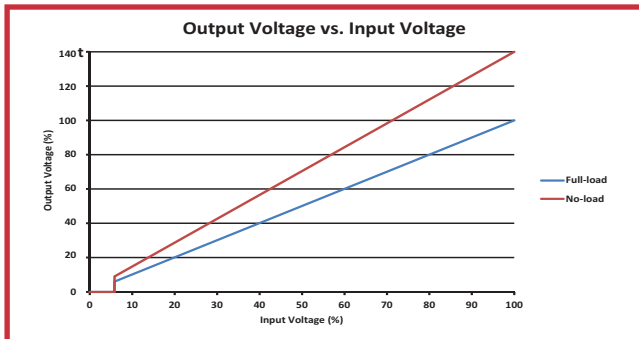




PRODUCT DESCRIPTION

The E Series is a broad line of small, versatile, component level building blocks in a PCB mount package that provide up to 7kV at 3 Watts continuous output power, (8kV at 2 Watts). This series features low ripple, noise, and EMI/RFI by utilizing a quasi-sinewave oscillator, excellent filtering techniques and a fully enclosed pot core transformer. The output voltage is directly proportional to the input voltage, and is linear from approximately 0.7 volts to maximum input. The isolated output allows for user selectable output polarity. Options include external aluminum box, a dual output option with center-tap pin which, when grounded, provides both positive and negative outputs from one low cost module.



APPLICATIONS

- Electrophoresis
- Capacitor Charging
- Field Generation
- Piezo Devices
- Mass Spectrometry
- Electrostatic Chuck
- Igniter / Spark Module
- Sustaining Ion Pumps

OPTIONS

- Dual output (Center Tap) Models Available (CT Suffix)
- External EMI/RFI Shield (AB Suffix)

PRODUCT SELECTION TABLE

| MODEL | OUTPUT VOLTAGE*2 | OUTPUT CURRENT*1 |
|------------------|------------------|------------------|
| E02 | 200V | 15mA |
| E02-5 | 250V | 12mA |
| E03 | 300V | 10mA |
| E05 | 500DV | 6.0mA |
| E06 | 600V | 5.0mA |
| E07-5 | 750V | 4.0mA |
| E08 | 800V | 3.7mA |
| E10 | 1kV | 3.0mA |
| E12 | 1.2kV | 2.5mA |
| E15 | 1.5kV | 2.0mA |
| E20 | 2kV | 1.5mA |
| E30 | 3kV | 1.0mA |
| E40 | 4kV | 0.75mA |
| E50 | 5kV | 0.60mA |
| E60 | 6kV | 0.50mA |
| E70 ⁷ | 7kV | 0.43mA |
| E80 ⁷ | 8kV | 0.25mA |

FEATURES

- Proportional Input/Output
- Compact, PCB Mount Package
- Low Ripple, Low EMI / RFI
- Proven Reliability
- Input/Output Isolation
- Low Leakage Current
- Low Input/Output Coupling Capacitance
- No External Components Required
- No Minimum Load Required
- MTBF: >2 Million Hours per Bellcore TR-332
- UL Certified Encapsulant, Meets 94V-0 Flammability
- Mounting Holes
- RoHS Compliant



