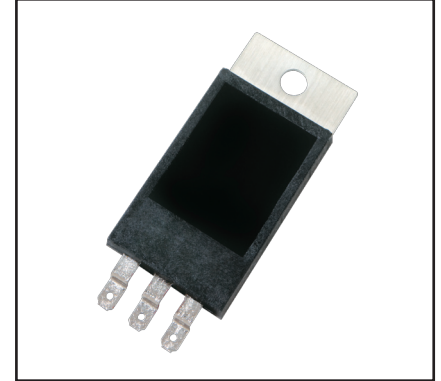
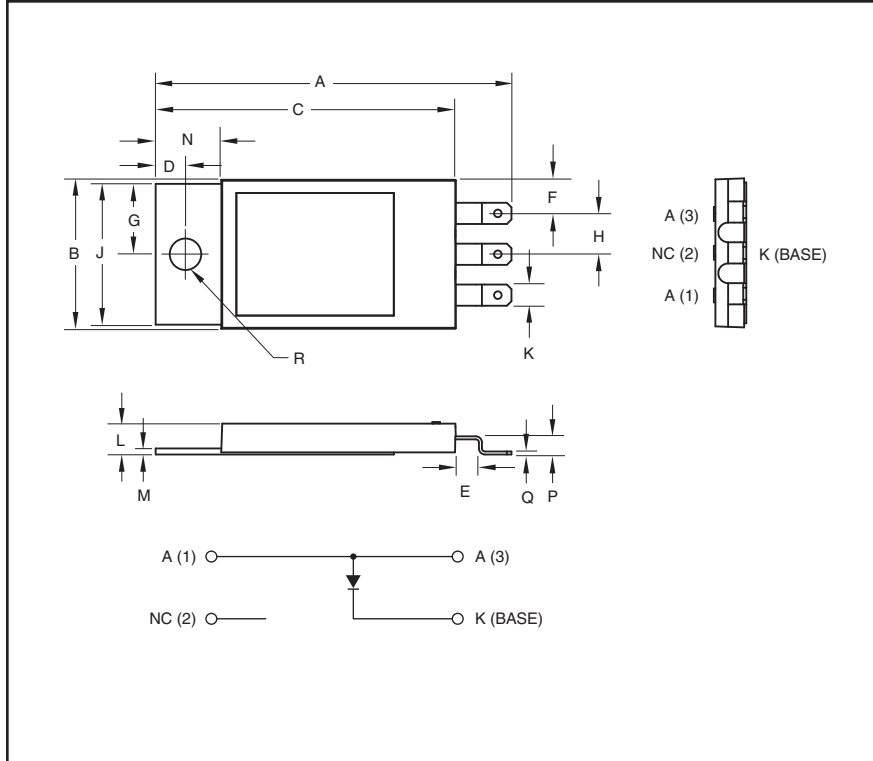


### Single Discrete Diode 60 Amperes/4500 Volts



#### Description:

Powerex Single Non-isolated Discrete is designed specially for customer high voltage applications.

#### Features:

- Non-Isolated Package
- Molybdenum Mounting Plate
- Surface Mount Design

#### Applications:

- Snubber Circuits
- Free Wheeling
- Switching Power Supplies

#### Outline Drawing and Circuit Diagram

Dimensions	Inches	Millimeters
A	2.35	59.7
B	0.98	25.0
C	1.98	50.3
D	0.197	5.0
E	0.22	5.5
F	0.22	5.6
G	0.465	11.8
H	0.27	6.9

Dimensions	Inches	Millimeters
J	0.93	23.6
K	0.14	3.6
L	0.20	5.2
M	0.40	1.0
N	0.43	11.0
P	0.20	0.5
Q	0.12	3.0
R	0.208 Dia.	5.3 Dia.

**QRS4506002**  
**Single Discrete Diode**  
 60 Amperes/4500 Volts

### Maximum Ratings, $T_j = 25\text{ }^\circ\text{C}$ unless otherwise specified

Ratings	Symbol	QRS4506002	Units
Peak Reverse Blocking Voltage	$V_{RRM}$	4500	Volts
Average Current (DC, $T_C = 94^\circ\text{C}$ )	$V_{F(av)}$	60	Amperes
Peak 3-Cycle Surge (Non-Repetitive) On-State Current (60 Hz)	$I_{FSM}$	120	Amperes
$I^2t$ (for Fusing) (8.3 milliseconds)	$I^2t$	1900	$\text{A}^2\text{sec}$
Operating Temperature	$T_j$	-55 to 150	$^\circ\text{C}$
Storage Temperature	$T_{stg}$	-55 to 125	$^\circ\text{C}$
Mounting Torque, M5 Mounting Screws	—	30	in-lb
Weight (Typical)	—	21	Grams

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Reverse Leakage Current (Peak)	$I_{RRM}$	$V_{rrm} = 4500\text{V}$	—	—	1.0	mA
Peak On-State Voltage	$V_{FM}$	$I_{FM} = 60\text{A}$	—	5.6	6.2	Volts
Reverse Recovery Time	$t_{rr}$	$I_{FM} = 67\text{A}$ , $di/dt = -800\text{A}/\mu\text{S}$ , $V_r = \frac{1}{2}V_{RM}$	—	230	—	nS
Reverse Recovery Charge	$Q_{rr}$	$I_{FM} = 67\text{A}$ , $di/dt = -800\text{A}/\mu\text{S}$ , $V_r = \frac{1}{2}V_{RM}$	—	11	—	$\mu\text{C}$

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

Characteristics	Symbol	Test Conditions	Min.	Typ.	Max.	Units
Thermal Resistance, Junction to Case	$R_{th(j-c)}$	Diode	—	0.15	TBD	$^\circ\text{C}/\text{W}$
Thermal Resistance, Case to Sink	$R_{th(c-s)}$	$\lambda_{grease} = 1\text{W}/\text{mK}$	—	0.10	—	$^\circ\text{C}/\text{W}$
Thermal Grease Applied						

