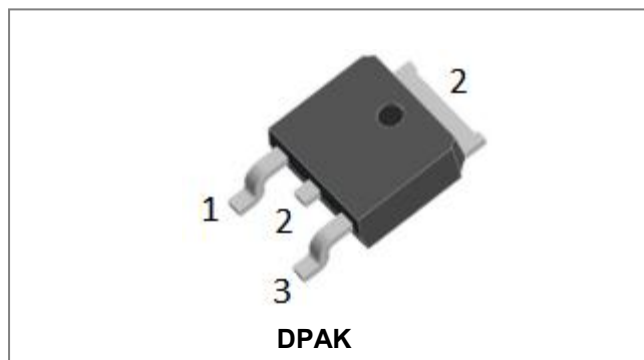


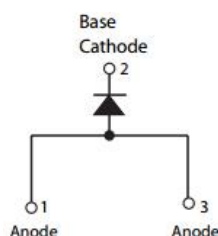
## SDURD1560 ULTRAFAST RECTIFIER



### 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

### Circuit Diagram



### Features

- Ultra-Fast switching
- High current capability
- Low reverse leakage current
- High surge current capability
- This is a Pb – free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Maximum Ratings:

| Characteristics                                                                        | Symbol                          | Condition                                                           | Max. | Units |
|----------------------------------------------------------------------------------------|---------------------------------|---------------------------------------------------------------------|------|-------|
| Peak Repetitive Reverse Voltage<br>Working Peak Reverse Voltage<br>DC Blocking Voltage | $V_{RRM}$<br>$V_{RWM}$<br>$V_R$ | -                                                                   | 600  | V     |
| Average Rectified Forward Current                                                      | $I_F (AV)$                      | 50% duty cycle @ $T_c=100^\circ\text{C}$ ,<br>rectangular wave form | 15   | A     |
| Peak One Cycle Non-Repetitive Surge Current                                            | $I_{FSM}$                       | 8.3ms, Half Sine pulse                                              | 160  | A     |

### Electrical Characteristics:

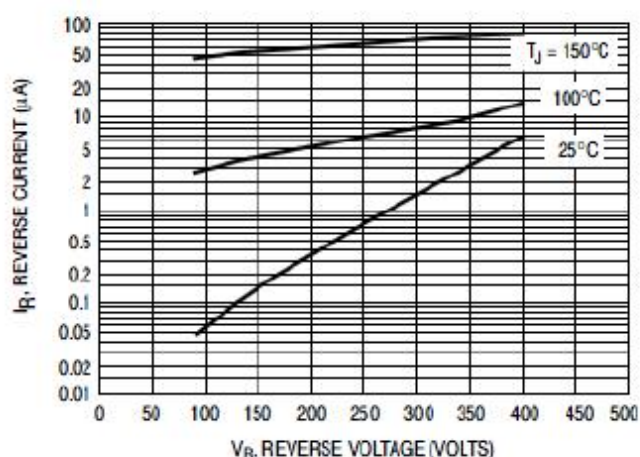
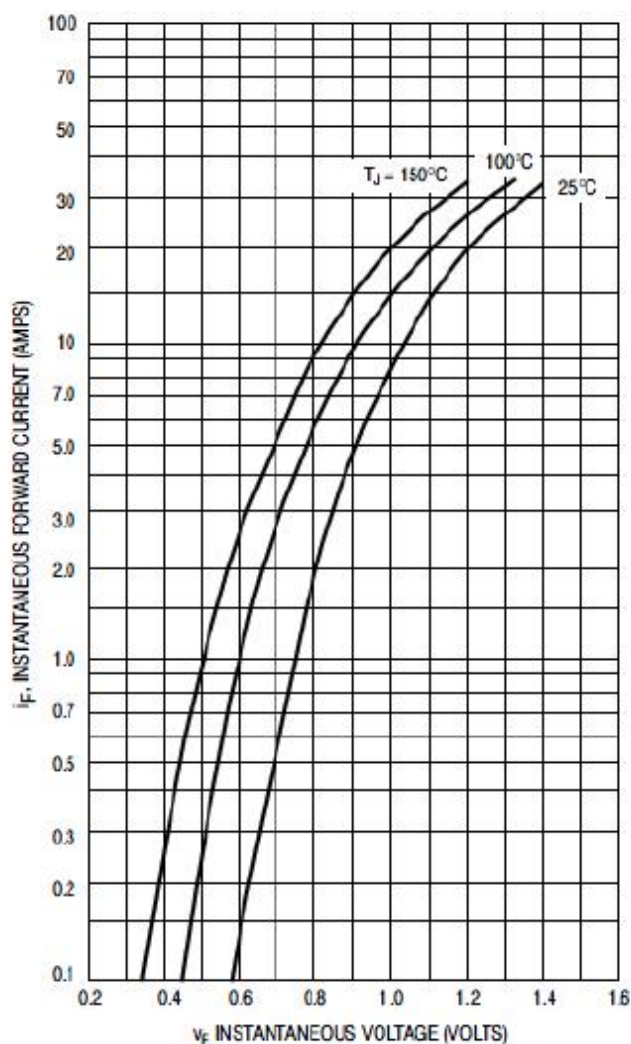
| Characteristics       | Symbol    | Condition                                                     | Typ. | Max. | Units         |
|-----------------------|-----------|---------------------------------------------------------------|------|------|---------------|
| Forward Voltage Drop* | $V_{F1}$  | @15A, Pulse, $T_J = 25^\circ\text{C}$                         | 1.6  | 1.7  | V             |
|                       | $V_{F2}$  | @15A, Pulse, $T_J = 125^\circ\text{C}$                        | -    | 1.5  | V             |
| Reverse Current*      | $I_{R1}$  | @ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$        | 0.4  | 10   | $\mu\text{A}$ |
|                       | $I_{R2}$  | @ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$       | -    | 1000 | $\mu\text{A}$ |
| Reverse Recovery Time | $T_{rr1}$ | $I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_m=250\text{mA}$ | 30   | 50   | ns            |

