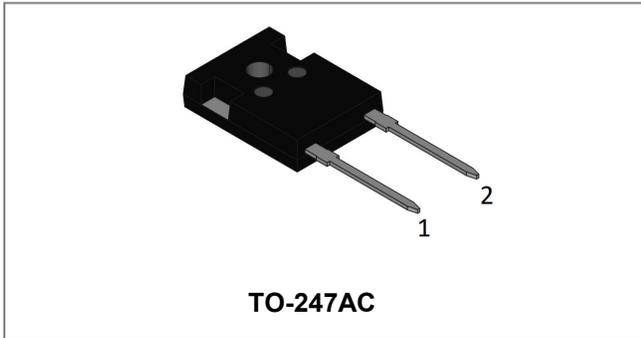


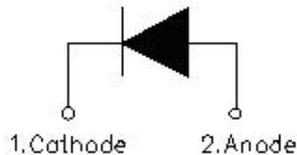
SDUR60F60W ULTRAFAST RECTIFIER



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
- Plastic Material has UL Flammability Classification 94V-0
- 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	V_{RRM}	-	600	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_{F(AV)}$	$T_c = 138^\circ\text{C}$	60	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	450	A

Electrical Characteristics

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 30A, Pulse, $T_J = 25^\circ\text{C}$ @ 60A, Pulse, $T_J = 25^\circ\text{C}$	1.20 1.39	1.80	V
	V_{F2}	@ 30A, Pulse, $T_J = 125^\circ\text{C}$ @ 60A, Pulse, $T_J = 125^\circ\text{C}$	1.06 1.28	-	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.06	10	μA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	31	500	μA
Reverse Recovery Time	t_{rr}	$I_F = 500\text{mA}, I_R = 1\text{A}, \text{ and } I_{rr} = 250\text{mA}, T_J = 25^\circ\text{C}$	46	50	ns
Reverse Recovery Time	t_{rr}	$I_F = 30\text{A}, dI_F/dt = -200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_J = 25^\circ\text{C}$	75	-	ns
Reverse Recovery Charge	Q_{rr}		250	-	nC
Reverse Recovery Current	I_{rr}		6	-	A
Reverse Recovery Time	t_{rr}	$I_F = 30\text{A}, dI_F/dt = -200\text{A}/\mu\text{s}, V_R = 400\text{V}, T_J = 150^\circ\text{C}$	133	-	ns
Reverse Recovery Charge	Q_{rr}		1205	-	nC
Reverse Recovery Current	I_{rr}		14	-	A
Reverse Recovery Time	t_{rr}	$I_F = 60\text{A}, dI_F/dt = -200\text{A}/\mu\text{s}, V_R = 300\text{V}, T_J = 25^\circ\text{C}$	58	-	ns
Reverse Recovery Charge	Q_{rr}		148	-	nC
Reverse Recovery Current	I_{rr}		5	-	A
Reverse Recovery Time	t_{rr}	$I_F = 60\text{A}, dI_F/dt = -200\text{A}/\mu\text{s}, V_R = 300\text{V}, T_J = 125^\circ\text{C}$	102	-	ns
Reverse Recovery Charge	Q_{rr}		625	-	nC
Reverse Recovery Current	I_{rr}		9.6	-	A

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +175	$^\circ\text{C}$
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