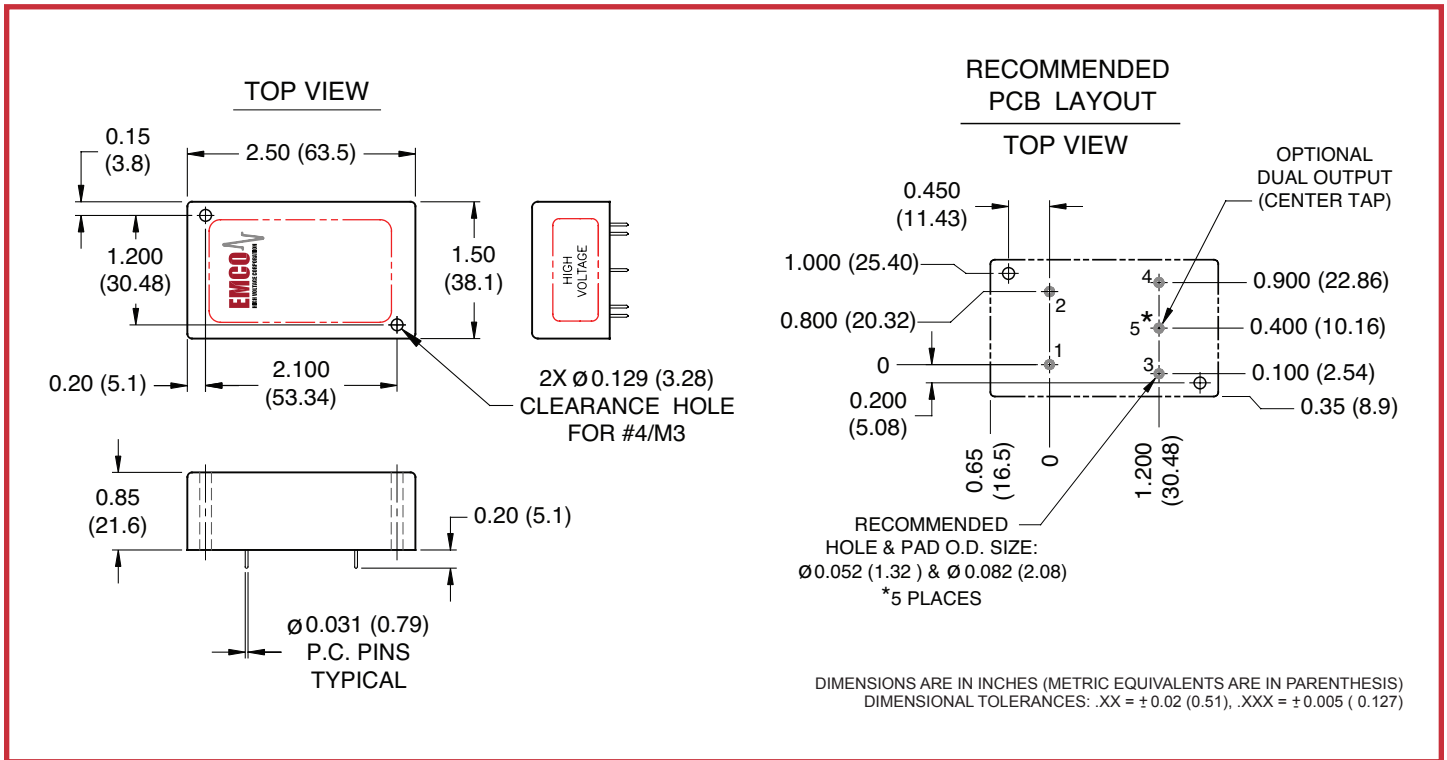
ELECTRICAL SPECIFICATIONS^{*3}

| MODEL | INPUT VOLTAGE | OUTPUT CURRENT | RIPPLE ^{*5} | REVERSIBLE MODEL | OUTPUT VOLTAGE ^{*2} | DUAL OUTPUT (CENTER TAP) MODEL ^{*4} | OUTPUT VOLTAGE ^{*2} |
|---------------|---------------|----------------|----------------------|------------------|------------------------------|--|------------------------------|
| E02/E02CT | 0 to 12V | 15mA | <0.25% | E02 | 0 to 200V | E02CT | 0 to +/- 100V |
| E02-5/E02-5CT | 0 to 12V | 12mA | <0.75% | E02-5 | 0 to 250V | E02-5CT | 0 to +/- 125V |
| E03/E03CT | 0 to 12V | 10mA | <1% | E03 | 0 to 300V | E03CT | 0 to +/- 150V |
| E05/E05CT | 0 to 12V | 6.0mA | <0.1% | E05 | 0 to 500V | E05CT | 0 to +/- 250V |
| E06/E06CT | 0 to 12V | 5.0mA | <0.1% | E06 | 0 to 600V | E06CT | 0 to +/- 300V |
| E07-5/E07-5CT | 0 to 12V | 4.0mA | <0.1% | E07-5 | 0 to 750V | E07-5CT | 0 to +/- 375V |
| E08/E08CT | 0 to 12V | 3.7mA | <0.1% | E08 | 0 to 800V | E08CT | 0 to +/- 400V |
| E10/E10CT | 0 to 12V | 3.0mA | <0.05% | E10 | 0 to 1kV | E10CT | 0 to +/- 500V |
| E12/E12CT | 0 to 12V | 2.5mA | <0.05% | E12 | 0 to 1.2kV | E12CT | 0 to +/- 600V |
| E15/E15CT | 0 to 12V | 2.0mA | <0.05% | E15 | 0 to 1.5kV | E15CT | 0 to +/- 750V |
