

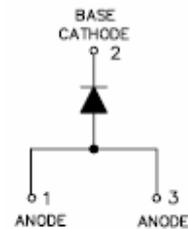
## SDURD860 ULTRAFAST PLASTIC RECTIFIER

### Applications:

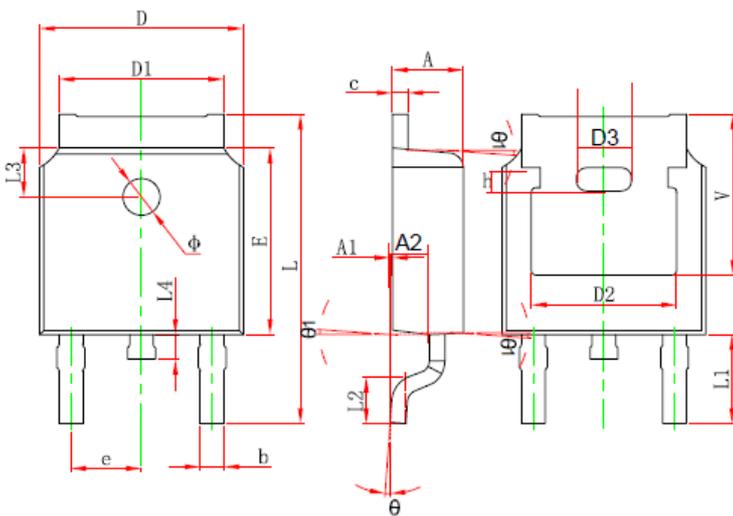
- Antiparallel diode for high frequency switching devices
- Anti saturation diode
- Snubber diode
- Free wheeling diode in converters and motor control circuits
- Rectifiers in switch mode power supplies (SMPS)
- Inductive heating and melting
- Uninterruptible power supplies (UPS)
- Ultrasonic cleaners and welders

### Features:

- Ultra-Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-0
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request



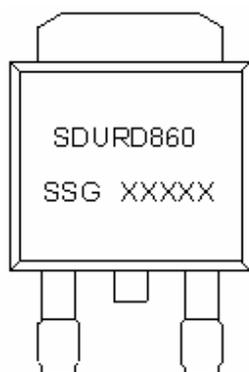
### Mechanical Dimensions: In mm /Inches



| Symbol  | Dimensions In Millimeters |        | Dimensions In Inches |       |
|---------|---------------------------|--------|----------------------|-------|
|         | Min.                      | Max.   | Min.                 | Max.  |
| A       | 2.200                     | 2.380  | 0.087                | 0.094 |
| A10.000 | 0.000                     | 0.100  | 0.000                | 0.004 |
| b       | 0.710                     | 0.810  | 0.028                | 0.032 |
| c       | 0.460                     | 0.560  | 0.018                | 0.022 |
| D       | 6.500                     | 6.700  | 0.256                | 0.264 |
| D1      | 5.130                     | 5.460  | 0.202                | 0.215 |
| D2      | 4.830 REF.                |        | 0.190 REF.           |       |
| E       | 6.000                     | 6.200  | 0.236                | 0.244 |
| e       | 2.186                     | 2.386  | 0.086                | 0.094 |
| L       | 9.800                     | 10.400 | 0.386                | 0.409 |
| L1      | 2.900 REF.                |        | 0.114 REF.           |       |
| L2      | 1.400                     | 1.700  | 0.055                | 0.067 |
| L3      | 1.600 REF.                |        | 0.063 REF.           |       |
| L4      | 0.600                     | 1.000  | 0.024                | 0.039 |
| phi     | 1.100                     | 1.300  | 0.043                | 0.051 |
| theta   | 0°                        | 8°     | 0°                   | 8°    |
| A2      | 0.910                     | 1.110  | 0.036                | 0.044 |
| V       | 5.350 REF.                |        | 0.211 REF.           |       |
| D3      | 1.778 REF.                |        | 0.070 REF.           |       |
| h       | 0.762 REF.                |        | 0.030 REF.           |       |
| theta1  | 7°                        |        | 7°                   |       |

### DPAK

**Marking Diagram:**



Where XXXXX is YYWWL

SDUR = Device Type  
D = Package type  
8 = Forward Current (8A)  
60 = Reverse Voltage (600V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

**Cautions:** Molding resin  
Epoxy resin UL:94V-0

**Ordering Information:**

| Device   | Package            | Shipping       |
|----------|--------------------|----------------|
| SDURD860 | DDPAK<br>(Pb-Free) | 2500pcs / reel |

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Maximum Ratings:**

| Characteristics   | Symbol      | Condition  | Max. | Units |
|---|-------------|--|------|-------|
| Peak Inverse Voltage  | $V_{RWM}$   | -  | 600  | V     |
| Max. Average Forward  | $I_{F(AV)}$ | 50% duty cycle @Tc=100°C,<br>rectangular wave form | 8    | A     |
| Max. Peak One Cycle Non-<br>Repetitive Surge Current<br>(Per leg) | $I_{FSM}$   | 8.3ms, Half Sine pulse                             | 110  | A     |

