

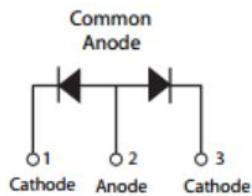
## SDUR2020CTR ULTRAFAST RECTIFIER


**TO-220AB**

### 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
- Terminals finish: 100% Pure Tin
- This is a Pb – free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Maximum Ratings(at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RMM}$	-		
Working Peak Reverse Voltage	$V_{RWM}$		200	V
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_F (AV)$	$T_c=133^\circ\text{C}$ , In DC	10(Per Leg) 20(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	$I_{FSM}$	8.3ms, Half Sine pulse	120	A

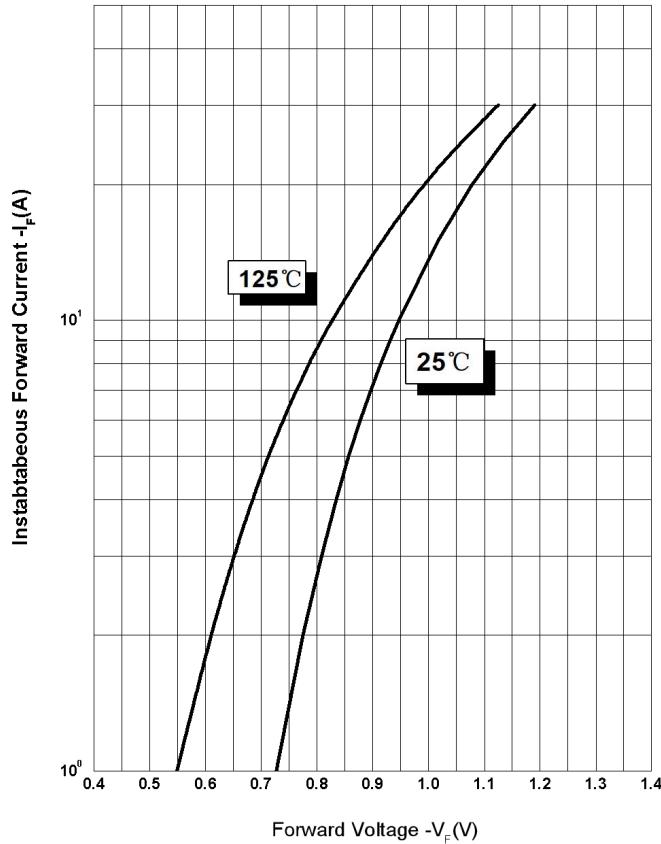
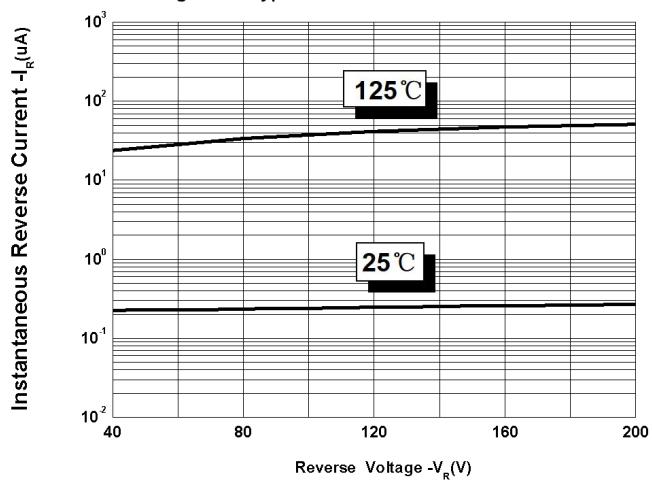
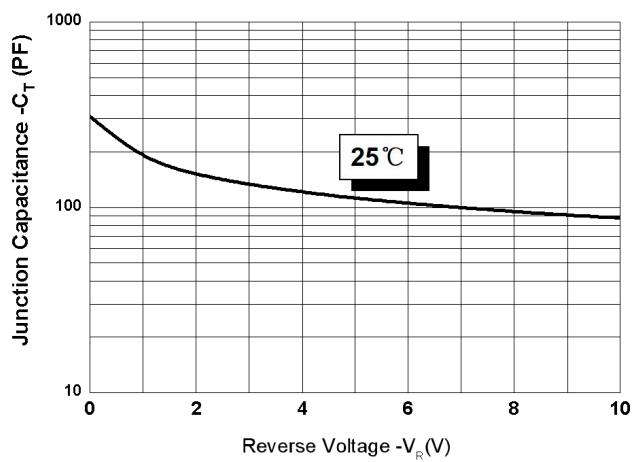
### Electrical Characteristics:

