



# 500URD

## DC/DC Converter

### FEATURES

- Up to 80% Efficiency
- Single & Dual Output, 5-6 watt converter
- Available in 24 and 48 VDC Inputs 4 - 1 Input Range
- Industry Standard Pinout

### OUTPUT SPECS.

| PARAMETER                                               | CONDITIONS                                   | LIMITS       |
|---------------------------------------------------------|----------------------------------------------|--------------|
| TOTAL OUTPUT POWER                                      |                                              | 5 TO 6 WATTS |
| VOLTAGE & CURRENT                                       |                                              | SEE TABLE    |
| LINE REGULATION                                         |                                              |              |
| SINGLE OUTPUT (MIN. TO MAX. LINE @ MAX. LOAD)           |                                              | ±0.5%        |
| DUAL OUTPUT (MIN. TO MAX. LINE @ MAX. LOAD)             |                                              | ±0.5%        |
| LOAD REGULATION                                         |                                              |              |
| SINGLE OUTPUT (MAX. TO 10% LOAD @ NOM. LINE)            |                                              | ±0.5%        |
| DUAL OUTPUT (MAX. TO 25% LOAD @ NOM. LINE, EQUAL LOADS) |                                              | ±1%          |
| OUTPUT VOLTAGE BALANCE (DUAL) (EQUAL LOADS)             |                                              | ±1.0% MAX.   |
| OUTPUT VOLTAGE SETTING ACCURACY                         |                                              | ±2%          |
| TEMPERATURE COEFFICIENT                                 |                                              | ±0.05%/°C    |
| RIPPLE/NOISE                                            | FOR 3V/5V=75 MV P-P; FOR 12V/15V=1% P-P MAX. |              |
| SHORT CIRCUIT PROTECTION                                | CONTINUOUS, AUTOMATIC RECOVERY               |              |





## GENERAL SPECS.

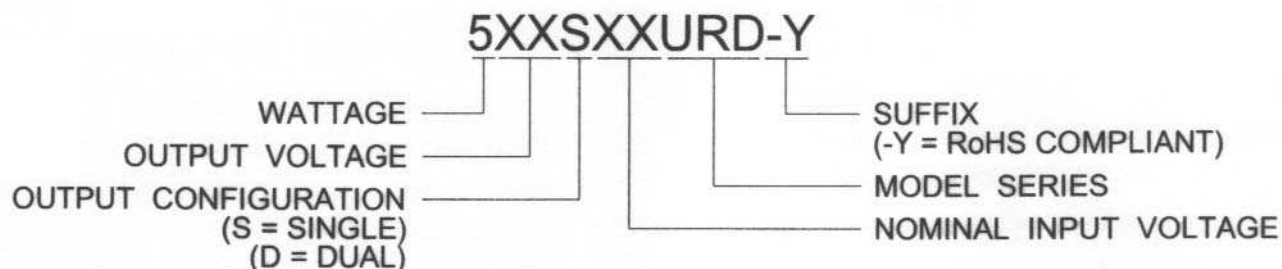
| <u>PARAMETER</u>     | <u>CONDITIONS</u> | <u>LIMITS</u>                |
|----------------------|-------------------|------------------------------|
| ISOLATION RESISTANCE |                   | 10 GOHMS MIN.                |
| ISOLATION VOLTAGE    |                   | 1500VDC MIN.                 |
| EFFICIENCY           |                   | SEE TABLE                    |
| SWITCHING FREQUENCY  |                   | 200KHZ MIN.                  |
| SIZE                 |                   | 1.25" X 0.80" X 0.40"        |
| CASE MATERIAL        |                   | NON-CONDUCTIVE BLACK PLASTIC |
| WEIGHT               |                   | 0.5 OZ.                      |

