



## PCB-MOUNT DC-DC CONVERTER ENCAPSULATED MODULES 30 WATTS SINGLE OUTPUT HDM30-S SERIES



### FEATURES:

- SINGLE OUTPUT
- WIDE 4:1 & 2:1 INPUT RANGE
- 30W ISOLATED OUTPUT
- SIX-SIDED SHIELD

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** Wide 4:1 & 2:1 DC input range.  
See Ratings Chart.

**Input Voltage:** Nominal 12/24/48Vdc.

**Input Current:** Various with input range and load.  
See Ratings Chart.

**Input Fuse:** Use external fuse.

**Input Filter:** Pi-Network.

**Overvoltage Shutdown:** Optional. Factory set.

**Undervoltage Shutdown:** 8Vdc.

**Isolation Resistor:** 1,000 Mega Ohms.

**Isolation Voltage:** 1,500Vdc.

**EMI:** Six-sided metal shielding.

**Remote On/Off:** TTL/CMOS-Compatible Input Control.  
(Voltage refer to the -Input)

**Positive Logic** version for Standard set up:  
ON(Enable)=Open(or 2.5-5.0Vdc above-Vin).  
OFF(Disable)=Short(or 0-0.8Vdc above-Vin).

**Negative Logic** version option available by adding a  
"N" suffix to the end of Model #.

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Voltage Accuracy:** Main O/P  $\pm 2.0\%$  typical.

**Line Regulation:** Various with input & output voltages.  
 $\pm 0.5\%$  typical.

**Load Regulation:** Various with output voltages.  
 $\pm 1.0\%$  typical.

**Noise & Ripple:** Typical 100mV for 3.3V/5.0V &  
1.0% for others peak to peak.

**OVP:** Built-in on main output.

**Overload Protection (OLP):**  
Fully protected against output overload and short circuit.  
OLP set at about 125-150% rating output wattage.  
Consult the factory for OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** 81% typical various with input.

**Switching Frequency:** Fixed frequency 100K Hz.

**Circuit Topology:** Forward Circuit.

**Transient Response:** Peak deviation 200mV,  
Recovery time < 3mSec. @ 25% step load change.

**Case:** Black coated copper with non-conductive  
metal base.

**Power Density:** 10 Watts. / Cubic inch.

**MTBF:** Type 1,000,000 hours to Mil. Std.217, 25°C.

**Operating Temperature:** -10 to +70°C range.  
0°C to +60°C full load without derating.  
From +60°C, derating linearly to half load @ +70°C.  
(Refer to Derating Chart.)

**Temperature:** -20°C to +85°C.

**Temperature Coefficient:** 0.02% /°C.

**Cooling:** Convection cooling up to +60°C @ full load.  
At least 100LFM moving air is recommended for  
full load > +60°C in a confined area.

**Humidity:** Up to 95%RH, Non-condensing.

**Commercial Grade only.**

**NOTE:** (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.  
(2) Line Regulation measured from High to Low Lines at full load.  
(3) Load Regulation measured from Full Load to 1/2 Full Load at nominal input.  
(4) Correct fuse size by calculating the max. DC current drain at low Line input & Load and then adding 20-25% for the desired fuse size.

## INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

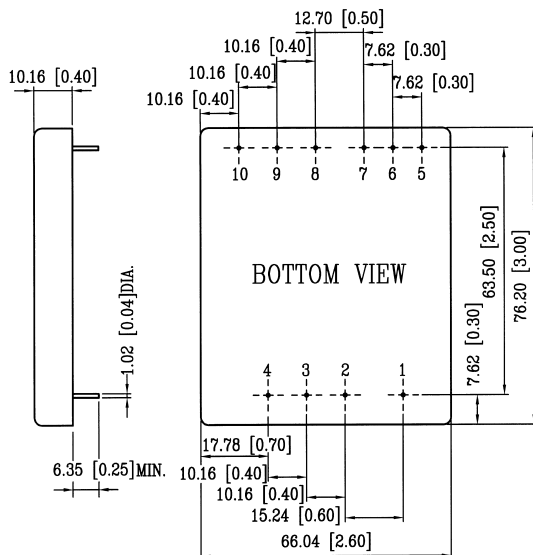
## SINGLE OUTPUT

| MODEL NO.     | INPUT<br>Vdc | INPUT CURRENT<br>N. L. (mA) F.L. |      | OUTPUT<br>VO1(Vdc) @★ | OUTPUT<br>VO1(A) | CASE<br>SIZE |
|---------------|--------------|----------------------------------|------|-----------------------|------------------|--------------|
| HDM30-12B-S03 | 9.0- 18.0    | 30                               | 2300 | 3.3V                  | 6.40A            | DM2A         |
| HDM30-12B-S05 | 9.0- 18.0    | 30                               | 2700 | 5.0V                  | 5.00A            | DM2A         |
| HDM30-12B-S09 | 9.0- 18.0    | 30                               | 2650 | 9.0V                  | 2.80A            | DM2A         |
| HDM30-12B-S12 | 9.0- 18.0    | 30                               | 2750 | 12.0V                 | 2.20A            | DM2A         |
| HDM30-12B-S15 | 9.0- 18.0    | 30                               | 2800 | 15.0V                 | 1.80A            | DM2A         |
| HDM30-12B-S24 | 9.0- 18.0    | 30                               | 3100 | 24.0V                 | 1.25A            | DM2A         |
| HDM30-24B-S03 | 18.0- 36.0   | 20                               | 1150 | 3.3V                  | 6.40A            | DM2A         |
| HDM30-24B-S05 | 18.0- 36.0   | 20                               | 1350 | 5.0V                  | 5.00A            | DM2A         |
| HDM30-24B-S09 | 18.0- 36.0   | 20                               | 1325 | 9.0V                  | 2.80A            | DM2A         |
| HDM30-24B-S12 | 18.0- 36.0   | 20                               | 1375 | 12.0V                 | 2.20A            | DM2A         |
| HDM30-24B-S15 | 18.0- 36.0   | 20                               | 1400 | 15.0V                 | 1.80A            | DM2A         |
| HDM30-24B-S24 | 18.0- 36.0   | 20                               | 1550 | 24.0V                 | 1.25A            | DM2A         |
| HDM30-48B-S03 | 36.0- 72.0   | 15                               | 575  | 3.3V                  | 6.40A            | DM2A         |
| HDM30-48B-S05 | 36.0- 72.0   | 15                               | 675  | 5.0V                  | 5.00A            | DM2A         |
| HDM30-48B-S09 | 36.0- 72.0   | 15                               | 662  | 9.0V                  | 2.80A            | DM2A         |
| HDM30-48B-S12 | 36.0- 72.0   | 15                               | 687  | 12.0V                 | 2.20A            | DM2A         |
| HDM30-48B-S15 | 36.0- 72.0   | 15                               | 700  | 15.0V                 | 1.80A            | DM2A         |
| HDM30-48B-S24 | 36.0- 72.0   | 15                               | 775  | 24.0V                 | 1.25A            | DM2A         |
| HDM30-24D-S03 | 9.0- 36.0    | 30                               | 1175 | 3.3V                  | 6.40A            | DM2A         |
| HDM30-24D-S05 | 9.0- 36.0    | 30                               | 1375 | 5.0V                  | 5.00A            | DM2A         |
| HDM30-24D-S09 | 9.0- 36.0    | 30                               | 1350 | 9.0V                  | 2.80A            | DM2A         |
| HDM30-24D-S12 | 9.0- 36.0    | 30                               | 1400 | 12.0V                 | 2.20A            | DM2A         |
| HDM30-24D-S15 | 9.0- 36.0    | 30                               | 1425 | 15.0V                 | 1.80A            | DM2A         |
| HDM30-24D-S24 | 9.0- 36.0    | 30                               | 1575 | 24.0V                 | 1.25A            | DM2A         |
| HDM30-48D-S03 | 20.0- 72.0   | 20                               | 587  | 3.3V                  | 6.40A            | DM2A         |
| HDM30-48D-S05 | 20.0- 72.0   | 20                               | 687  | 5.0V                  | 5.00A            | DM2A         |
| HDM30-48D-S09 | 20.0- 72.0   | 20                               | 675  | 9.0V                  | 2.80A            | DM2A         |
| HDM30-48D-S12 | 20.0- 72.0   | 20                               | 700  | 12.0V                 | 2.20A            | DM2A         |
| HDM30-48D-S15 | 20.0- 72.0   | 20                               | 712  | 15.0V                 | 1.80A            | DM2A         |
| HDM30-48D-S24 | 20.0- 72.0   | 20                               | 787  | 24.0V                 | 1.25A            | DM2A         |

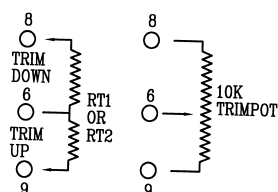
**Symbols:** "★" OVP built-in.      "@" Adjustable.