**Electrical Characteristics:**

| Characteristics            | Symbol   | Condition  | Typ. | Max. | Units         |
|----------------------------|----------|--|------|------|---------------|
| Max. Forward Voltage Drop* | $V_{F1}$ | @ 8A, Pulse, $T_J = 25^\circ\text{C}$  | 1.35 | 1.7  | V             |
| Max. Reverse Current*      | $I_{R1}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 25^\circ\text{C}$  | 0.2  | 8    | $\mu\text{A}$ |
|                            | $I_{R2}$ | @ $V_R = \text{rated } V_R$<br>$T_J = 125^\circ\text{C}$   | 0.15 | 1    | mA            |
| Max. Reverse Recovery Time | $t_{rr}$ | $I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , and $I_{rm} = 250\text{mA}$ ,<br>$T_J = 25^\circ\text{C}$ | 45   | 50   | ns            |

\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**Thermal-Mechanical Specifications:**

| Characteristics                             | Symbol          | Condition    | Specification | Units              |
|---|-----------------|--------------|---------------|--------------------|
| Max. Junction Temperature                   | $T_J$           | -            | -55 to +150   | $^\circ\text{C}$   |
| Max. Storage Temperature                    | $T_{stg}$       | -            | -55 to +150   | $^\circ\text{C}$   |
| Maximum Thermal Resistance Junction to Case | $R_{\theta JC}$ | DC operation | 5.0           | $^\circ\text{C/W}$ |
| Approximate Weight                          | wt              | -            | 0.39          | g                  |
| Case Style                                  | DPAK            |              |               |                    |

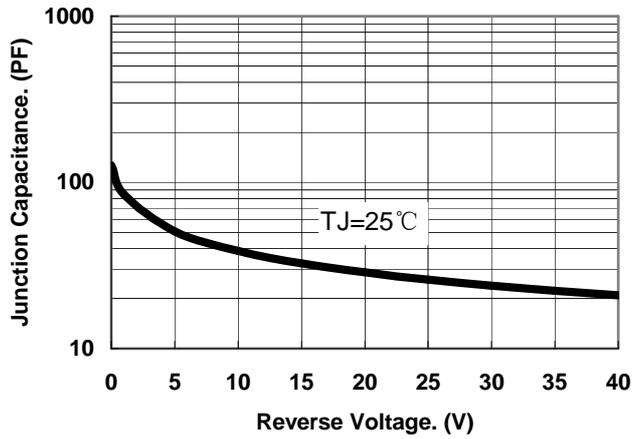


Fig.1-Typical Junction Capacitance

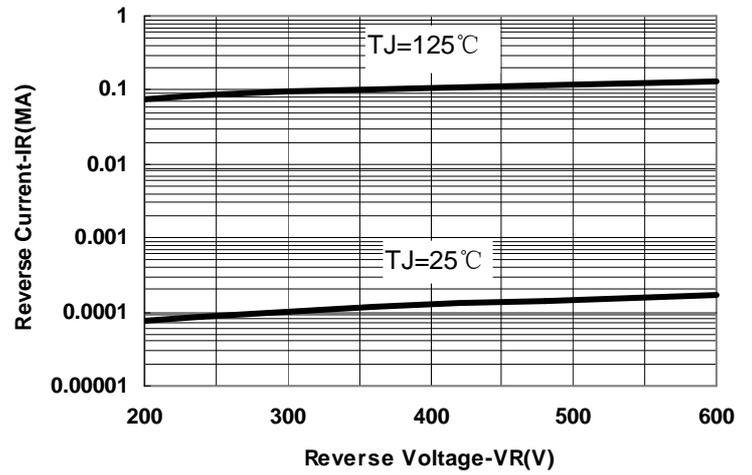


Fig.2-Typical Reverse Characteristics

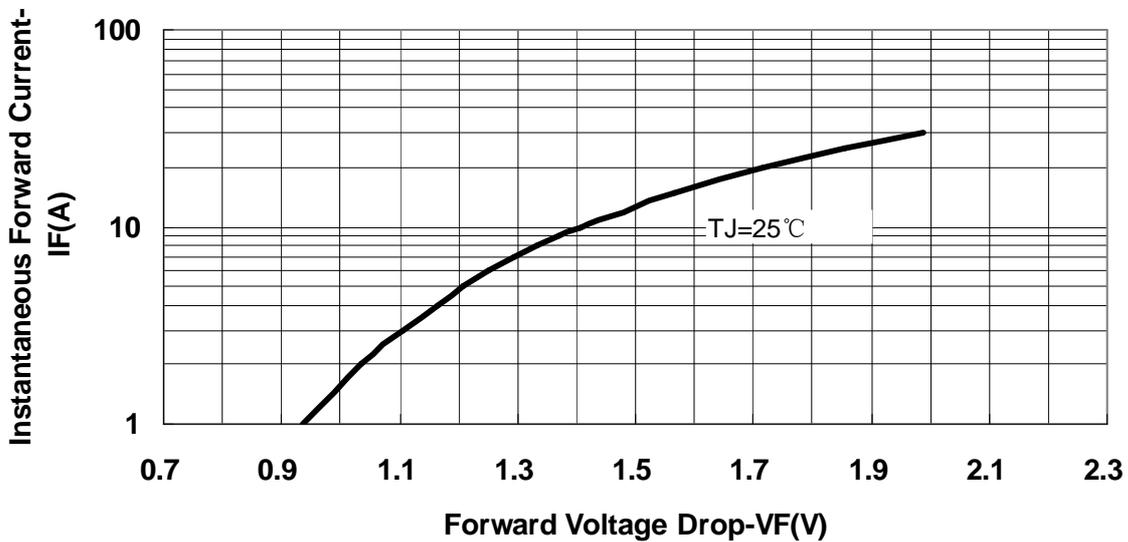


Fig.3-Typical Forward Voltage Drop Characteristics

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