## ENVIRONMENTAL SPECS.

| <u>PARAMETER</u>                | <u>CONDITIONS</u> | <u>LIMITS</u>             |
|---------------------------------|-------------------|---------------------------|
| OPERATING TEMPERATURE (AMBIENT) |                   | -40°C TO +71°C            |
| MAX. CASE TEMPERATURE           |                   | +95°C                     |
| MATERIAL FLAMMABILITY           |                   | UL94V-0                   |
| RELATIVE HUMIDITY               |                   | UP TO 95%, NON-CONDENSING |



## PART NUMBER STRUCTURE



## SPECIFICATION TABLE

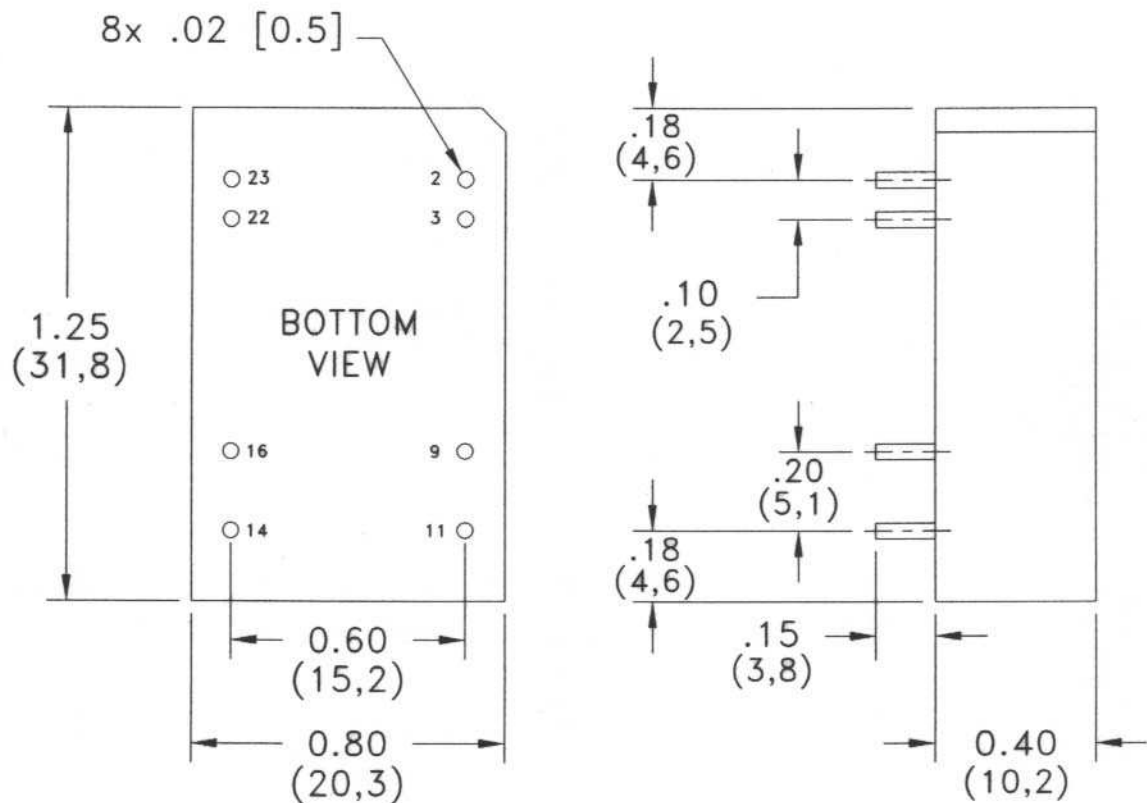
| MARTEK<br>MODEL<br>NUMBER | NOMINAL<br>INPUT<br>VOLTAGE<br>(VDC) | INPUT<br>VOLTAGE<br>RANGE<br>(VDC) | INPUT CURRENT      |                      | OUTPUT<br>VOLTAGE<br>(VDC) | OUTPUT<br>CURRENT<br>(mA) | % EFF.<br>@ F.L.<br>TYP. |
|---------------------------|--------------------------------------|------------------------------------|--------------------|----------------------|----------------------------|---------------------------|--------------------------|
|                           |                                      |                                    | NO LOAD<br>mA TYP. | FULL LOAD<br>mA TYP. |                            |                           |                          |
| 505S24URD                 | 24                                   | 9-36                               | 9                  | 267                  | 5                          | 1000                      | 78                       |
| 512S24URD                 | 24                                   | 9-36                               | 9                  | 294                  | 12                         | 470                       | 80                       |
| 515S24URD                 | 24                                   | 9-36                               | 9                  | 313                  | 15                         | 400                       | 80                       |
| 505S48URD                 | 48                                   | 18-72                              | 5                  | 134                  | 5                          | 1000                      | 78                       |
| 512S48URD                 | 48                                   | 18-72                              | 5                  | 147                  | 12                         | 470                       | 80                       |
| 515S48URD                 | 48                                   | 18-72                              | 5                  | 157                  | 15                         | 400                       | 80                       |
| 505D24URD                 | 24                                   | 9-36                               | 18                 | 267                  | ±5                         | ±500                      | 78                       |
| 512D24URD                 | 24                                   | 9-36                               | 18                 | 288                  | ±12                        | ±230                      | 80                       |
| 515D24URD                 | 24                                   | 9-36                               | 18                 | 297                  | ±15                        | ±190                      | 80                       |
| 505D48URD                 | 48                                   | 18-72                              | 8                  | 134                  | ±5                         | ±500                      | 78                       |