### MECHANICAL DIMENSIONS: MM [INCHES]

**WEIGHT:** 156.0g (5.6 Oz.)



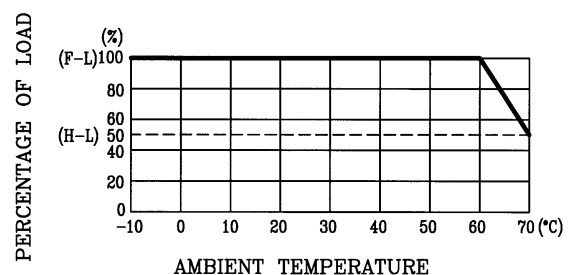
**CASE SIZE: DM2A**



## PIN ASSIGNMENT

| PIN NO.  | SINGLE        |
|----------|---------------|
| PIN #1.  | Remote ON/OFF |
| PIN #2.  | +INPUT        |
| PIN #3.  | -INPUT/-Vin   |
| PIN #4.  | NO PIN        |
| PIN #5.  | NO PIN        |
| PIN #6.  | OUTPUT TRIM   |
| PIN #7.  | NO PIN        |
| PIN #8.  | +VO1          |
| PIN #9.  | DC-COM        |
| PIN #10. | NO PIN        |

## DERATING CHART





## PCB-MOUNT DC-DC CONVERTER ENCAPSULATED MODULES 30 WATTS DUAL OUTPUT HDM30-D SERIES



### FEATURES:

- DUAL OUTPUT
- WIDE 4:1 & 2:1 INPUT RANGE
- 30W ISOLATED OUTPUT
- SIX-SIDED METAL SHIELD

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** Wide 4:1 & 2:1 DC input range.  
See Ratings Chart.

**Input Voltage:** Nominal 12/24/48Vdc.

**Input Current:** Various with input range and load.  
See Ratings Chart.

**Input Fuse:** Use external fuse.

**Input Filter:** Pi-Network.

**Overvoltage Shutdown:** Optional. Factory set.

**Undervoltage Shutdown:** 8Vdc.

**Isolation Resistor:** 1,000 Mega Ohms.

**Isolation Voltage:** 1,500Vdc.

**EMI:** Six-sided metal shielding.

**Remote On/Off:** TTL/CMOS-Compatible Input Control.  
(Voltage refer to the -Input).

**Positive Logic** version for Standard set up:  
**ON(Enable)**=Open(or 2.5-5.0Vdc above-Vin).  
**OFF(Disable)**=Short(or 0-0.8Vdc above-Vin).

**Negative Logic** version option available by adding a  
 "N" suffix to the end of Model #.

Remark: Logic voltage refer to -Input (-Vin)

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Voltage Accuracy:** Main O/P  $\pm 2.0\%$  typical.

**Line Regulation:** Various with input voltages.  
 $\pm 0.5\%$  typical.

**Load Regulation:** Various with output voltages.  
 VO1  $\pm 1.0\%$  typical.  
 VO2  $\pm 2.0\%$  typical.

**Noise & Ripple:** 100mV for 3.3V/5.0V & 1.0% typical  
 for other output peak to peak.

**OVP:** Built-in on main output.

**Adjustability:** VO1 O/P may optionally be external  
 trimmed  $\pm 3.0\%$  with a fixed resistors or trim-pot.

**Overload Protection (OLP):**  
 Fully protected against output overload and short circuit.  
 OLP set at about 125-150% rating output wattage.  
 Consult the factory for OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** 76- 81% typical, various with input &  
 output voltage.

