



**THE DATASHEET OF  
SDUR3020WT**



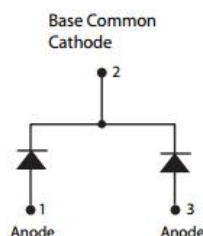
## SDUR3020WT ULTRAFAST RECTIFIER



### 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	$V_{RRM}$	-	200	V
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c=140^\circ\text{C}$ , rectangular wave form	15(Per Leg) 30(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	$I_{FSM}$	8.3ms, Half Sine pulse	110	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Min.	Typ.	Max.	Units
Breakdown voltage, Blocking voltage	$V_{BR}$ $V_R$	$I_R = 50\mu\text{A}$	200	-	-	V
Forward Voltage Drop (Per Leg)*	$V_{F1}$	@ 15A, Pulse, $T_J = 25^\circ\text{C}$	-	0.85	1.05	V
	$V_{F2}$	@ 15A, Pulse, $T_J = 125^\circ\text{C}$	-	0.74	0.90	V
Reverse Current (Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	-	0.04	10	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	-	30	500	$\mu\text{A}$
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F=500\text{mA}, I_R=1\text{A}, \text{and } I_m=250\text{mA}$	-	32	35	ns

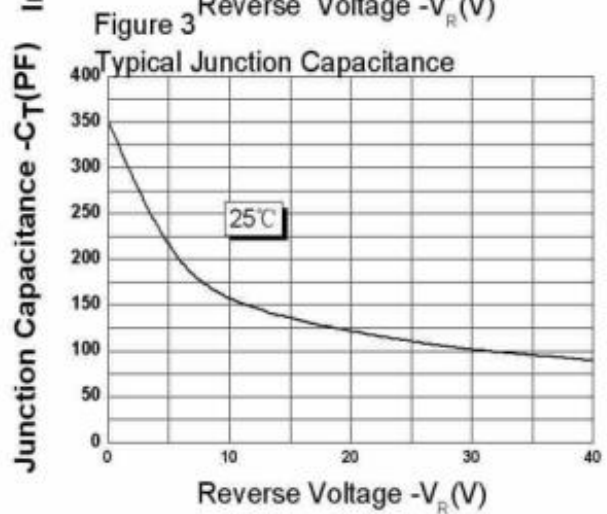
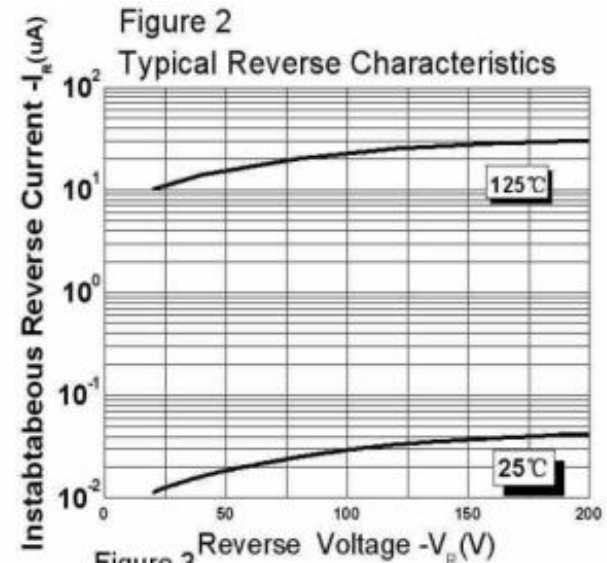
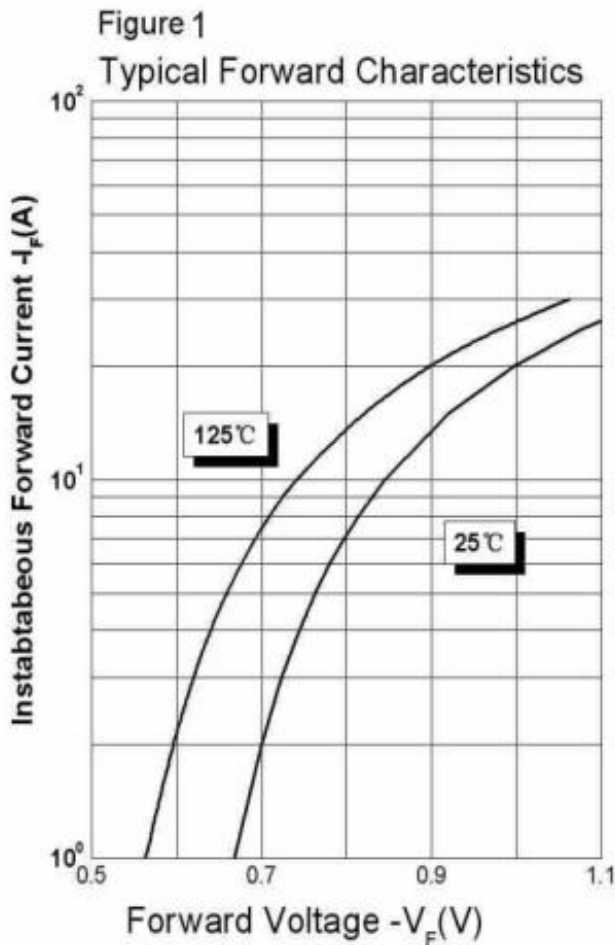
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