| E20/E20CT | 0 to 12V | 1.5mA | <0.25% | E20 | 0 to 2kV | E20CT | 0 to +/- 1kV |
| E30/E30CT | 0 to 15V | 1.0mA | <0.25% | E30 | 0 to 3kV | E30CT | 0 to +/- 1.5kV |
| E40/E40CT | 0 to 15V | 0.75mA | <0.5% | E40 | 0 to 4kV | E40CT | 0 to +/- 2kV |
| E50/E50CT | 0 to 15V | 0.60mA | <0.5% | E50 | 0 to 5kV | E50CT | 0 to +/- 2.5kV |
| E60/E60CT | 0 to 15V | 0.50mA | <0.5% | E60 | 0 to 6kV | E60CT | 0 to +/- 3kV |
| E70/E70CT | 0 to 15V | 0.43mA | <1% | E70 | 0 to 7kV | E70CT | 0 to +/- 3.5kV |
| E80/E80CT | 0 to 15V | 0.25mA | <1.25% | E80 | 0 to 8kV | E80CT | 0 to +/- 4kV |

ELECTRICAL SPECIFICATIONS^{*3}

| PARAMETER | VALUE |
|------------------------------------|--|
| INPUT VOLTAGE | 0 to 12V (E02 to E20) |
| | 0 to 15V (E30 to E80) |
| TURN-ON VOLTAGE | <0.7V |
| INPUT CURRENT | <175mA, NO LOAD |
| | <400mA, FULL LOAD |
| ISOLATION | < +/-3.5kV BIAS (E02 TO E60) |
| | < +/-500V BIAS (E70 TO E80) |
| INPUT CAPACITANCE | 66uF (E02 to E60) |
| | 240uF (E70 to E80) |
| RESPONSE TIME | <10mS (Typical) |
| OUTPUT VOLTAGE TOLERANCE | +/-5% (Full Load, 100% output voltage) |
| FREQUENCY | 30 to 100KHz |
| OPERATING TEMPERATURE ⁵ | -10C to +60°C Case (E02 TO E60) |
| | -10C to +50°C Case (E70 TO E80) |
| STORAGE TEMPERATURE | -25C to +90°C |

