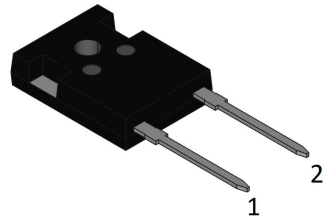
Technical Data
Data Sheet N2441, Rev. A

SDUR80Q60W ULTRAFAST RECTIFIER

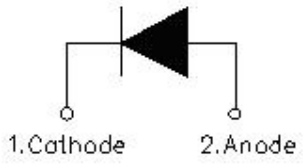


TO-247AC

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°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 @Tc=85°C, rectangular wave form	80	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	400	A

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Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 80A, Pulse, T_J = 25°C	1.65	2.4	V
Reverse Current*	I_{R1}	@V_R = rated V_R T_J =25°C	0.08	500	uA
	I_{R2}	@V_R = rated V_R T_J =125°C	0.04	20	mA
Reverse Recovery Time	t_{rr}	I_F=500mA,I_R=1A,and I_{rm}=250mA, T_J = 25°C	42	50	ns
Reverse Recovery Time	t_{rr}	I_F = 1A, diF/dt = 100A/μs V_R = 30V, T_J = 25°C	35	-	ns
Reverse Recovery Charge	Q_{rr}		35	-	nC
Reverse Recovery Current	I_{RRM}		2	-	A
Reverse Recovery Time	t_{rr}	I_F = 30A, diF/dt = 200A/μs, V_R = 400V, T_J = 25°C	75	-	ns
Reverse Recovery Charge	Q_{rr}		195	-	nC
Reverse Recovery Current	I_{RRM}		5	-	A
Reverse Recovery Time	t_{rr}	I_F =30A, diF/dt = 200A/μs, V_R = 400V, T_J = 125°C	124	-	ns
Reverse Recovery Charge	Q_{rr}		434	-	nC
Reverse Recovery Current	I_{RRM}		7	-	A

* Pulse width < 300 μs, 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	0.34	°C/W
Approximate Weight	wt	-	6.28	g
Case Style	TO-247AC			