**Switching Frequency:** Fixed frequency 100K Hz.

**Circuit Topology:** 100K Hz. Forward Circuit.

**Transient Response:** Peak deviation 200mV,  
 Recovery time < 3mSec. @ 25% step load change.

**Case:** Black coated copper with non-conductive metal base.

**Power Density:** 10.0 Watts. / Cubic inch.

**MTBF:** 1,000,000 hours to Mil. Std. 271, 25°C.

**Operating Temperature:** -10°C to +70°C range.  
 0°C to +60°C @ full load without derating.  
 From +60°C, derating linearly to half load@+70°C.  
 (Refer to the Derating Chart).

**Temperature:** -20°C to +85°C.

**Temperature Coefficient:**  $\pm 0.03\%$  /°C.

**Cooling:** Convection cooling up to +60°C @ full load.  
 At least 100LFM moving air is recommended  
 for F-L > +60°C in a confined area.

**Humidity:** Up to 95%RH, Non-condensing.

**Commercial Grade only.**

**NOTE:** (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.  
 (2) Line Regulation measured from High to Low Lines at full load.  
 (3) Load Regulation measured from Full Load to 1/2 Full Load at nominal input.  
 (4) Correct fuse size by calculating the max. DC current drains at low Line input & Load and then adding 20-25% for the desired fuse size.

Due to requests in market and advances in technology, specifications subject to change without notice.

## INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

## DUAL OUTPUT

| MODEL NO.     | INPUT<br>Vdc | INPUT CURRENT |       | OUTPUT (Vdc) |        | OUTPUT (A) |       | CASE<br>SIZE |
|---------------|--------------|---------------|-------|--------------|--------|------------|-------|--------------|
|               |              | N.L. (mA)     | F.L.  | +VO1@★       | -VO2   | +VO1       | -VO2  |              |
| HDM30-12B-D05 | 9.0- 18.0    | 30            | 2,670 | +5.0V        | -5.0V  | 2.50A      | 2.50A | DM2A         |
| HDM30-12B-D12 | 9.0- 18.0    | 30            | 2,500 | +12.0V       | -12.0V | 1.00A      | 1.00A | DM2A         |
| HDM30-12B-D15 | 9.0- 18.0    | 30            | 2,590 | +15.0V       | -15.0V | 0.83A      | 0.83A | DM2A         |
| HDM30-24B-D05 | 18.0- 36.0   | 20            | 1,560 | +5.0V        | -5.0V  | 3.00A      | 3.00A | DM2A         |
| HDM30-24B-D12 | 18.0- 36.0   | 20            | 1,525 | +12.0V       | -12.0V | 1.25A      | 1.25A | DM2A         |
| HDM30-24B-D15 | 18.0- 36.0   | 20            | 1,525 | +15.0V       | -15.0V | 1.00A      | 1.00A | DM2A         |
| HDM30-48B-D05 | 36.0- 72.0   | 20            | 780   | +5.0V        | -5.0V  | 3.00A      | 3.00A | DM2A         |
| HDM30-48B-D12 | 36.0- 72.0   | 20            | 763   | +12.0V       | -12.0V | 1.25A      | 1.25A | DM2A         |
| HDM30-48B-D15 | 36.0- 72.0   | 20            | 763   | +15.0V       | -15.0V | 1.00A      | 1.00A | DM2A         |
| HDM30-24D-D05 | 9.0- 36.0    | 40            | 1,350 | + 5.0V       | - 5.0V | 2.50A      | 2.50A | DM2A         |
| HDM30-24D-D12 | 9.0- 36.0    | 40            | 1,265 | +12.0V       | -12.0V | 1.00A      | 1.00A | DM2A         |
| HDM30-24D-D15 | 9.0- 36.0    | 40            | 1,310 | +15.0V       | -15.0V | 0.83A      | 0.83A | DM2A         |
| HDM30-48D-D05 | 20.0- 72.0   | 30            | 800   | +5.0V        | -5.0V  | 3.00A      | 3.00A | DM2A         |
| HDM30-48D-D12 | 20.0- 72.0   | 30            | 775   | +12.0V       | -12.0V | 1.25A      | 1.25A | DM2A         |
| HDM30-48D-D15 | 20.0- 72.0   | 30            | 775   | +15.0V       | -15.0V | 1.00A      | 1.00A | DM2A         |

