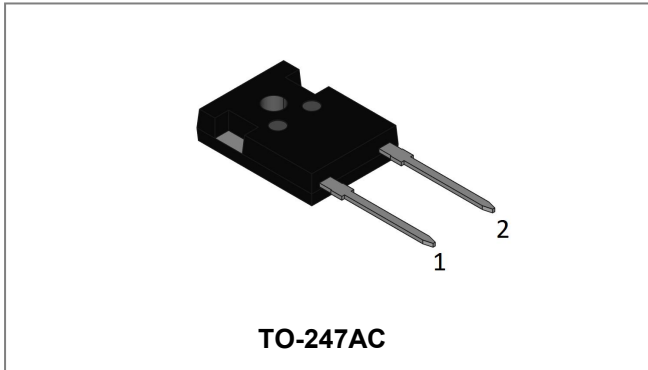


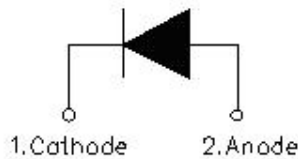
## SDUR30F60W ULTRAFAST RECTIFIER



### 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
- 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 ( $T_c = 25^\circ\text{C}$ unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	$V_{RRM}$	-	600	V
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	$T_c=153^\circ\text{C}$ , In DC	30	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	150	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25°C	1.38	-	V
		@ 30A, Pulse, T <sub>J</sub> = 25°C	1.66	2.20	
	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 125°C	1.20	-	V
		@ 30A, Pulse, T <sub>J</sub> = 125°C	1.48	2.00	
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25°C	0.009	10	uA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125°C	0.006	1	mA
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 500mA, I <sub>R</sub> = 1A, and I <sub>rm</sub> = 250mA, T <sub>J</sub> = 25°C	29	40	ns
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 30A, diF/dt = -210A/μs V <sub>R</sub> = 380V, T <sub>J</sub> = 25°C	104	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		285	-	nC
Reverse Recovery Current	I <sub>RRM</sub>		5.2	-	A
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 30A, diF/dt = -210A/μs V <sub>R</sub> = 380V, T <sub>J</sub> = 125°C	144	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		828	-	nC
Reverse Recovery Current	I <sub>RRM</sub>		8.4	-	A

\* Pulse width < 300 μs, duty cycle < 2%

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	0.34	°C/W
Approximate Weight	wt	-	6.28	g
Case Style	TO-247AC			