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

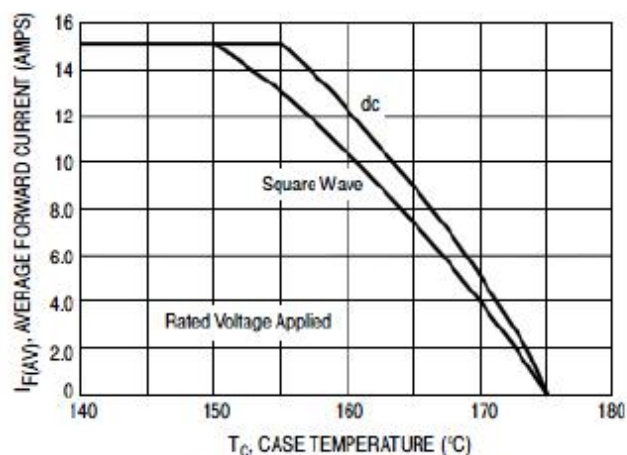
### Thermal-Mechanical Specifications:

| Characteristics                             | Symbol          | Condition    | Specification | Units |
|---------------------------------------------|-----------------|--------------|---------------|-------|
| Junction Temperature                        | $T_J$           | -            | -55 to +150   | °C    |
| Storage Temperature                         | $T_{stg}$       | -            | -55 to +150   | °C    |
| Typical Thermal Resistance Junction to Case | $R_{\theta JC}$ | DC operation | 5             | °C/W  |
| Approximate Weight                          | wt              | -            | 0.39          | g     |
| Case Style                                  | DPAK            |              |               |       |