**Symbols:** "★" OVP built-in.      "@" Adjustable.      "||" Double Feedback.

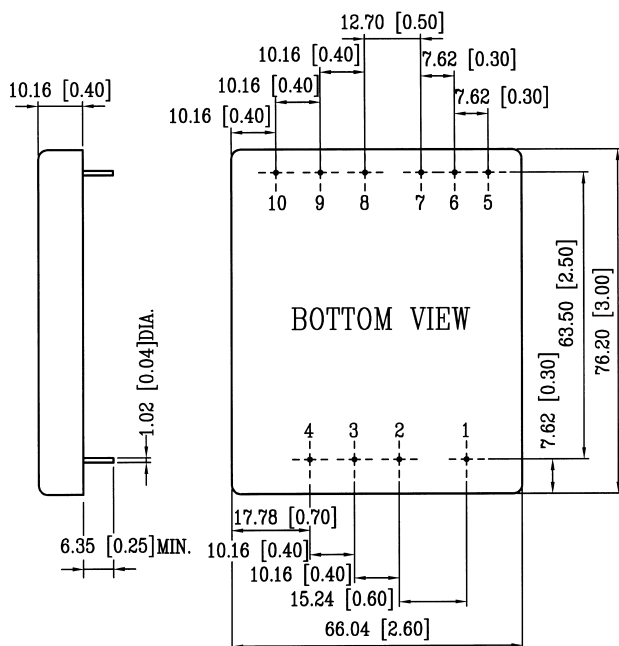
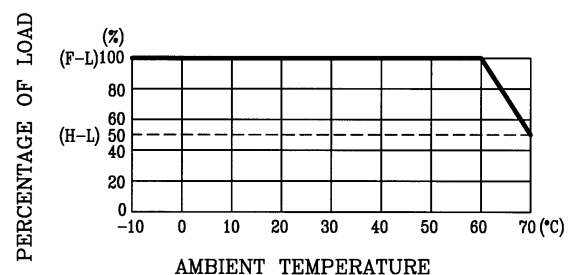
**MECHANICAL DIMENSIONS: MM [INCHES]**

**WEIGHT:** 156.0g (5.6 Oz.)

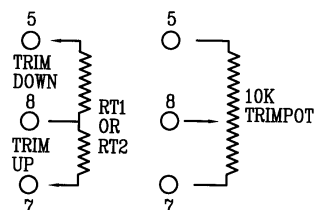
## PIN ASSIGNMENT

| PIN NO.  | DUAL          |
|----------|---------------|
| PIN# 1.  | Remote ON/OFF |
| PIN# 2.  | + INPUT       |
| PIN# 3.  | -INPUT/-Vin   |
| PIN# 4.  | NO PIN        |
| PIN# 5.  | +VO1          |
| PIN# 6.  | DC-COM        |
| PIN# 7.  | -VO2          |
| PIN# 8.  | OUTPUT TRIM   |
| PIN# 9.  | NO PIN        |
| PIN# 10. | NO PIN        |

## DERATING CHART



**CASE SIZE: DM2A**





## PCB-MOUNT DC-DC CONVERTER ENCAPSULATED MODULES 30 WATTS TRIPLE OUTPUT HDM30-T SERIES



### FEATURES:

- TRIPLE OUTPUT
- WIDE 4:1 & 2:1 INPUT RANGE
- 30W ISOLATED OUTPUT
- SIX-SIDED METAL SHIELD

### SPECIFICATION

#### INPUT SPECIFICATION

**Input Range:** Wide 4:1 & 2:1 DC input range.  
See Ratings Chart.

**Input Voltage:** Nominal 12/24/48Vdc.

**Input Current:** Various with input range and load.  
See Ratings Chart.

**Input Fuse:** Use external fuse.

**Input Filter:** Pi-Network.

**Overvoltage Shutdown:** Optional. Factory set.

**Undervoltage Shutdown:** 8Vdc.

**Isolation Resistor:** 1,000 Mega Ohms.

**Isolation Voltage:** 1,500Vdc.

**EMI:** Six-sided metal shielding.

**Remote On/Off:** TTL/CMOS-Compatible Input Control.

**Positive Logic** version for Standard set up:  
ON(Enable)=Open(or 2.5-5.0Vdc above-Vin)  
OFF(Disable)=Short(or 0-0.8Vdc above-Vin)

**Negative Logic** version option available by adding a  
“N” suffix to the end of Model #.

Remark: [Voltage refer to -Input (-Vin)].