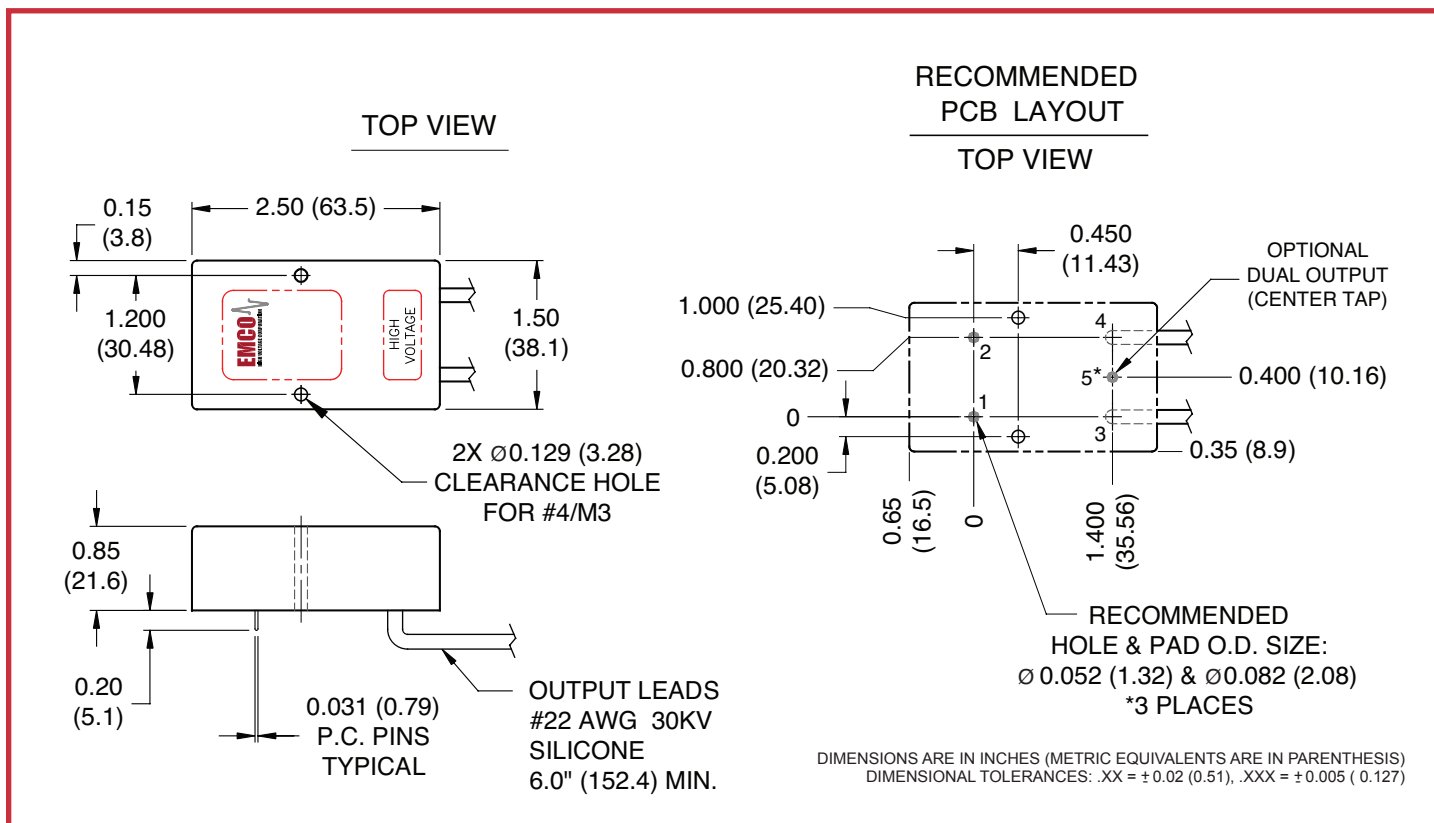
E02-E60 MECHANICAL SPECIFICATIONS*2



| PARAMETER | VALUE |
|---------------|---|
| WEIGHT | 3 OZ (85.05 Grams) |
| VOLUME | <3.2 cubic Inches (52.2 cubic centimeters) |
| DIMENSIONS | 2.50L (63.5L) x 1.50W (38.1W) x 0.85H (21.6H) |
| CASE MATERIAL | Diallyl Phthalate (DAP) |

| PIN # | FUNCTION |
|-------|-----------------------------------|
| 1 | (+) Input |
| 2 | (-) Input |
| 3 | (+) Output |
| 4 | (-) Output |
| 5 | Dual Output/Center Tap (Optional) |