### Ratings and Characteristics Curves

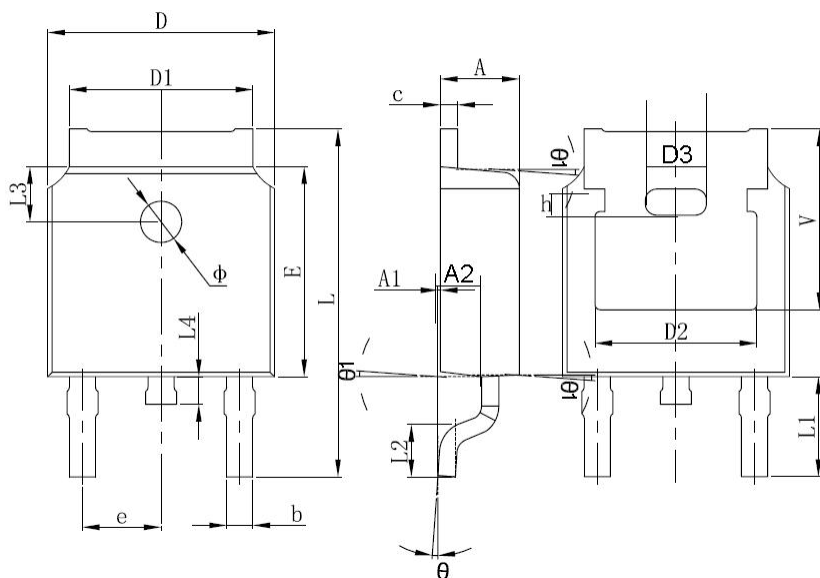


**Figure 7. Typical Reverse Current**



**Figure 8. Current Derating, Case**

**Mechanical Dimensions DPAK**



| SYMBOL | Millimeters |       | Inches     |       |
|--------|-------------|-------|------------|-------|
|        | Min.        | Max.  | Min.       | Max.  |
| A      | 2.20        | 2.40  | 0.087      | 0.094 |
| A1     | 0.00        | 0.127 | 0.000      | 0.005 |
| b      | 0.66        | 0.86  | 0.026      | 0.034 |
| c      | 0.46        | 0.60  | 0.018      | 0.024 |
| D      | 6.50        | 6.70  | 0.256      | 0.264 |
| D1     | 5.13        | 5.46  | 0.202      | 0.215 |
| D2     | 4.83 REF.   |       | 0.190 REF. |       |
| E      | 6.00        | 6.20  | 0.236      | 0.244 |
| e      | 2.186       | 2.386 | 0.086      | 0.094 |
| L      | 9.70        | 10.40 | 0.381      | 0.409 |
| L1     | 2.90 REF.   |       | 0.144 REF. |       |
| L2     | 1.40        | 1.70  | 0.055      | 0.067 |
| L3     | 1.60 REF.   |       | 0.063 REF. |       |
| L4     | 0.60        | 1.00  | 0.024      | 0.039 |
| Φ      | 1.10        | 1.30  | 0.043      | 0.051 |
| Θ      | 0°          | 8°    | 0°         | 8°    |
| h      | 0.00        | 0.30  | 0.000      | 0.012 |
| V      | 5.35 REF.   |       | 0.211 REF. |       |

**Ordering Information**

| Device    | Package           | Shipping       |
|-----------|-------------------|----------------|
| SDURD1560 | DPAK<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.

**Marking Diagram**

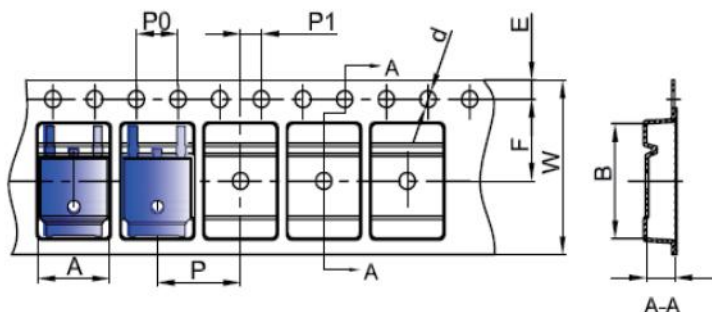


Where XXXXX is YYWWL

SDUR = Device Type  
D = Package type  
15 = Forward Current (15A)  
60 = Reverse Voltage (600V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

**Carrier Tape Specification DPAK**



| SYMBOL | Millimeters |       |
|--------|-------------|-------|
|        | Min.        | Max.  |
| A      | 6.80        | 7.00  |
| B      | 10.40       | 10.60 |
| C      | 2.60        | 2.80  |
| d      | Φ1.45       | Φ1.65 |
| E      | 1.65        | 1.85  |
| F      | 7.40        | 7.60  |
| P0     | 3.90        | 4.10  |
| P      | 7.90        | 8.10  |
| P1     | 1.90        | 2.10  |
| W      | 15.90       | 16.30 |

**Technical Data**  
**Data Sheet N1288, Rev. A**



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