail Mount</b> |                |             |              |                              |                              |            |
| MTCC-5009/DRL                         | +5,±12 VDC     | 0.6, ±0.1   | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 63% nom.   |
| MTCC-5011/DRL                         | +5,±15 VDC     | 0.45, ±0.1  | 5W           | 50, ±75mV pk-pk              | 0.6%, ±0.2 / 0.5%            | 61% nom.   |

**INPUT SPECIFICATIONS**

|                         |                                 |
|-------------------------|---------------------------------|
| Input Voltage           | 90-264VAC (100-240VAC Nominal)  |
| Input Frequency         | 47-440 Hz, 50-60Hz Nom.         |
| Input Current (LL/HL)   | 0.2A / 0.1A                     |
| Inrush Current (Note 1) | 20A @ 100Vin, 40A @ 200Vin, typ |
| Leakage Current         | <3.5mA at 264VAC, 50Hz          |

**OUTPUT SPECIFICATIONS**

|                               |                               |
|-------------------------------|-------------------------------|
| Output Voltage/Current        | See Model Selection Chart     |
| Preset Accuracy               |                               |
| Single & Dual O/P:            | ±1% nom.                      |
| Triple O/P: (5, ±O/P)         | ±1%, ±5% nom.                 |
| Voltage Adjust                | ±6%, typ                      |
| Load/Line Regulation (Note 3) | See Model Selection Chart     |
| Cross Regulation (Note 11)    |                               |
| Dual O/P:                     | 3% max.                       |
| Triple O/P: (5, ±O/P)         | N/A, ±0.5% max.               |
| Temperature Coefficient       | ±0.03%/°C                     |
| Ripple/Noise (Note 2)         | See Model Selection Chart     |
| Over Voltage Protection       | Clamp*                        |
| Turn On Delay Time            | <1S                           |
| Hold Up Time                  |                               |
| Single O/P:                   | 30mS, typ                     |
| Multi O/P:                    | 20mS, typ                     |
| Rise Time                     | <20mS                         |
| Over-Shoot/Under-Shoot        | <10% nominal O/P voltage      |
| Short Circuit Protection      | Continuous, self-recovering * |

**GENERAL SPECIFICATIONS**

|                                |   |
|--------------------------------|---|
| On/Off Control (Note 4)        | Open Collector Logic "1"/Open=ON<br>Logic "0"/GND=OFF |
| Input-Output Isolation         | 3000VAC, 60S  |
| Insulation Resistance (Note 6) | ≥ 20M Ω   |
| Operating Frequency            | 140 Khz, typ., fixed                                  |
| Efficiency                     | See Model Selection Chart                             |
| Safety UL/cUL:                 | UL60950-1 2nd ed./<br>C22.2 60950-1 2nd ed.           |
| UL-EU:                         | EN60950-1 2nd ed.                                     |
| CE:                            | EN60601-1-2   |
| CB:                            | IEC60950-1 2nd ed.                                    |

**ENVIRONMENTAL SPECIFICATIONS**

|                                 |   |
|---------------------------------|---|
| Oper. Temperature               | 0 to +50°C FL See Derate *<br>(Free-air Convection) |
| Relative Humidity (Note 5)      | 0-95%, Non-Condensing                               |
| Storage Temperature             | -25 to +71°C *                                      |
| MTBF, Single/Multi O/P (Note 9) | 180,000 / 110,000 Hrs                               |
| Vibration (Note 10)             | 2G Peak, 10-500Hz, 3 Axes                           |
| Drop Test                       | 70 cm   |
| EMS ESD:                        | EN61000-4-2, 6kV Contact, 8kV Air                   |
| RS: (Note 7)                    | EN61000-4-3   |
| EFT:                            | EN61000-4-4, 2kV on AC Line                         |
| Surge:                          | EN61000-4-5, 1kV L-N                                |
| CS:                             | EN61000-4-6, 3V EMF                                 |
| Dips: (Note 8)                  | EN61000-4-11  |
| EMI                             | CISPR EN55011 class B                               |