Ratings and Characteristics Curves

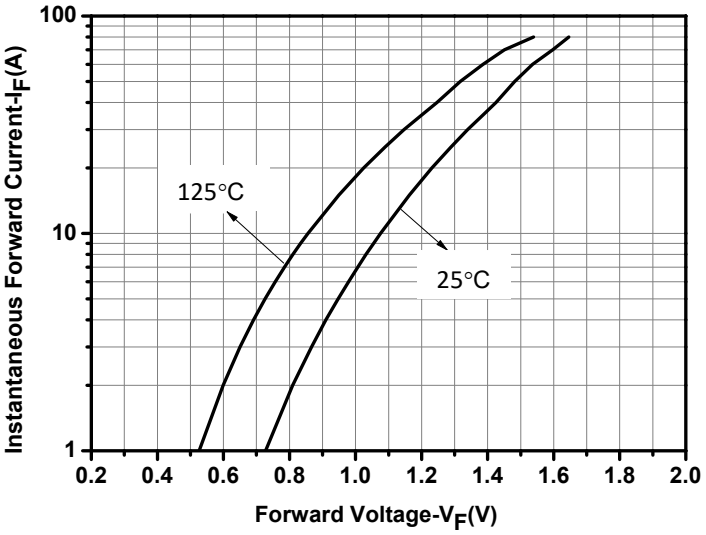


Fig.1-Typical Forward Voltage Characteristics

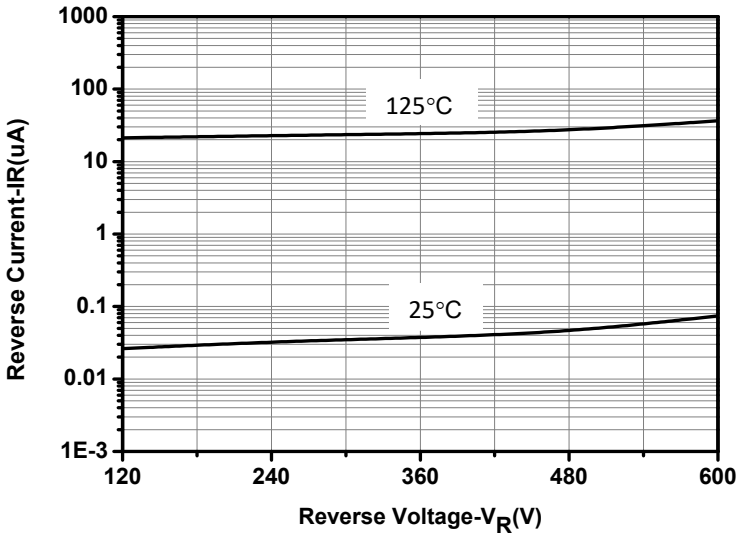


Fig.2-Typical Reverse Characteristics

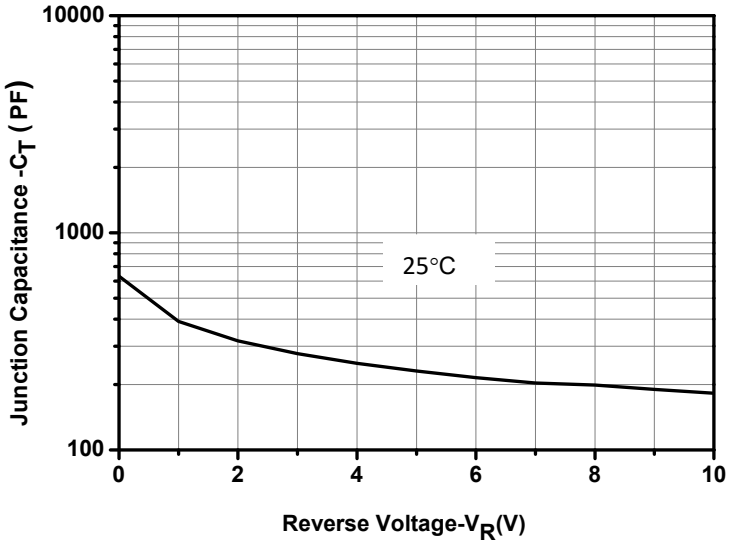


Fig.3-Capacitance vs. Reverse Voltage

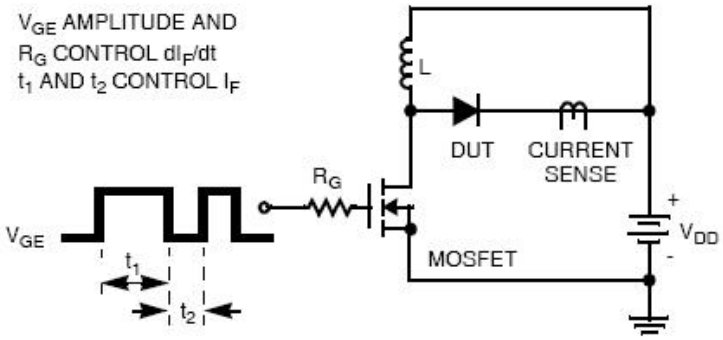
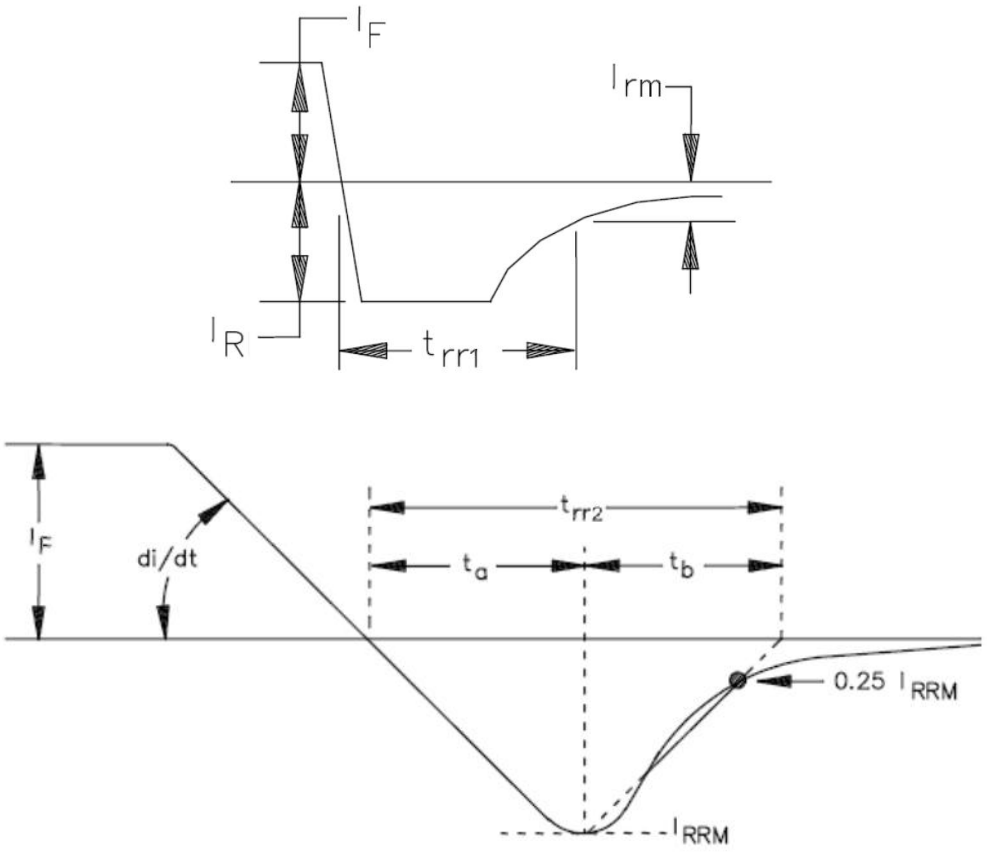