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	$V_{F1}$	@ 10A, Pulse, $T_J = 25^\circ\text{C}$	-	0.95	1.05	V
	$V_{F2}$	@ 10A, Pulse, $T_J = 125^\circ\text{C}$	-	0.83	0.85	V
Reverse Current(Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^\circ\text{C}$	-	0.3	10	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^\circ\text{C}$	-	51	500	$\mu\text{A}$
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rr}=250\text{mA}$	-	30	35	ns
Isolation Voltage	$V_{ISO}$	$t = 1.0 \text{ second}$	50/60HZ, RMS;	3000	-	V
		$t = 1.0 \text{ minute}$	$I_{ISO} \leq 1\text{mA}$	2500	-	

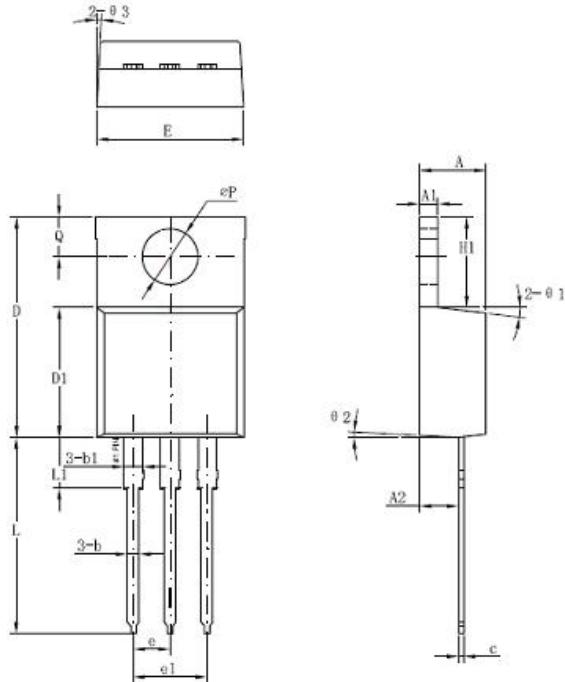
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

**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	1.6	°C/W
Approximate Weight	wt	-	2	g
Case Style			TO-220AB	

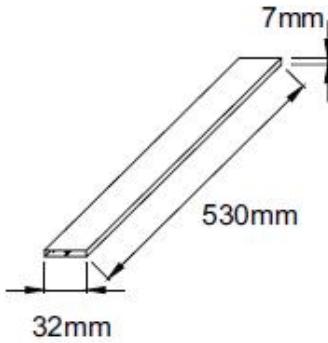
**Ratings and Characteristics Curves**
**Figure 1 Typical Forward Characteristics**

**Figure 2 Typical Reverse Characteristics**

**Figure 3 Typical Junction Capacitance**


### Mechanical Dimensions TO-220AB

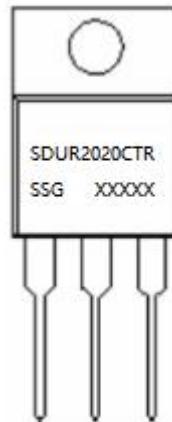


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	3.56	-	4.83
A1	0.51	-	1.40
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	9.65	-	10.67
e	-	2.54	-
e1	-	5.08	-
H1	5.84	-	6.86
L	12.70	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-
Q	2.54	-	3.43

### Tube Specification



### Marking Diagram



Where XXXXX is YYWWL

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

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

### Ordering Information

Device	Package	Shipping
SDUR2020CTR	TO-220AB (Pb-Free)	50 pcs/ tube

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

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