| 512D48URD                 | 48                                   | 18-72                              | 8                  | 144                  | ±12                        | ±230                      | 80                       |
| 515D48URD                 | 48                                   | 18-72                              | 8                  | 149                  | ±15                        | ±190                      | 80                       |
| 505S24URD-Y               | 24                                   | 9-36                               | 9                  | 267                  | 5                          | 1000                      | 78                       |
| 512S24URD-Y               | 24                                   | 9-36                               | 9                  | 294                  | 12                         | 470                       | 80                       |
| 515S24URD-Y               | 24                                   | 9-36                               | 9                  | 313                  | 15                         | 400                       | 80                       |
| 505S48URD-Y               | 48                                   | 18-72                              | 5                  | 134                  | 5                          | 1000                      | 78                       |
| 512S48URD-Y               | 48                                   | 18-72                              | 5                  | 147                  | 12                         | 470                       | 80                       |
| 515S48URD-Y               | 48                                   | 18-72                              | 5                  | 157                  | 15                         | 400                       | 80                       |
| 505D24URD-Y               | 24                                   | 9-36                               | 18                 | 267                  | ±5                         | ±500                      | 78                       |
| 512D24URD-Y               | 24                                   | 9-36                               | 18                 | 288                  | ±12                        | ±230                      | 80                       |
| 515D24URD-Y               | 24                                   | 9-36                               | 18                 | 297                  | ±15                        | ±190                      | 80                       |
| 505D48URD-Y               | 48                                   | 18-72                              | 8                  | 134                  | ±5                         | ±500                      | 78                       |
| 512D48URD-Y               | 48                                   | 18-72                              | 8                  | 144                  | ±12                        | ±230                      | 80                       |
| 515D48URD-Y               | 48                                   | 18-72                              | 8                  | 149                  | ±15                        | ±190                      | 80                       |

NOTE: ALL RoHS COMPLIANT PRODUCTS ARE DESIGNATED BY "-Y" SUFFIX.





## MECHANICAL SPECIFICATIONS



| PIN CONNECTIONS |        |        |
|-----------------|--------|--------|
| PIN NO.         | SINGLE | DUAL   |
| 2,3             | -V In  | -V In  |
| 9               | N/C    | COMMON |
| 11              | N/C    | -V Out |
| 14              | +V Out | +V Out |
| 16              | -V Out | COMMON |
| 22,23           | +V In  | +V In  |

### NOTES:

3. PIN TOLERANCE: .XXX =  $\pm 0.002$  [ $\pm 0.05$ ].