Fig.4-Diode Test Circuit



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

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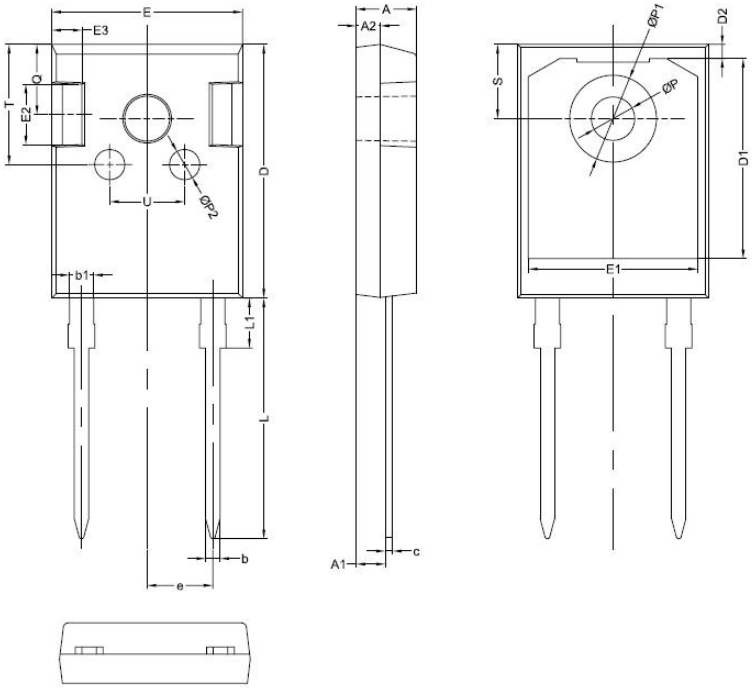
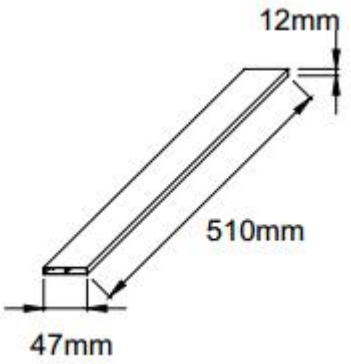
Mechanical Dimensions TO-247AC

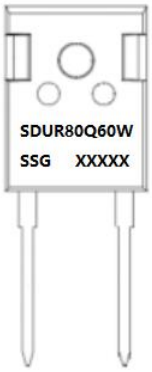


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.35
b1	1.80	2.00	2.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.58	
D2		1.17	
E	15.60	15.80	16.00
E1		14.02	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1	7.1	7.19	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
80	= Forward Current (80A)
Q	= Q
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
SDUR80Q60W	TO-247AC(Pb-Free)	25pcs / tube

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