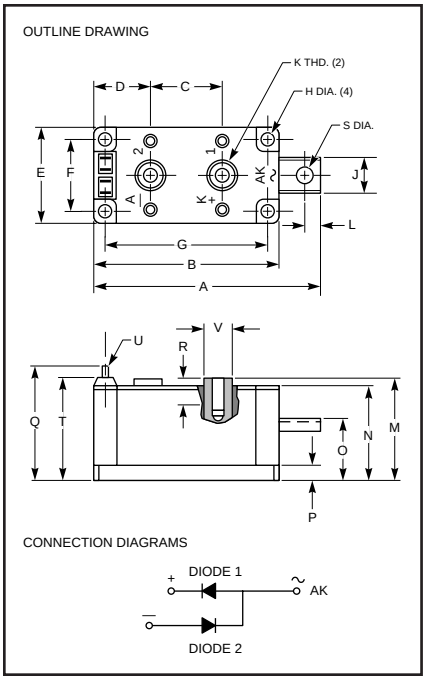
Powerex, Inc., 200 Hillis Street, Youngwood, Pennsylvania 15697-1800 (724) 925-7272

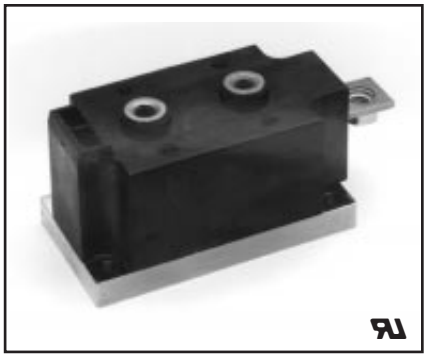
Dual Diode Isolated POW-R-BLOK™ Module

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 (≥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 Insualtion Components Required
- ☐ Easy Installation
- ☐ Reduce Engineering Time
- ☐ Improved Heat Transfer
- ☐ Voltage Stability

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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^2s
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°C unless otherwise specified

Characteristics	Symbol	Test Conditions	ED41_ _26	Units
Blocking State Maximums				
Reverse Leakage Current, Peak	I_{RRM}	T_j = 150°C, V_{RRM} = Rated	50	mA
Conducting State Maximums				
Peak On-State Voltage	V_{FM}	I_{FM} = 1500A	1.60	Volts
Switching Minimums				
Diode Reverse Recovery Time (Typical)	t_{rr}	I_{FM} = 1500A, T_P = 190μs di/dt = -25A/μs	10	μs
Thermal Maximums				
Thermal Resistance, Junction-to-Case	$R_{\theta(J-C)}$	Per Module	0.09	°C/Watt
Thermal Resistance, Case-to-Sink (Lubricated)	$R_{\theta(C-S)}$	Per Module	0.03	°C/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.

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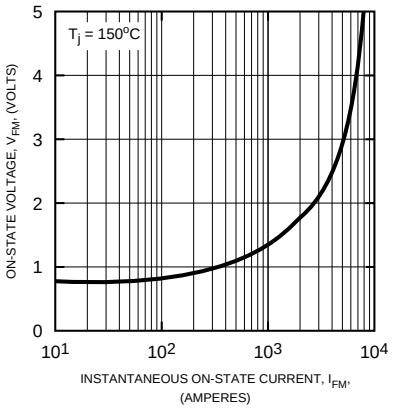
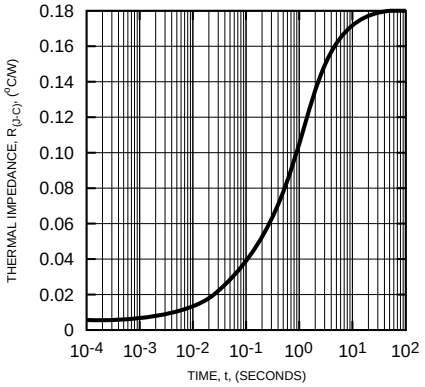
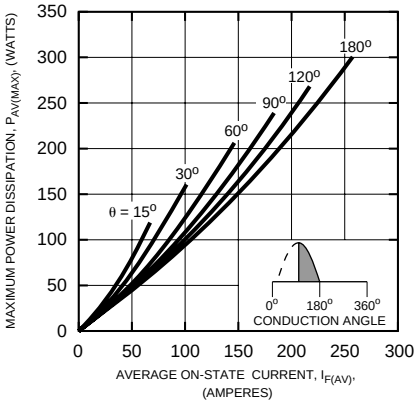
MAXIMUM ON-STATE FORWARD VOLTAGE DROP



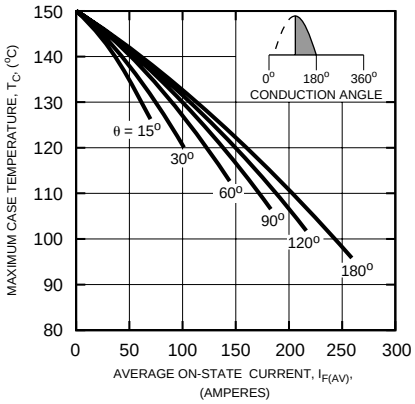
MAXIMUM TRANSIENT THERMAL IMPEDANCE (JUNCTION-TO-CASE) (PER DIODE)



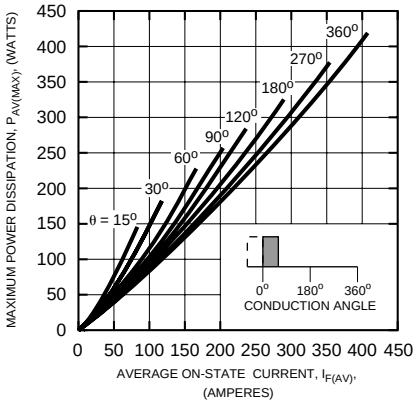
MAXIMUM ON-STATE POWER DISSIPATION (SINUSOIDAL WAVEFORM) (PER DIODE)



MAXIMUM ALLOWABLE CASE TEMPERATURE (SINUSOIDAL WAVEFORM)



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



MAXIMUM ALLOWABLE CASE TEMPERATURE (RECTANGULAR WAVEFORM)