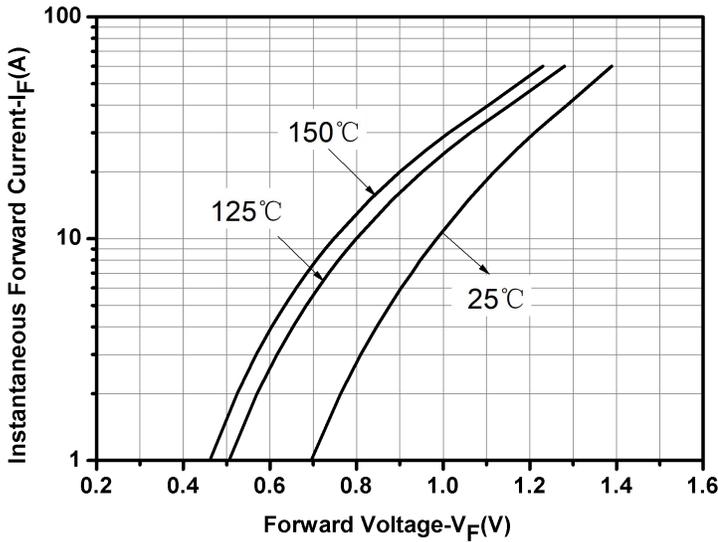


Fig.1-Typical Forward Voltage Characteristics

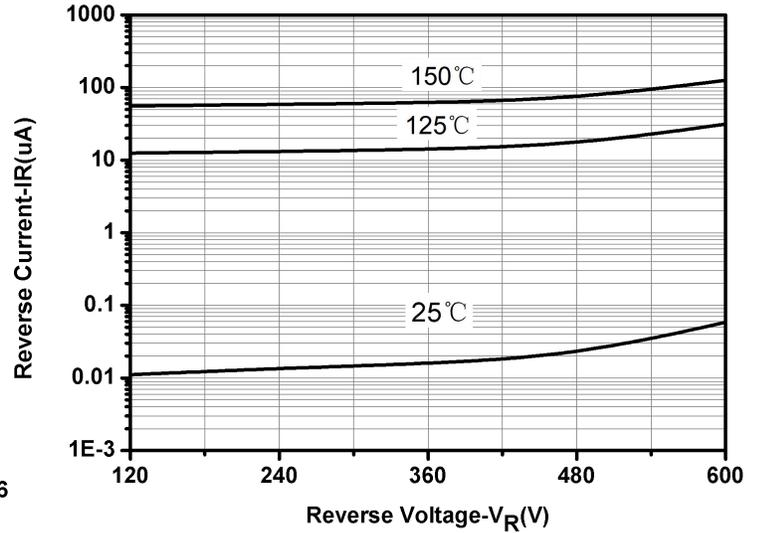


Fig.2-Typical Reverse Characteristics

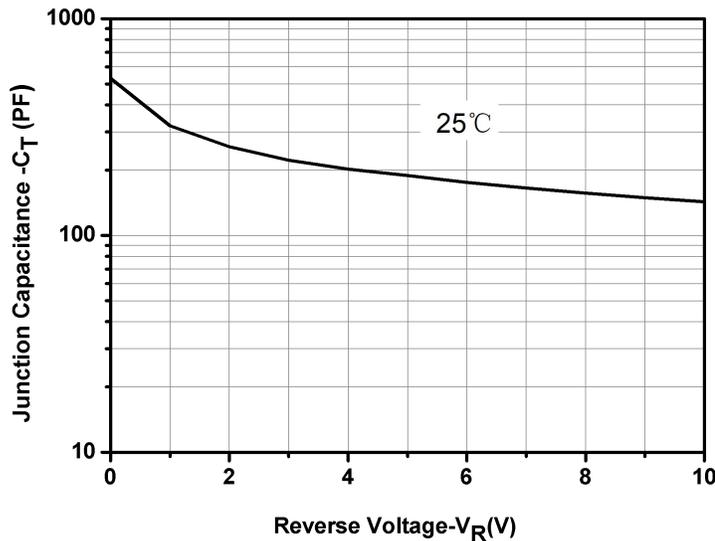


Fig.3-Capacitance vs. Reverse Voltage

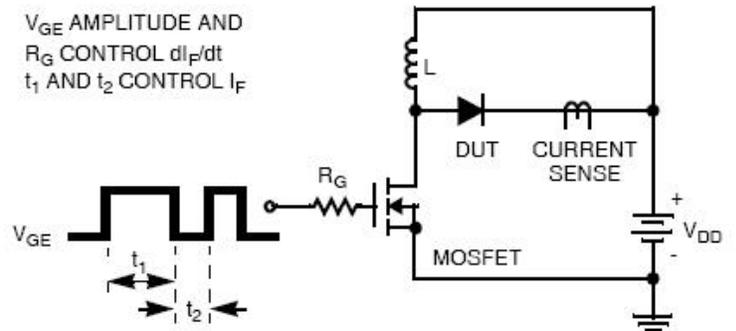
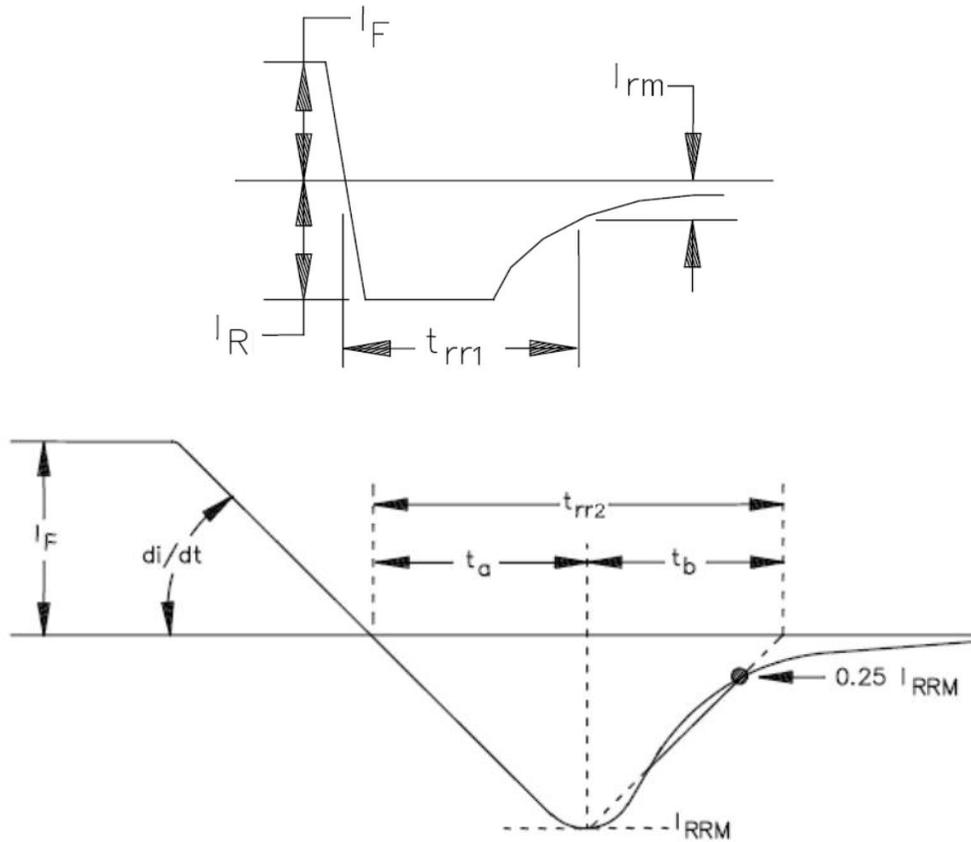


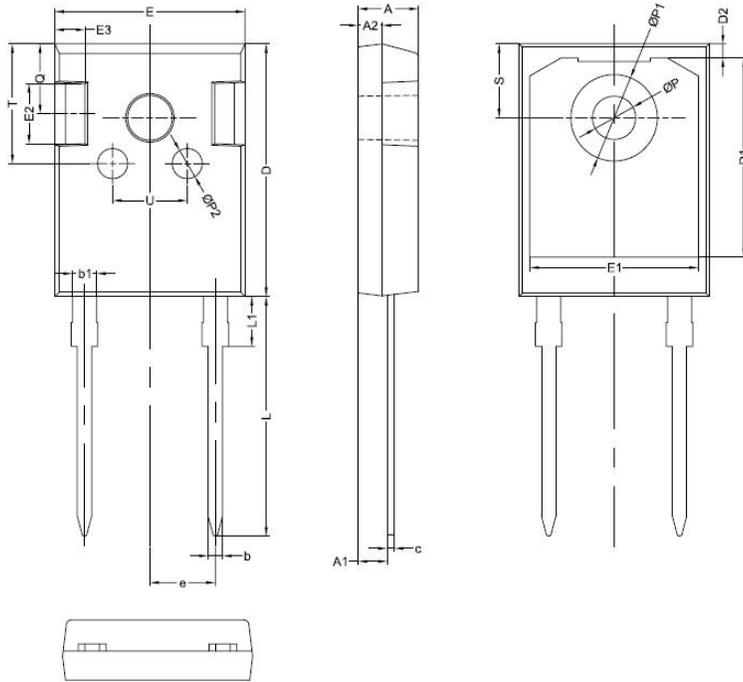
Fig.4-Diode Test Circuit



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

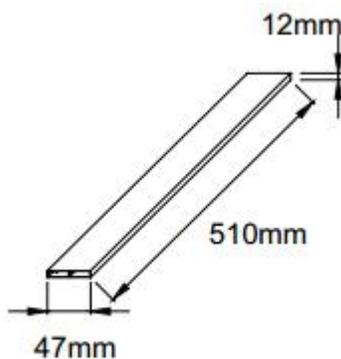


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.35
b1	1.80	2.00	2.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.58	
D2		1.17	
E	15.60	15.80	16.00
E1		14.02	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1	7.1	7.19	7.40
P2		2.50	
Q		5.80	
S	6.05	6.15	6.25
T		10.00	
U		6.20	

Ordering Information

Device	Package	Plating	Shipping
SDUR60F60W	TO-247AC(Pb-Free)	Pure Sn	25pcs / tube

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- 60 = Forward Current (60A)
- 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

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