



Unit measures 1.6"W x 2"L x 0.4"H

- Wide 2 : 1 Input Range
- High Efficiency
- Regulated Outputs
- 1600V Isolation
- Full EMI Shielding
- Standard Pinouts

| Model Number         | Output Voltage | Output Amps | Input Range |
|----------------------|----------------|-------------|-------------|
| <b>SINGLE OUTPUT</b> |                |             |             |
| FDC20-12S33          | 3.3 VDC        | 4           | 9-18 VDC    |
| FDC20-24S33          |                | 4           | 18-36 VDC   |
| FDC20-48S33          |                | 4           | 36-72 VDC   |
| FDC20-12S05          | 5 VDC          | 4           | 9-18 VDC    |
| FDC20-24S05          |                | 4           | 18-36 VDC   |
| FDC20-48S05          |                | 4           | 36-72 VDC   |
| FDC20-12S12          | 12 VDC         | 1.67        | 9-18 VDC    |
| FDC20-24S12          |                | 1.67        | 18-36 VDC   |
| FDC20-48S12          |                | 1.67        | 36-72 VDC   |
| FDC20-12S15          | 15 VDC         | 1.33        | 9-18 VDC    |
| FDC20-24S15          |                | 1.33        | 18-36 VDC   |
| FDC20-48S15          |                | 1.33        | 36-72 VDC   |
| <b>DUAL OUTPUT</b>   |                |             |             |
| FDC20-12D05          | +/-5 VDC       | +/-2        | 9-18 VDC    |
| FDC20-24D05          |                | +/-2        | 18-36 VDC   |
| FDC20-48D05          |                | +/-2        | 36-72 VDC   |
| FDC20-12D12          | +/-12 VDC      | +/-0.833    | 9-18 VDC    |
| FDC20-24D12          |                | +/-0.833    | 18-36 VDC   |
| FDC20-48D12          |                | +/-0.833    | 36-72 VDC   |
| FDC20-12D15          | +/-15 VDC      | +/-0.666    | 9-18 VDC    |
| FDC20-24D15          |                | +/-0.666    | 18-36 VDC   |
| FDC20-48D15          |                | +/-0.666    | 36-72 VDC   |



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|----------------------|----------------|-------------|-------------|
| <b>TRIPLE OUTPUT</b> |                |             |             |
| FDC20-12T3312        | 3.3, +/-12 VDC | 3, +/-0.3   | 9-18 VDC    |
| FDC20-24T3312        |                | 3, +/-0.3   | 18-36 VDC   |
| FDC20-48T3312        |                | 3, +/-0.3   | 36-72 VDC   |
| FDC20-12T3315        | 3.3, +/-15 VDC | 3, +/-0.25  | 9-18 VDC    |
| FDC20-24T3315        |                | 3, +/-0.25  | 18-36 VDC   |
| FDC20-48T3315        |                | 3, +/-0.25  | 36-72 VDC   |
| FDC20-12T0512        | 5, +/-12 VDC   | 2, +/-0.3   | 9-18 VDC    |
| FDC20-24T0512        |                | 2, +/-0.3   | 18-36 VDC   |
| FDC20-48T0512        |                | 2, +/-0.3   | 36-72 VDC   |
| FDC20-12T0515        | 5, +/-15 VDC   | 2, +/-0.25  | 9-18 VDC    |
| FDC20-24T0515        |                | 2, +/-0.25  | 18-36 VDC   |
| FDC20-48T0515        |                | 2, +/-0.25  | 36-72 VDC   |

**INPUT SPECIFICATIONS**

|                                |                |           |
|--------------------------------|----------------|-----------|
| Input Voltage Ranges:          | 12 VDC Nominal | 9-18 VDC  |
|                                | 24 VDC Nominal | 18-36 VDC |
|                                | 48 VDC Nominal | 36-72 VDC |
| Max. Voltage Surge (100mS max) | 12 VDC Nominal | 36 VDC    |
|                                | 24 VDC Nominal | 50 VDC    |
|                                | 48 VDC Nominal | 100 VDC   |
| Input Filter                   | Pi Type        |           |

**OUTPUT SPECIFICATIONS**

|                                   |                                |                              |
|-----------------------------------|--------------------------------|------------------------------|
| Voltage and Current               | See Selection Chart            |                              |
| Load Regulation                   | singles: +/-1%                 |                              |
| 25% - FL (single/dual)            | duals: +/-2%                   |                              |
| 10%-FL (triple)                   | 3.3/5 V: +/-2%, 12/15 V: +/-5% |                              |
| Line Regulation (Single/Dual)     | +/-0.2%                        |                              |
|                                   | (triple)                       | 3.3/5V: +/-1%, 12/15V: +/-5% |
| Temperature Coefficient           | +/-0.02%/DegC                  |                              |
| Ripple/Noise(Single/Dual/Triple)  | (75 / 100 / 1%) mV Pk-Pk, typ  |                              |
| Voltage Stability (+/-12, +/-15)  | +/- 2%, (+/-5%)                |                              |
| Transient Response Recovery       | 25% Load Step Change           | 500 microSeconds             |
|                                   | Short Circuit Protection       | Continuous, self-recovering  |
| Overvoltage Protection Threshold: | 3.3V Output                    | 3.9Volts                     |
|                                   | 5V Output                      | 6.2Volts                     |
|                                   | 12V Output                     | 15Volts                      |
|                                   | 15V Output                     | 18Volts                      |

**GENERAL SPECIFICATIONS**

|                      |                      |
|----------------------|----------------------|
| On/Off Control       | (Ref to - Input pin) |
|                      | Logic "1"/Open=ON    |
|                      | Logic "0"/GND=OFF    |
| Input-Out Isolation  | 1600VDC              |
| In/Out Capacitance   | 1000 pF              |
| Isolation Resistance | 10000 M Ohms         |
| Efficiency           | 81%, typ             |
| Switching Frequency  | 300Khz, Single typ   |