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

**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	-	6.28	g
Case Style	TO-247AD			

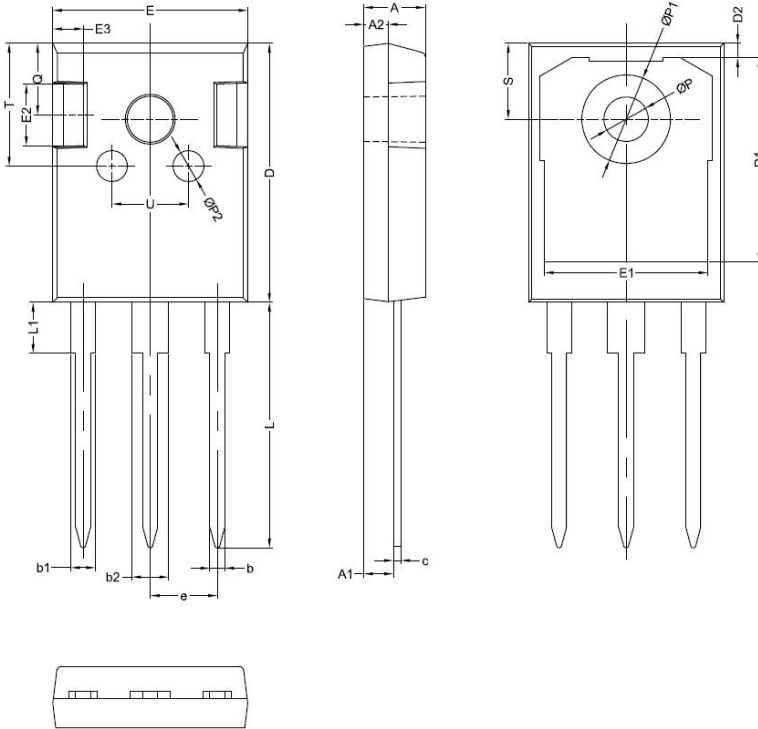
**Ratings and Characteristics Curves**



**Technical Data**  
Data Sheet N0164 Rev. A



**Mechanical Dimensions TO-247AD**



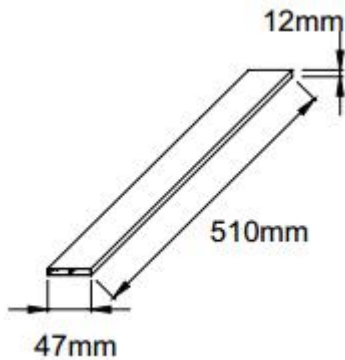
SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.40
b1	1.80	2.00	2.20
b2	2.80	3.00	3.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.55	
D2		1.20	
E	15.45	15.80	16.00
E1		13.30	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.70
L1		4.13	
P	3.50	3.60	3.70
P1	7.1		7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

**Ordering Information:**

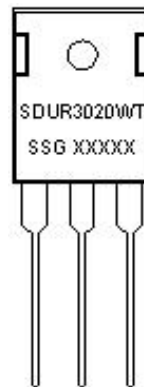
Device	Package	Shipping
SDUR3020WT	TO-247AD(Pb-Free)	25pcs / tube

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

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- SDUR = Device Type
- 30 = Forward Current (30A)
- 20 = Reverse Voltage (200V)
- WT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number



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

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