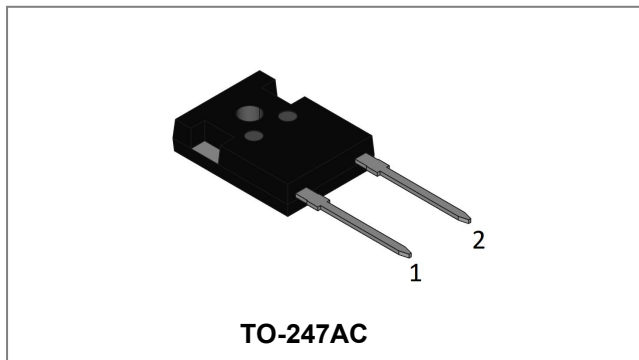


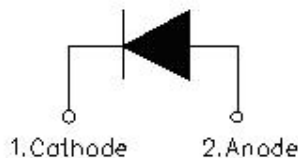
SDUR6060W ULTRAFAST RECTIFIER



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 (limiting values, $T_c = 25^\circ\text{C}$ unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	600	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c = 70^\circ\text{C}$, rectangular wave form	60	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	600	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@30A, Pulse, $T_J = 25^\circ\text{C}$ @ 60A, Pulse, $T_J = 25^\circ\text{C}$	1.42 1.64	- 2.0	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	1	100	μA
	I_{R2}	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	1	14	mA
Reverse Recovery Time	t_{rr}	$I_F = 500\text{mA}, I_R = 1\text{A}, \text{ and } I_{rm} = 250\text{mA}$	43	50	ns
Reverse Recovery Time	t_{rr}	$I_F = 1\text{A}, diF/dt = 100\text{A}/\mu\text{s}$ $V_R = 30\text{V}, T_J = 25^\circ\text{C}$	38	-	ns
Reverse Recovery Charge	Q_{rr}		45	-	nC
Reverse Recovery Current	I_{RRM}		2.4	-	A
Reverse Recovery Time	t_{rr}	$I_F = 60\text{A}, diF/dt = 200\text{A}/\mu\text{s}$ $V_R = 400\text{V}, T_J = 25^\circ\text{C}$	70	-	ns
Reverse Recovery Charge	Q_{rr}		280	-	nC
Reverse Recovery Current	I_{RRM}		8	-	A
Reverse Recovery Time	t_{rr}	$I_F = 60\text{A}, diF/dt = 200\text{A}/\mu\text{s}$ $V_R = 400\text{V}, T_J = 125^\circ\text{C}$	120	-	ns
Reverse Recovery Charge	Q_{rr}		576	-	nC
Reverse Recovery Current	I_{RRM}		10	-	A

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	0.34	$^\circ\text{C}/\text{W}$
Approximate Weight	wt	-	6.28	g
Case Style	TO-247AC			