**ENVIRONMENTAL SPECIFICATIONS**

|                     |                             |
|---------------------|-----------------------------|
| Oper. Temperature   | -25 to +70 DegC(see derate) |
| Storage Temperature | -55 to +125 DegC *          |
| Maximum Case Temp   | 112 DegC *                  |
| MTBF                | 1.93 Mhrs                   |
|                     | MIL-HDBK-217F TA=25C FL     |

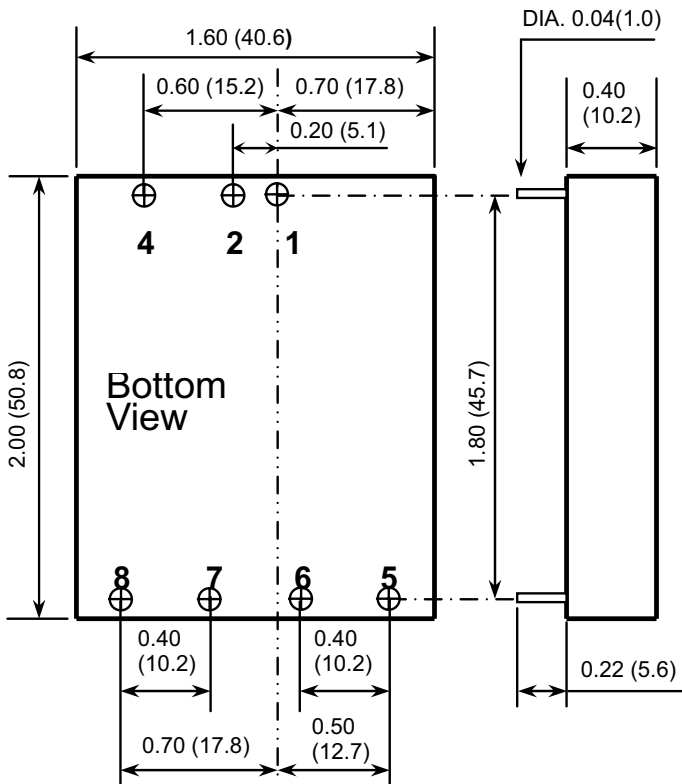
**PHYSICAL SPECIFICATIONS**

|                     |                           |
|---------------------|---------------------------|
| Case Material       | Nickel-Coated Copper      |
|                     | Non-Conductive Base       |
| Construction/Weight | Encapsulated/1.86oz (52g) |
| Size                | 1.6" x 2" x 0.4"          |
|                     | (40.64 x 50.8 x 10.16mm)  |

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.

**MECHANICAL DIMENSIONS**

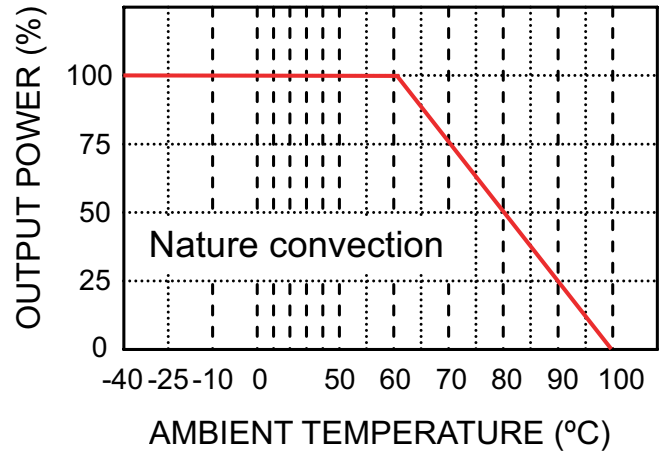


- All dimensions in Inches (mm)  
Tolerance: X.XX±0.02 (X.X±0.5)  
X.XXX±0.01 (X.XX±0.25)
- Pin pitch tolerance ±0.014(0.35)

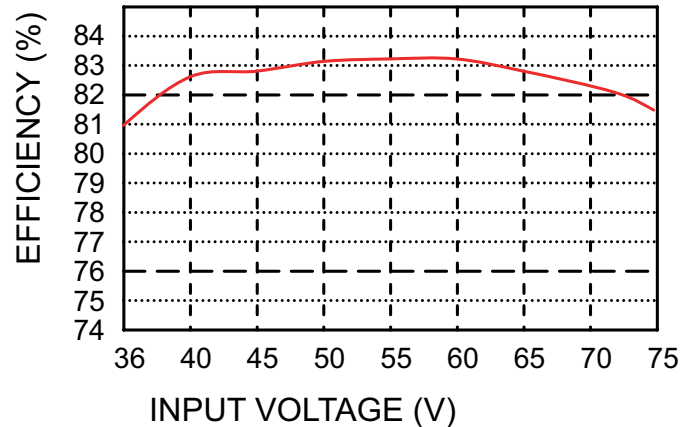
| Pin # | Single   | Dual     | Triple     |
|-------|----------|----------|------------|
| 1     | + Input  | + Input  | + Input    |
| 2     | - Input  | - Input  | - Input    |
| 3     | No Pin   | No Pin   | No Pin     |
| 4     | Control  | Control  | Control    |
| 5     | No Pin   | + Output | + Aux Out  |
| 6     | + Output | Common   | +5V, +3.3V |
| 7     | - Output | - Output | Common     |
| 8     | Trim     | Trim     | - Aux Out  |

**OUTPUT DERATING CURVE**

FDC20-48S05 Derating Curve



FDC20-48S05  
Efficiency VS Input Voltage



FDC20-48S05  
Efficiency VS Output load

