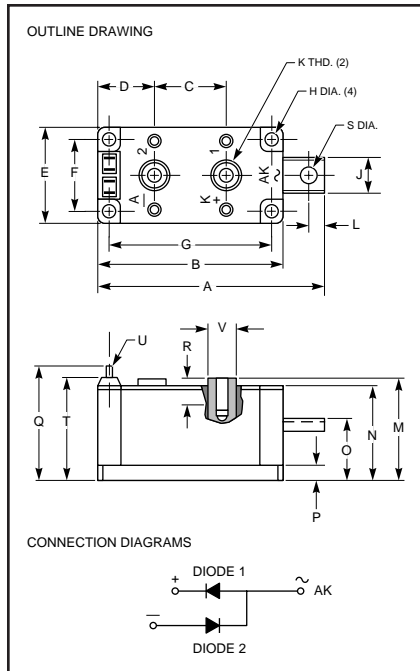
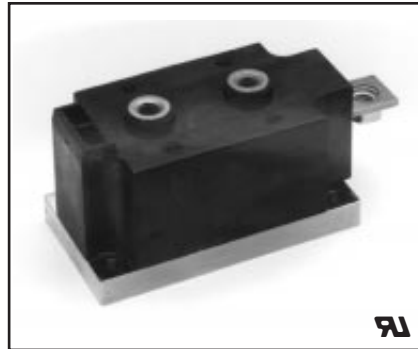


## Dual Diode Isolated POW-R-BLOK™ Module 260 Amperes/600-2000 Volts



### Outline Drawing

| Dimension | Inches        | Millimeters |
|-----------|---------------|-------------|
| A         | 4.57          | 116         |
| B         | 3.66          | 93          |
| C         | 1.38          | 35          |
| D         | 1.12          | 28.5        |
| E         | 1.97          | 50          |
| F         | 1.50          | 38          |
| G         | 3.15          | 80          |
| H         | 0.22          | 5.5         |
| J         | 0.71          | 18          |
| K         | —             | M8          |
| L         | 0.35          | 9           |
| M         | 2.05          | 52          |
| N         | 1.93          | 49          |
| O         | 1.34          | 34          |
| P         | 0.394         | 10          |
| Q         | 2.16          | 55          |
| R         | 0.55          | 14          |
| S         | —             | M8          |
| T         | 2.09          | 53.1        |
| U         | 0.110 x 0.032 | 2.8 x 0.8   |
| V         | 0.54          | 14          |



ED41\_\_26  
Dual Diode Isolated  
POW-R-BLOK™ Module  
260 Amperes/600-2000 Volts

### Ordering Information:

Select the complete eight digit module part number you desire from the table below.  
Example: ED412026 is a 2000 Volt, 260 Ampere Dual Diode Isolated POW-R-BLOK™ Module.

| Type | Voltage Volts (x100) | Current Rating Amperes (x10) |
|------|----------------------|------------------------------|
| ED41 | 06                   | 26                           |
|      | 08                   |                              |
|      | 12                   |                              |
|      | 14                   |                              |
|      | 16                   |                              |
|      | 18                   |                              |
|      | 20                   |                              |

### Description:

The POW-R-BLOK™ combines multiple power semiconductor devices in a single, electrically isolated module. POW-R-BLOK™ can serve as the essential circuit element in many industrial applications, such as motor speed control and battery chargers. This dual diode module is available for use in 120, 240, 480 or 575 volt power line applications. POW-R-BLOK™ features a self contained electrical isolation system. By using high thermal conductivity BeO ceramic isolators, excellent circuit-to-baseplate isolation ( $\geq 2500$  volts RMS) has been achieved, while maintaining efficient cooling of the semiconductors.

### Features:

- Compression Bonded Elements
- Isolated Baseplate
- Insulated Package
- Metal Baseplate
- Low Thermal Impedance
- UL Recognized

### Benefits:

- No Additional Insulation Components Required
- Easy Installation
- Reduce Engineering Time
- Improved Heat Transfer
- Voltage Stability



Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

ED41 \_ \_26  
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### Absolute Maximum Ratings

| Characteristics  | Symbol       | ED41 _ _26 | Units            |
|--|--------------|------------|------------------|
| Peak Reverse Blocking Voltage                                      | $V_{RRM}$    | 2000       | Volts            |
| Transient Peak Reverse Blocking Voltage (Non-Repetative) $t < 5ms$ | $V_{RSM}$    | 2200       | Volts            |
| DC Reverse Blocking Voltage  | $V_{R(DC)}$  | 1600       | Volts            |
| RMS On-State Current   | $I_{F(RMS)}$ | 408        | Amperes          |
| Average On-State Current   | $I_{F(AV)}$  | 260        | Amperes          |
| Peak One-Cycle Surge (Non-Repetitive) On-State Current (60Hz)      | $I_{FSM}$    | 8000       | Amperes          |
| Peak Three-Cycle Surge (Non-Repetitive) On-State Current (60Hz)    | $I_{FSM}$    | 5750       | Amperes          |
| Peak Ten-Cycle Surge (Non-Repetitive) On-State Current (60Hz)      | $I_{FSM}$    | 4975       | Amperes          |
| $I^2t$ (for Fusing), 8.3 milliseconds                              | $I^2t$       | 266,000    | A <sup>2</sup> s |
| Storage Temperature  | $T_{STG}$    | -40 to 150 | °C               |
| Operating Temperature  | $T_j$        | -40 to 150 | °C               |
| Maximum Mounting Torque M6 Mounting Screw                          | —            | 50         | lb.-in.          |
| Maximum Mounting Torque M8 Terminal Screw                          | —            | 130        | lb.-in.          |
| V Isolation  | $V_{RMS}$    | 2500       | Volts            |