#### OUTPUT SPECIFICATION

**Output Voltage:** See Ratings Chart.

**Output Current:** See Ratings Chart.

**Voltage Accuracy:** Main O/P  $\pm 2.0\%$  typical.

**Line Regulation:** Various with input voltages.  $\pm 0.5\%$  typ.

**Load Regulation:** Various with output voltages.  
VO1 & VO3  $\pm 2.0\%$  typical.  
VO2  $\pm 5.0\%$  typical.

**Noise & Ripple:** 100mV for 3.3V/5.0V & 1.0% typical  
for other output peak to peak.

**OVP:** Built-in on main output.

**Adjustability:** VO1 O/P may optionally be external  
trimmed  $\pm 3.0\%$  with a fixed resistors or trim-pot.

**Overload Protection (OLP):**  
Fully protected against output overload and short circuit.  
OLP set at about 125-150% rating output wattage.  
Consult the factory for OLP setting.

#### GENERAL SPECIFICATION

**Efficiency:** 78-81% typical, various with input &  
output voltage.

**Switching Frequency:** Fixed frequency 100K Hz.

**Circuit Topology:** 100K Hz. Forward Circuit.

**Transient Response:** Peak deviation 200mV,  
Recovery time < 3mSec. @ 25% step load change.

**Case:** Black coated copper with non-conductive metal base.

**Power Density:** 10.0 Watts. / Cubic inch.

**MTBF:** 1,000,000 hours Mil.Std.271, 25°C.

**Operating Temperature:** -10°C to +70°C range.  
0°C to +60°C @ full load without derating.  
From +60°C derating linearly to half load @ +70°C.  
(Refer to the Derating Chart).

**Storage Temperature:** -20 to +85°C.

**Temperature Coefficient:**  $\pm 0.03\%$  /°C.

**Cooling:** Convection cooling up to +60°C @ full load.  
At least 100LFM moving air is recommended for full  
load > +60°C in a confined area.

**Humidity:** Up to 95%RH, Non-condensing.

**Commercial Grade only.**

**NOTE:** (1) All measurements are at nominal input, full load, and +25°C unless otherwise specified.

(2) Line Regulation measured from High to Low Lines at full load.

(3) Load Regulation measured from Full Load to 1/2 Full Load at nominal input.

(4) Correct fuse size by calculating the max. DC current drains at low Line input & Load and then adding 20-25% for the desired fuse size.

Due to requests in market and advances in technology, specifications subject to change without notice.

