

Chipsmall Limited consists of a professional team with an average of over 10 year of expertise in the distribution of electronic components. Based in Hongkong, we have already established firm and mutual-benefit business relationships with customers from Europe, America and south Asia, supplying obsolete and hard-to-find components to meet their specific needs.

With the principle of "Quality Parts, Customers Priority, Honest Operation, and Considerate Service", our business mainly focus on the distribution of electronic components. Line cards we deal with include Microchip, ALPS, ROHM, Xilinx, Pulse, ON, Everlight and Freescale. Main products comprise IC, Modules, Potentiometer, IC Socket, Relay, Connector. Our parts cover such applications as commercial, industrial, and automotives areas.

We are looking forward to setting up business relationship with you and hope to provide you with the best service and solution. Let us make a better world for our industry!



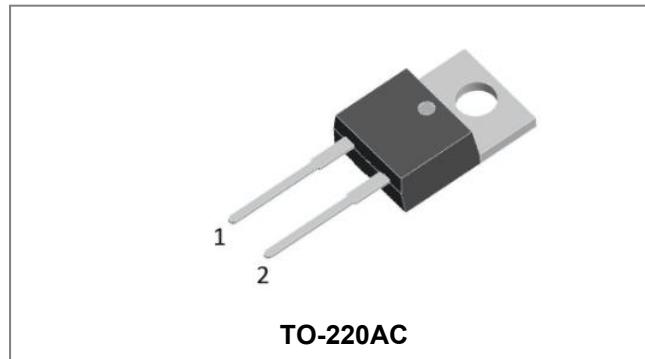
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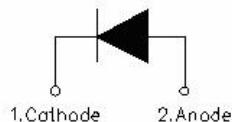
## SDUR820 ULTRAFAST RECTIFIER



### 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	$V_{RRM}$	-		
Working Peak Reverse Voltage	$V_{RWM}$		200	V
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c=105^\circ C$ , rectangular wave form	8	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	80	A

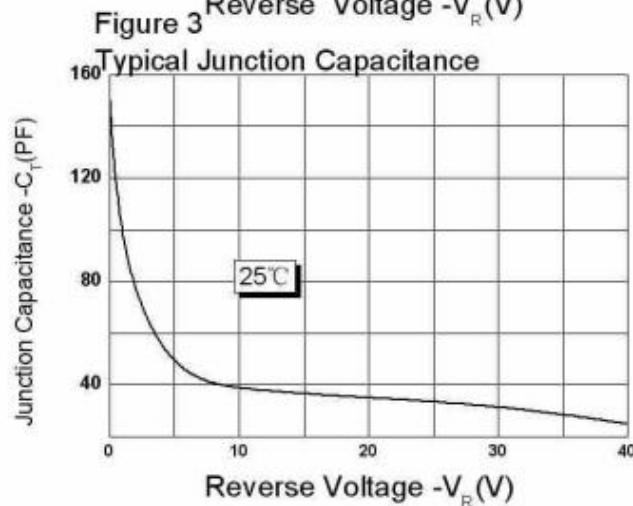
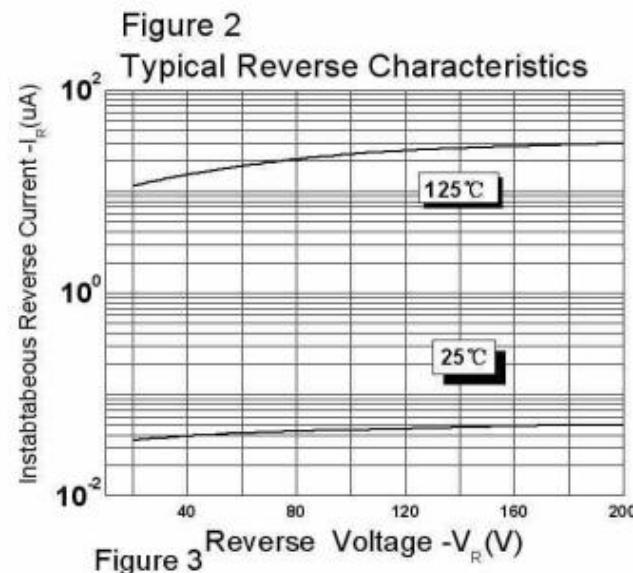
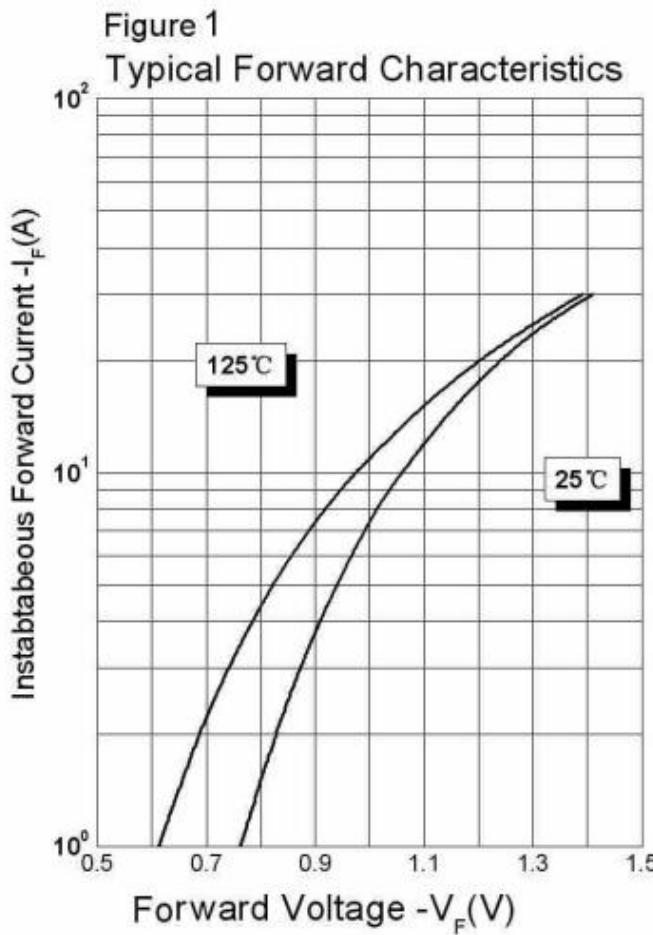
### Electrical Characteristics:

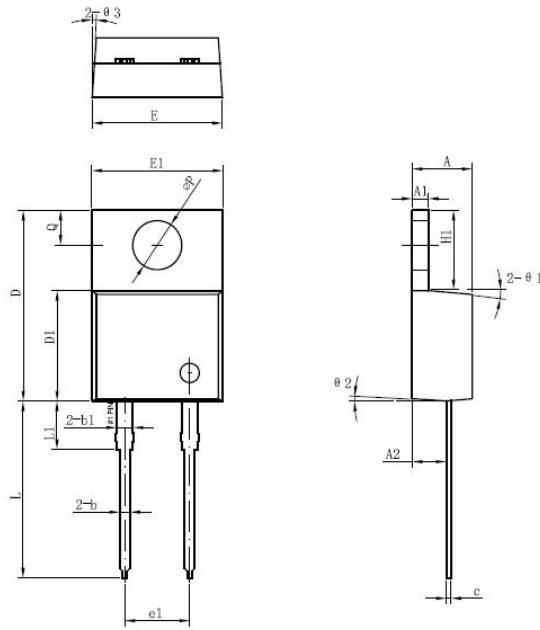
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 8A, Pulse, $T_J = 25^\circ C$	1.00	1.2	V
	$V_{F2}$	@ 8A, Pulse, $T_J = 125^\circ C$	0.91	1.1	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ C$	0.05	5	$\mu A$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ C$	30	500	$\mu A$
Reverse Recovery Time	$t_{rr}$	$I_F=500mA$ , $I_R=1A$ , and $I_m=250mA$	31	35	ns

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

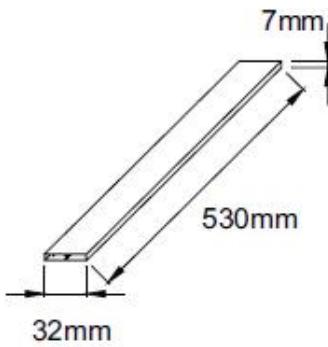
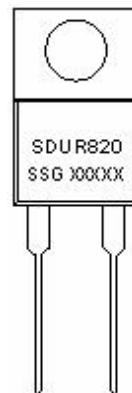
**Thermal-Mechanical Specifications:**

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	$R_{0JC}$	DC operation	5	°C/W
Approximate Weight	$wt$	-	1.6	g
Case Style			TO-220AC	

**Ratings and Characteristics Curves**


**Mechanical Dimensions TO-220AC**


Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
<b>A</b>	<b>4.47</b>	<b>4.70</b>	<b>4.85</b>
<b>A1</b>	<b>1.17</b>	<b>1.27</b>	<b>1.37</b>
<b>A2</b>	<b>2.52</b>	<b>2.69</b>	<b>2.89</b>
<b>b</b>	<b>0.71</b>	<b>0.81</b>	<b>0.96</b>
<b>b1</b>	<b>1.17</b>	<b>1.27</b>	<b>1.37</b>
<b>c</b>	<b>0.31</b>	<b>0.38</b>	<b>0.61</b>
<b>D</b>	<b>14.64</b>	<b>14.94</b>	<b>15.24</b>
<b>D1</b>	<b>8.50</b>	<b>8.07</b>	<b>8.90</b>
<b>E</b>	<b>10.01</b>	<b>10.16</b>	<b>10.31</b>
<b>E1</b>	<b>9.98</b>	<b>10.18</b>	<b>10.38</b>
<b>e1</b>	<b>4.98</b>	<b>5.08</b>	<b>5.18</b>
<b>H1</b>	<b>6.04</b>	<b>6.24</b>	<b>6.44</b>
<b>L</b>	<b>13.00</b>	<b>13.86</b>	<b>14.08</b>
<b>L1</b>	<b>3.56</b>	<b>3.80</b>	<b>3.96</b>
<b>ΦP</b>	<b>3.74</b>	<b>3.84</b>	<b>4.04</b>
<b>Q</b>	<b>2.54</b>	<b>2.74</b>	<b>2.94</b>
<b>Θ1</b>		<b>5°</b>	
<b>Θ2</b>		<b>4°</b>	
<b>Θ3</b>		<b>4°</b>	

**Tube Specification**

**Marking Diagram**


Where XXXX is YYWWL

SDUR	= Device Type
8	= Forward Current (8A)
20	= Reverse Voltage(200V)
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

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

**Ordering Information**

Device	Package	Shipping
SDUR820	TO-220AC (Pb-Free)	50 pcs/ tube

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

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

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