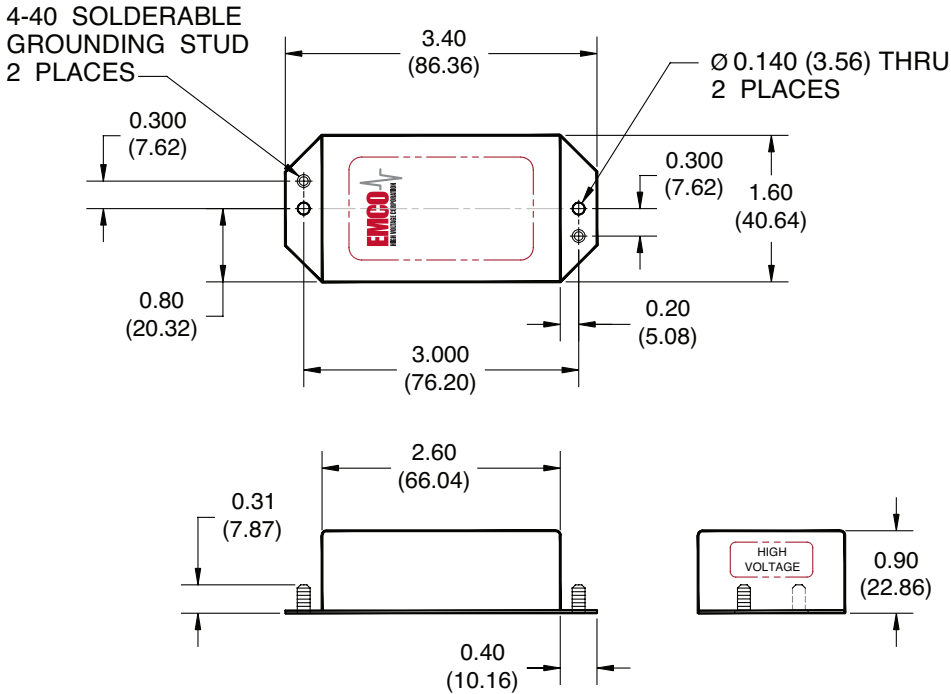
E70-E80 MECHANICAL SPECIFICATIONS*2



| PARAMETER | VALUE |
|---------------|---|
| WEIGHT | 3 OZ (85.05 Grams) |
| VOLUME | <3.2 cubic Inches (52.2 cubic centimeters) |
| DIMENSIONS | 2.50L (63.5L) x 1.50W (38.1W) x 0.85H (21.6H) |
| CASE MATERIAL | Diallyl Phthalate (DAP) |

| PIN/WIRE # | FUNCTION |
|------------|-----------------------------------|
| 1 | (+) Input |
| 2 | (-) Input |
| 3 | (+) Output |
| 4 | (-) Output |
| 5 | Dual Output/Center Tap (Optional) |

EXTERNAL EMI/RFI SHIELD



DIMENSIONS ARE IN INCHES (METRIC EQUIVALENTS ARE IN PARENTHESIS)
 DIMENSIONAL TOLERANCES: .XX = ±0.02 (0.51), .XXX = ±0.005 (0.127)

| PARAMETER | VALUE |
|-----------|--------------------------|
| BOX SIZE | See table |
| MATERIAL | 0.03 (0.76mm) Aluminum |
| FINISH | Black Anodize |
| MOUNTING | Two Tabs With Thru-Holes |

| PARAMETER | VALUE |
|------------------------|---|
| GROUND | Black Anodized Aluminum |
| DIMENSIONS WITH TAB | 3.4L (86.36L) x 1.6W (40.64W) x 0.9H (22.86H) |
| DIMENSIONS WITHOUT TAB | 2.6L (66.04L) x 1.6W (40.64W) x 0.9H (22.86H) |