**Ratings and Characteristics Curves**

Figure 1 Typical Forward Characteristics

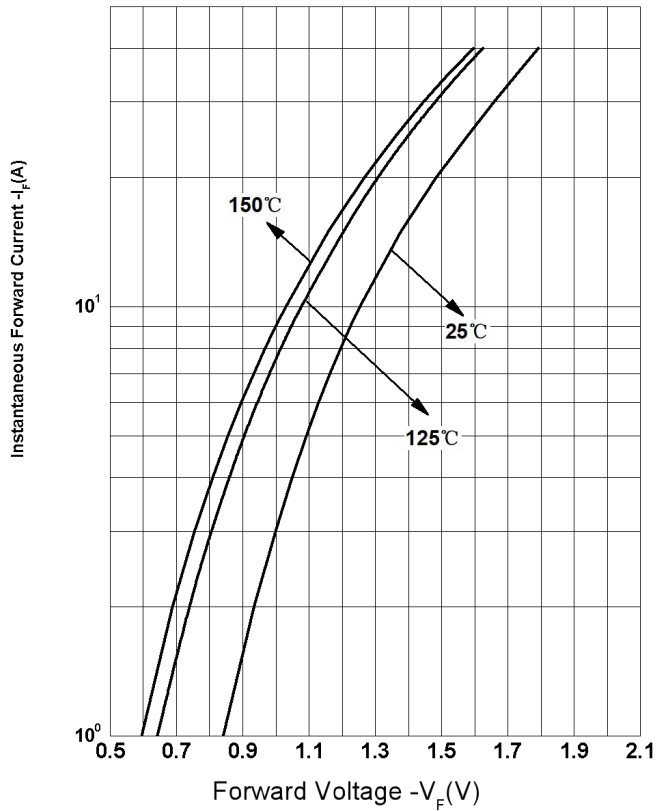


Figure 2 Typical Reverse Characteristics

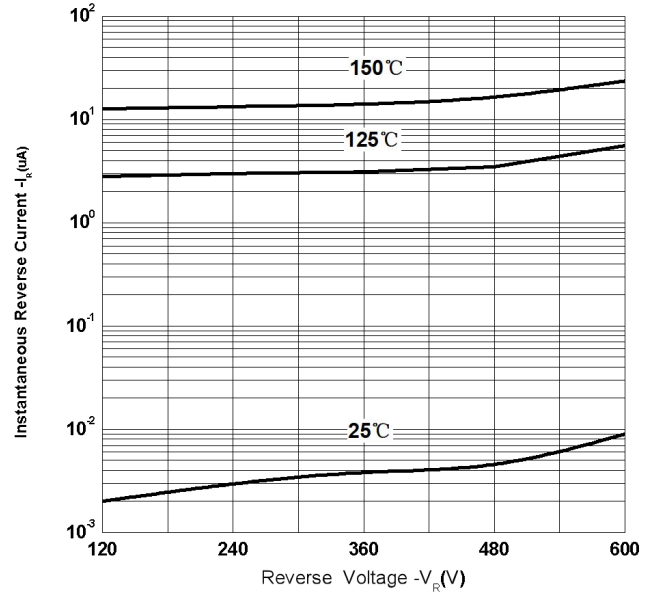
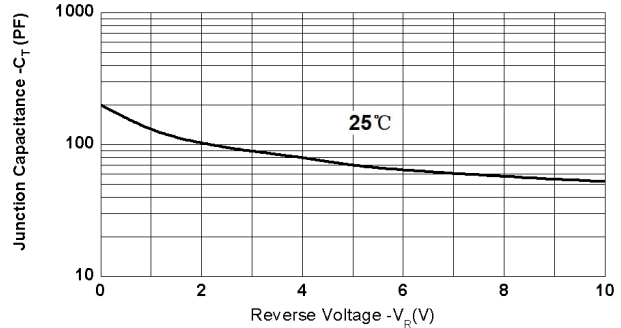
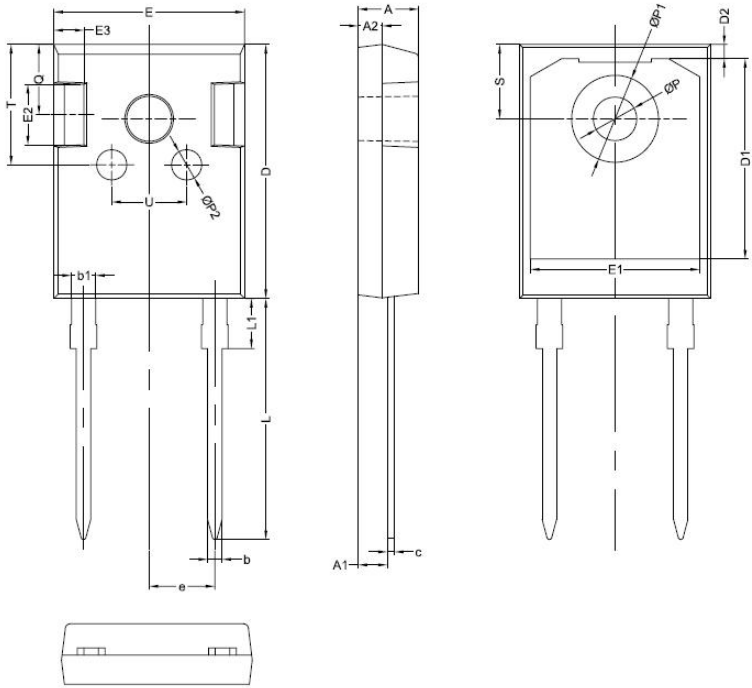


Figure 3 Typical Junction Capacitance

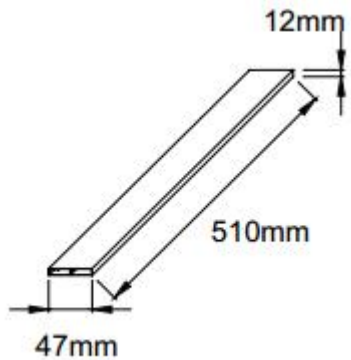


**Mechanical Dimensions TO-247AC**



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	1.35
b1	1.80	2.00	2.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.58	
D2		1.17	
E	15.60	15.80	16.00
E1		14.02	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1	7.1	7.19	7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- SDUR = Device Type
- 30 = Forward Current (30A)
- F = F
- 60 = Reverse Voltage (600V)
- W = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information:**

Device	Package	Shipping
SDUR30F60W	TO-247AC(Pb-Free)	25pcs / tube

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