Ratings and Characteristics Curves

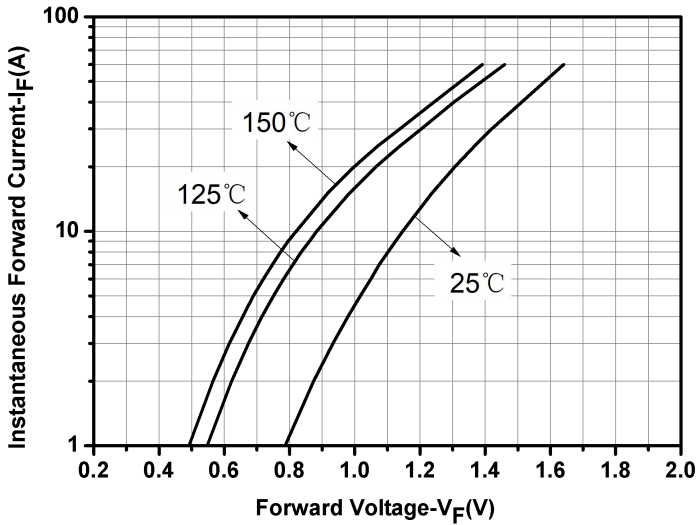


Fig.1-Typical Forward Voltage Characteristics

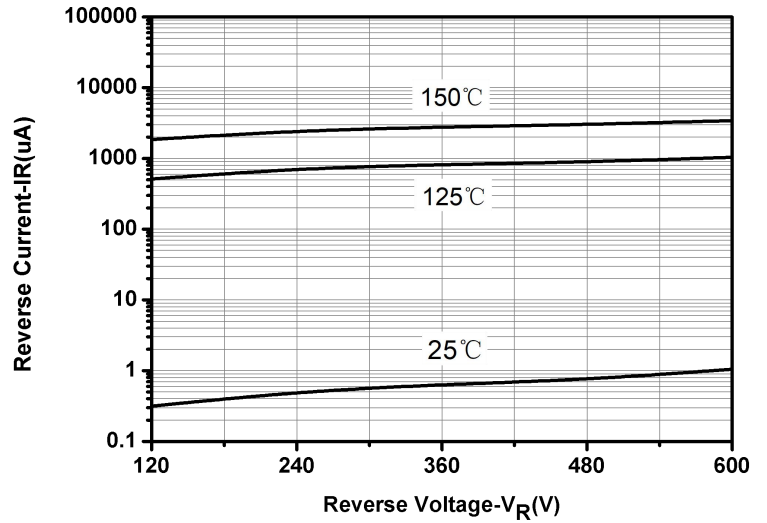


Fig.2-Typical Reverse Characteristics

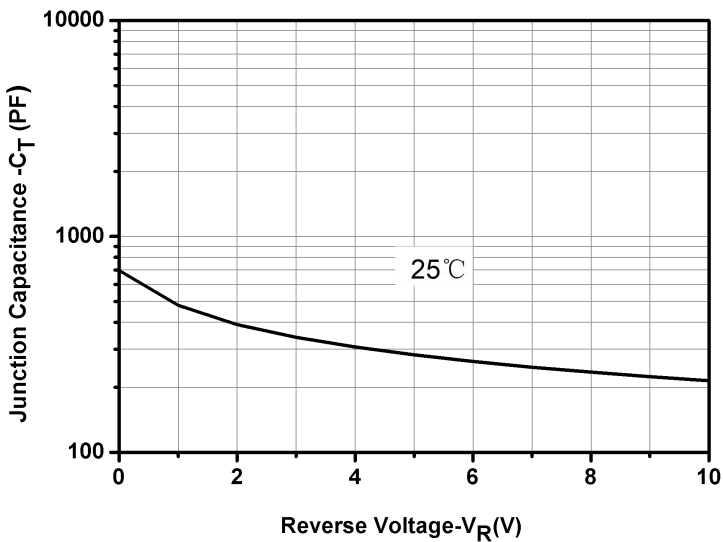


Fig.3-Capacitance vs. Reverse Voltage

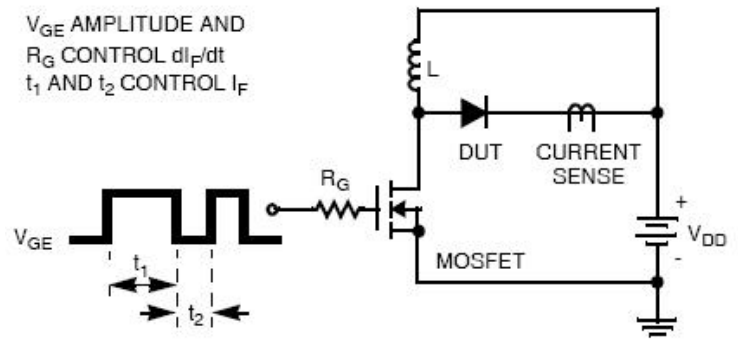
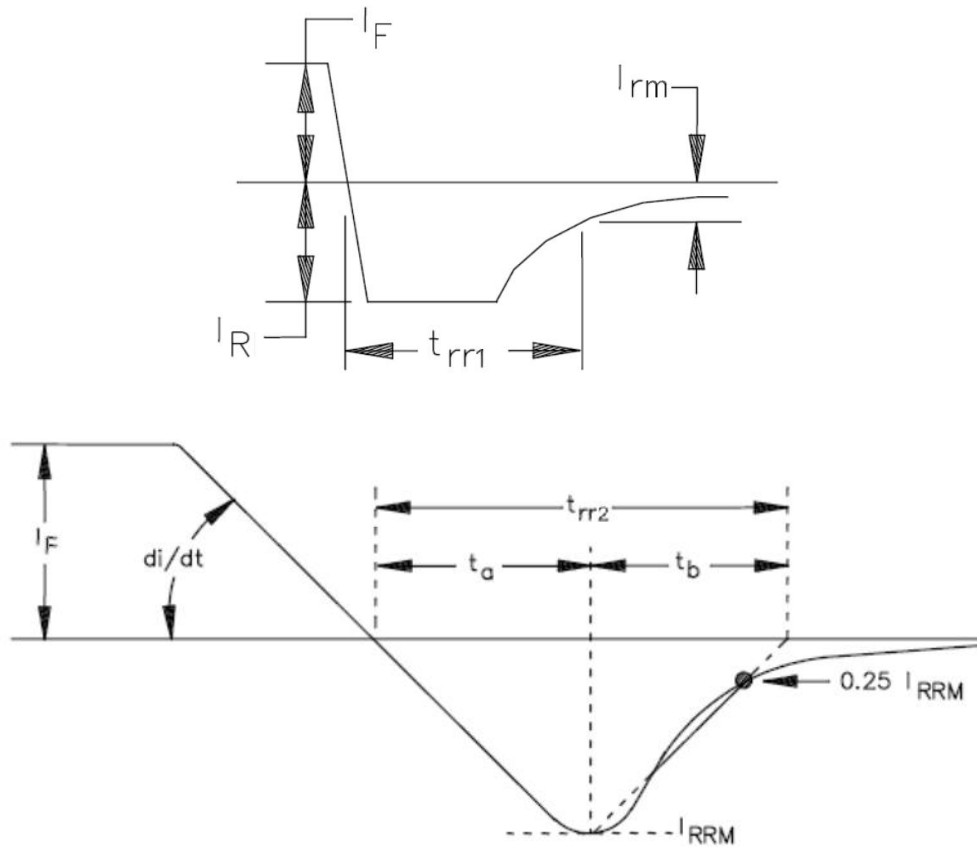