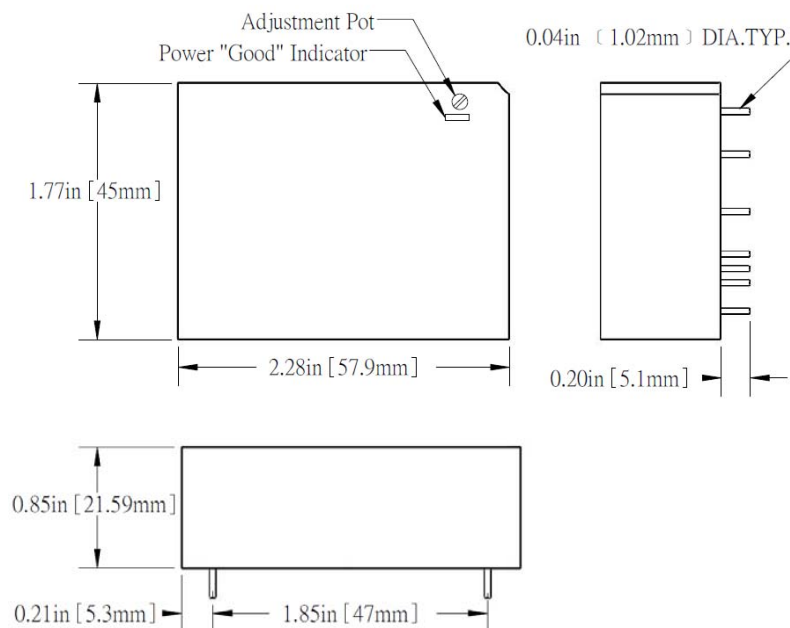
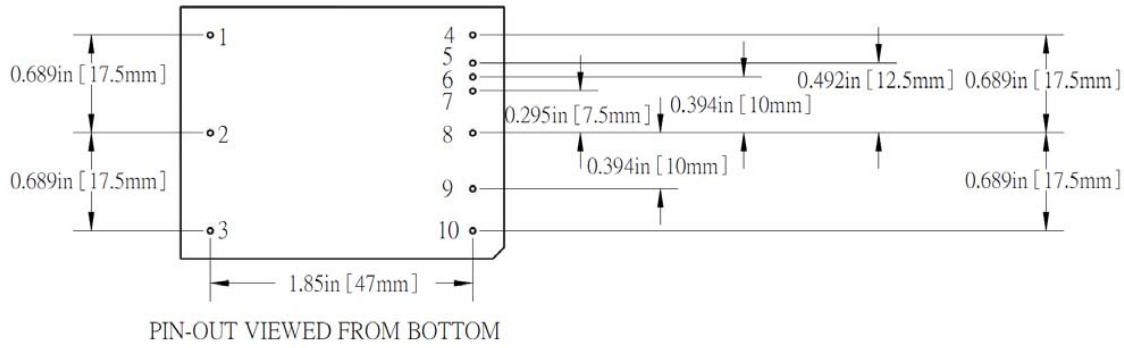
**PHYSICAL SPECIFICATIONS**

|                  |                             |
|------------------|-----------------------------|
| Case Material    | Rynite, 94V-0 Rated         |
| Construction     | Encapsulated, Soft Pot      |
| Weight PCB / CHA | 4 oz (113g) / 8.5 oz (241g) |

Notes:

1. Cold Start and 25°C
2. Test by dc loading side parallel with a 0.1uF ceramic capacitor and measured band-width with DC-20MHz.
3. Regulation includes line, cross temperature drift, tolerance variation  
Load regulation measured from 20% to Full load. All other outputs at nominal load.
4. No termination necessary with Control pin to maintain constant "On" operation.
5. Operating or Storage
6. 500Vdc, 1 Sec between primary to secondary
7. FR: 80MHz-2.5GHz; Field Strength 3V/M
8. 95% 250Cy, 70% 25Cy, 40% 5Cy, 5% 0.5Cy
9. MIL STD 217, 25°C
10. Tested with shipping container for 30 minutes
11. Measured at nominal load with the other output(s) varied between 20% and 100% nominal load.