SHIELD DESCRIPTION

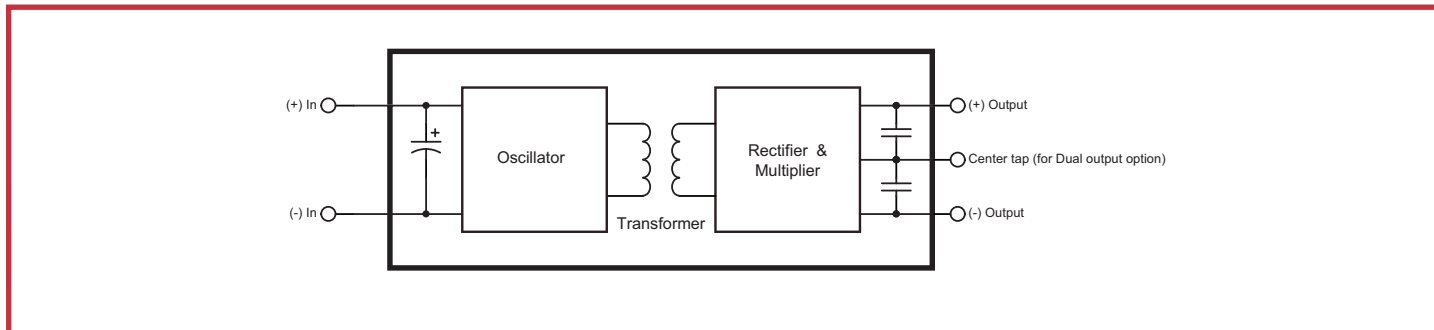
The "AB" Series provides low cost EMI/RFI shielding and rugged mounting for XP EMCO High Voltage DC to DC converters. These five-sided aluminum enclosures feature a durable, non-conductive black anodized finish. The enclosures are manufactured at our own sheet metal fabrication facility, which allows for low cost and stock delivery. Add an "AB" suffix to the model number for a factory-installed enclosure (e.g. E10AB). Contact our sales department by phone, fax or email for immediate attention.

APPLICATION INFORMATION

On models with outputs of 3kV or higher, special care must be taken to ensure adequate spacing and insulation between the metal can and the high voltage output. Single sided layout, encapsulants or conformal coating may be required.

Case grounding stud must be connected to ground. Case ground is not internally connected to (-) input.

BLOCK DIAGRAM

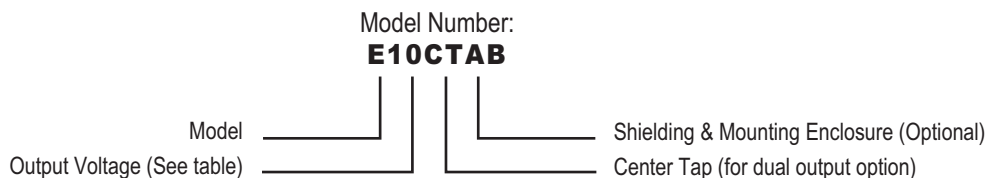


OPTION CODE TABLE

| OPTION | | ORDER CODE | MODELS |
|----------|----------------------------------|------------|--------|
| POLARITY | Positive / Negative reversible | Blank | ALL |
| | Dual Output (center tap) option | CT | ALL |
| OPTIONS | Shielding and Mounting Enclosure | AB | ALL |

HOW TO ORDER

PART NUMBER SELECTOR:



EXAMPLE:

E10CTAB (E-Model, 10-Output Voltage, CT-Center Tap, AB-Shielding & Mounting Enclosure)

* Notes:

1. At maximum rated output voltage.
2. Output voltage is load dependent. Under light or no load conditions, reduce input voltage so maximum rated output voltage is not exceeded.
3. Specifications after 30 minute warm up, full load, at 25C unless otherwise indicated.
4. For dual output units [CT option], the negative output voltage will be ~10% larger than the positive output voltage with respect to the center tap pin.
5. Ripple Specifications for dual output units applies to the voltage between the positive and negative output terminals.
6. Proper thermal management techniques are required to maintain safe case temperature at maximum power output.
7. This unit has flying leads on the output and clearance holes for mounting.

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