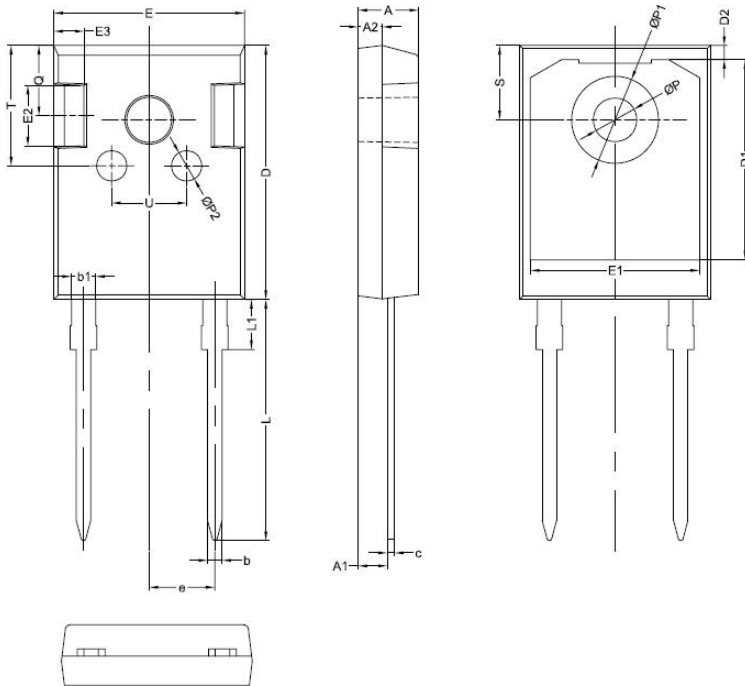
Fig.4-Diode Test Circuit



Note: 1. t_{rr1} MIL-STD-750 Test Method 4031, condition "B".
2. t_{rr2} MIL-STD-750 Test Method 4031, condition "D".

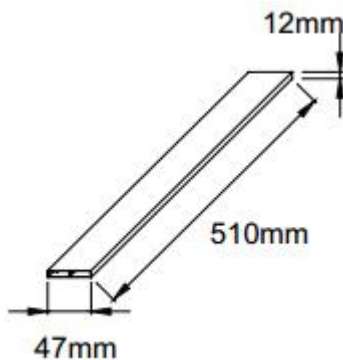
Fig.5-Reverse Recovery Waveform

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
- 60 = Forward Current (60A)
- 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
SDUR6060W	TO-247AC(Pb-Free)	25pcs / tube

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