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**Electrical and Thermal Characteristics,  $T_j = 25^\circ\text{C}$  unless otherwise specified**

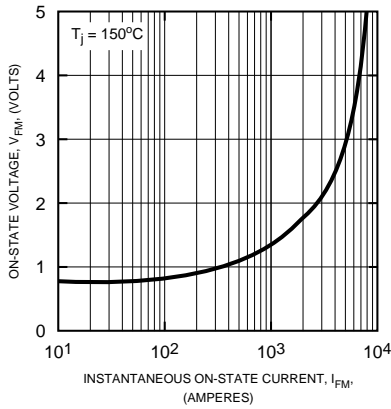
| Characteristics                               | Symbol            | Test Conditions   | ED41 _ _26 | Units                        |
|---|-------------------|---|------------|------------------------------|
| <b>Blocking State Maximums</b>                |                   |   |            |                              |
| Reverse Leakage Current, Peak                 | $I_{RRM}$         | $T_j = 150^\circ\text{C}$ , $V_{RRM} = \text{Rated}$                                  | 50         | mA                           |
| <b>Conducting State Maximums</b>              |                   |   |            |                              |
| Peak On-State Voltage                         | $V_{FM}$          | $I_{FM} = 1500\text{A}$   | 1.60       | Volts                        |
| <b>Switching Minimums</b>                     |                   |   |            |                              |
| Diode Reverse Recovery Time (Typical)         | $t_{rr}$          | $I_{FM} = 1500\text{A}$ , $T_P = 190\mu\text{s}$<br>$di/dt = -25\text{A}/\mu\text{s}$ | 10         | $\mu\text{s}$                |
| <b>Thermal Maximums</b>                       |                   |   |            |                              |
| Thermal Resistance, Junction-to-Case          | $R_{\theta(J-C)}$ | Per Module  | 0.09       | $^\circ\text{C}/\text{Watt}$ |
| Thermal Resistance, Case-to-Sink (Lubricated) | $R_{\theta(C-S)}$ | Per Module  | 0.03       | $^\circ\text{C}/\text{Watt}$ |

**WARNING:**

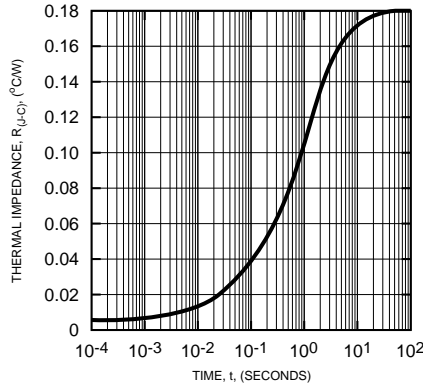
Internal insulation used is Beryllium Oxide.  
User should avoid grinding, crushing, or abrading these portions.  
Care must be exercised in properly disposing of unwanted devices.

**ED41 \_\_26**  
**Dual Diode Isolated**  
**POW-R-BLOK™ Module**  
 260 Amperes/600-2000 Volts

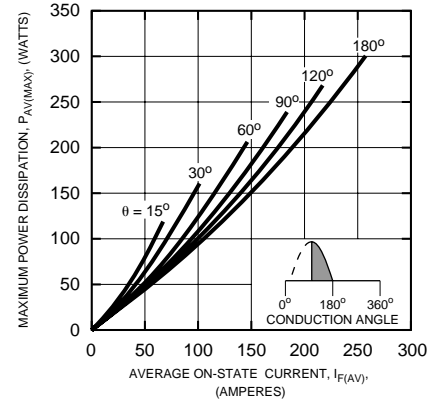
**MAXIMUM ON-STATE FORWARD VOLTAGE DROP**



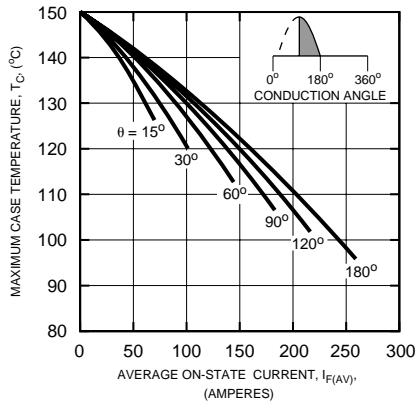
**MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION-TO-CASE) (PER DIODE)**



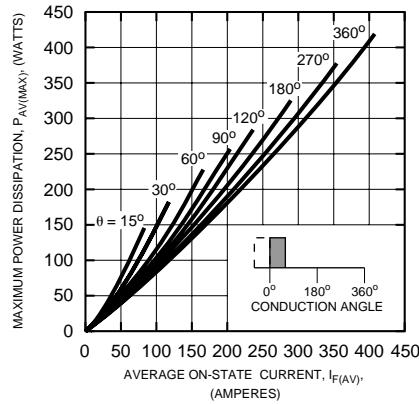
**MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM) (PER DIODE)**



**MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)**



**MAXIMUM ON-STATE POWER DISSIPATION (RECTANGULAR WAVEFORM) (PER DIODE)**



**MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)**