### MECHANICAL DIMENSIONS - PCB MOUNT

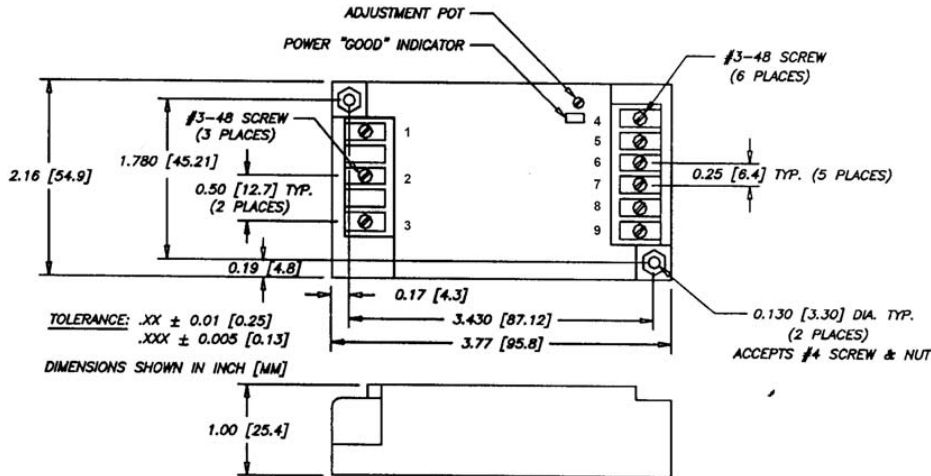


| Model Type / Pin# | Single | Dual    | Unmatched Dual | Triple  |
|-------------------|--------|---------|----------------|---------|
| 1                 | AC HI  | AC HI   | AC HI          | AC HI   |
| 2                 | AC LO  | AC LO   | AC LO          | AC LO   |
| 3                 | GND    | GND     | GND            | GND     |
| 4                 | No Pin | No Pin  | No Pin         | +Vout   |
| 5                 | No Pin | No Pin  | No Pin         | Out Com |
| 6                 | +Vout  | +Vout   | +12Vout        | No Pin  |
| 7                 | No Pin | No Pin  | No Pin         | -Vout   |
| 8                 | No Pin | Out Com | +5Vout         | +5Vout  |
| 9                 | -Vout  | -Vout   | Out Com        | 5V Ret  |
| 10                | Ctrl   | Ctrl    | Ctrl           | Ctrl    |

Tolerance : .XX ± 0.02 (0.508)  
 .XXX ± 0.01 (0.254)

Dimensions shown in inch (mm)

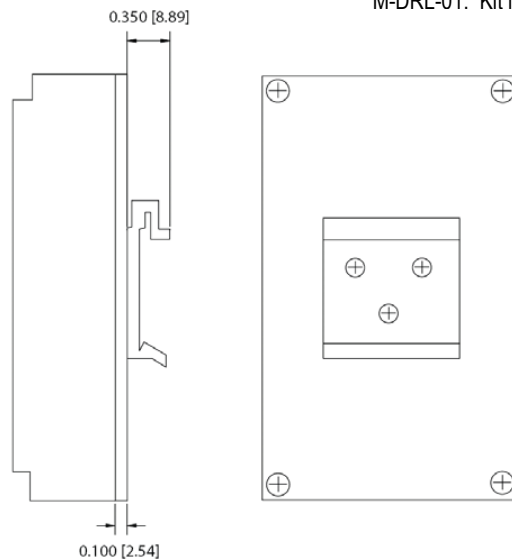
### MECHANICAL DIMENSIONS - CHASSIS MOUNT



| Model Type / Pin# | Single | Match Dual | Unmatch Dual | Triple  |
|-------------------|--------|------------|--------------|---------|
| 1                 | AC LO  | AC LO      | AC LO        | AC LO   |
| 2                 | GND    | GND        | GND          | GND     |
| 3                 | AC HI  | AC HI      | AC HI        | AC HI   |
| 4                 | Ctrl   | Ctrl       | Ctrl         | Ctrl    |
| 5                 | -Vout  | -Vout      | Com          | +5 Ret  |
| 6                 | -Vout  | Com        | Com          | +5Vout  |
| 7                 | +Vout  | Com        | +5Vout       | -Vout   |
| 8                 | +Vout  | +Vout      | +12Vout      | +/- Com |
| 9                 | N/C    | N/C        | N/C          | +Vout   |

### MECHANICAL DIMENSIONS - DIN RAIL

DIN Rail mounting kit available for Chassis-mount modules, specify part # M-DRL-01. Kit includes mounting plate, DIN Rail clip and assembly hardware.



**DERATE CURVE**