# INPUT/OUTPUT & VOLTAGE/CURRENT RATINGS CHART

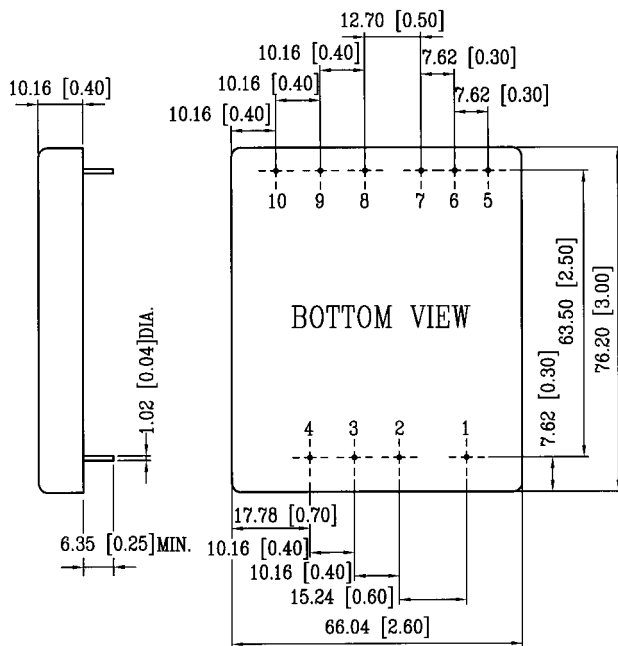
## TRIPLE OUTPUT

| MODEL NO.           | INPUT<br>Vdc | INPUT CURRENT |       | OUTPUT (Vdc) |        |        | OUTPUT (A) |      |      | CASE<br>SIZE |
|---------------------|--------------|---------------|-------|--------------|--------|--------|------------|------|------|--------------|
|                     |              | N.L. (mA)     | F.L.  | +VO1★@       | +VO2†  | -VO3   | +VO1       | +VO2 | -VO3 |              |
| HDM30-12B-T5/12     | 9.0- 18.0    | 50            | 2,550 | +5.0V        | +12.0V | -12.0V | 2.5A       | 0.5A | 0.5A | DM2A         |
| HDM30-12B-T5/15     | 9.0- 18.0    | 50            | 2,550 | +5.0V        | +15.0V | -15.0V | 2.5A       | 0.4A | 0.4A | DM2A         |
| HDM30-12B-T5/+12,-5 | 9.0- 18.0    | 50            | 2,500 | +5.0V        | +12.0V | - 5.0V | 2.5A       | 0.5A | 1.0A | DM2A         |
| HDM30-24B-T5/12     | 18.0- 36.0   | 40            | 1,520 | +5.0V        | +12.0V | -12.0V | 3.0A       | 0.6A | 0.6A | DM2A         |
| HDM30-24B-T5/15     | 18.0- 36.0   | 40            | 1,550 | +5.0V        | +15.0V | -15.0V | 3.0A       | 0.5A | 0.5A | DM2A         |
| HDM30-24B-T5/+12,-5 | 18.0- 36.0   | 40            | 1,420 | +5.0V        | +12.0V | - 5.0V | 3.0A       | 0.6A | 1.0A | DM2A         |
| HDM30-48B-T5/12     | 36.0- 72.0   | 40            | 760   | +5.0V        | +12.0V | -12.0V | 3.0A       | 0.6A | 0.6A | DM2A         |
| HDM30-48B-T5/15     | 36.0- 72.0   | 40            | 775   | +5.0V        | +15.0V | -15.0V | 3.0A       | 0.5A | 0.5A | DM2A         |
| HDM30-48B-T5/+12,-5 | 36.0- 72.0   | 40            | 710   | +5.0V        | +12.0V | - 5.0V | 3.0A       | 0.6A | 1.0A | DM2A         |
| HDM30-24D-T5/12     | 9.0- 36.0    | 60            | 1,325 | +5.0V        | +12.0V | -12.0V | 2.5A       | 0.5A | 0.5A | DM2A         |
| HDM30-24D-T5/15     | 9.0- 36.0    | 60            | 1,325 | +5.0V        | +15.0V | -15.0V | 2.5A       | 0.4A | 0.4A | DM2A         |
| HDM30-24D-T5/+12,-5 | 9.0- 36.0    | 60            | 1,300 | +5.0V        | +12.0V | - 5.0V | 2.5A       | 0.5A | 1.0A | DM2A         |
| HDM30-48D-T5/12     | 20.0- 72.0   | 50            | 785   | +5.0V        | +12.0V | -12.0V | 3.0A       | 0.6A | 0.6A | DM2A         |
| HDM30-48D-T5/15     | 20.0- 72.0   | 50            | 800   | +5.0V        | +15.0V | -15.0V | 3.0A       | 0.5A | 0.5A | DM2A         |
| HDM30-48D-T5/+12,-5 | 20.0- 72.0   | 50            | 735   | +5.0V        | +12.0V | - 5.0V | 3.0A       | 0.6A | 1.0A | DM2A         |

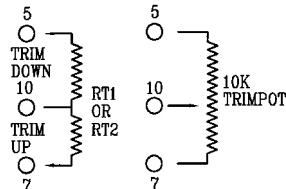
Symbols: "★" OVP built-in. "@" Adjustable. "||" Double Feedback. "†" Stacked on main O/P.

## MECHANICAL DIMENSIONS: MM [INCHES]

WEIGHT: 156.0g (5.6 Oz.)



CASE SIZE: DM2A



## PIN ASSIGNMENT

| PIN NO.  | TRIPLE        |
|----------|---------------|
| PIN# 1.  | Remote ON/OFF |
| PIN# 2.  | +INPUT        |
| PIN# 3.  | - INPUT/-Vin  |
| PIN# 4.  | NO PIN        |
| PIN# 5.  | +VO2          |
| PIN# 6.  | DC-COM        |
| PIN# 7.  | -VO3          |
| PIN# 8.  | + VO1         |
| PIN# 9.  | NO PIN        |
| PIN# 10. | OUTPUT TRIM   |

## DERATING CHART

