

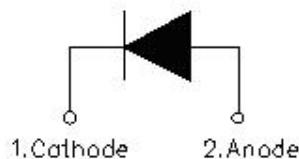
SDUR60Q80W ULTRAFAST RECTIFIER



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-O
- 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, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	800	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_F(AV)$	$T_c=126^{\circ}C$, In DC	60	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	400	A

Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +175	°C
Storage Temperature	T_{stg}	-	-55 to +175	°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		

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 30A, Pulse, T _J = 25°C	1.74	-	V
		@ 60A, Pulse, T _J = 25°C	2.06	2.4	V
	V _{F2}	@ 30A, Pulse, T _J = 125°C	1.43	-	V
		@ 60A, Pulse, T _J = 125°C	1.80	2.0	V
	V _{F3}	@ 30A, Pulse, T _J = 150°C	1.34	-	V
		@ 60A, Pulse, T _J = 150°C	1.70	-	V
Reverse Current*	I _{R1}	@V _R = rated V _R , T _J =25°C	0.02	25	uA
	I _{R2}	@V _R = rated V _R , T _J =125°C	21	500	uA
	I _{R3}	@V _R = rated V _R , T _J =150°C	90	-	uA
Reverse Recovery Time	t _{rr1}	I _F =500mA, I _R =1A, and I _{rm} =250mA, T _J =25°C	46	60	ns
Reverse Recovery Time	t _{rr}	I _F = 30A, diF/dt = -200A/μs V _R = 300V, T _J = 25°C	218	-	ns
Reverse Recovery Charge	Q _{rr}		610	-	nC
Reverse Recovery Current	I _{RRM}		5.6	-	A
Reverse Recovery Time	t _{rr}	I _F = 30A, diF/dt = -200A/μs V _R = 300V, T _J = 125°C	293	-	ns
Reverse Recovery Charge	Q _{rr}		1639	-	nC
Reverse Recovery Current	I _{RRM}		11.2	-	A
Reverse Recovery Time	t _{rr}	I _F = 1A, diF/dt = -100A/μs V _R = 30V, T _J = 25°C	37.3	-	ns
Reverse Recovery Charge	Q _{rr}		45	-	nC
Reverse Recovery Current	I _{RRM}		2.4	-	A

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

Ratings and Characteristics Curves

Figure1 Typical Forward Characteristics

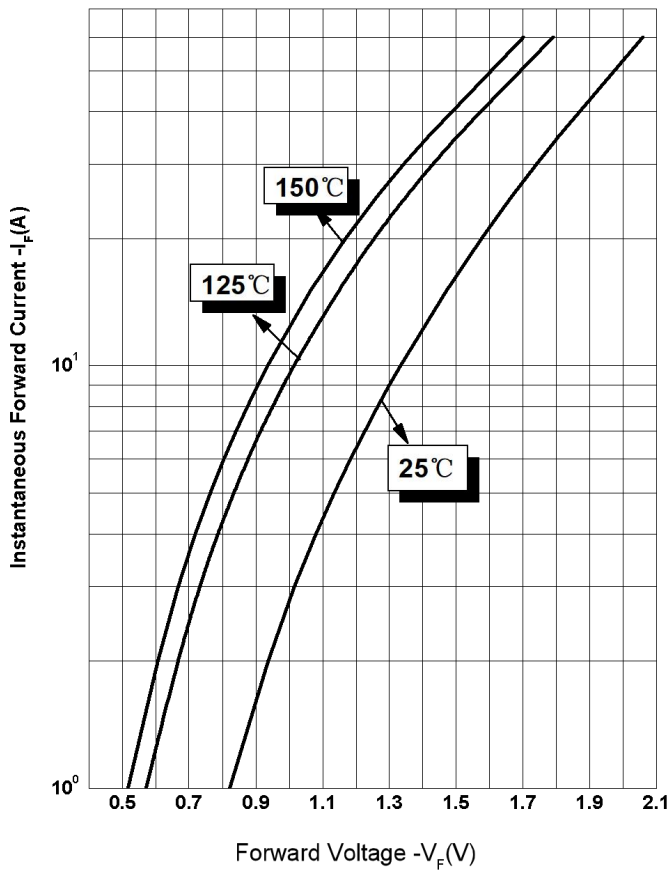


Figure 2 Typical Reverse Characteristics

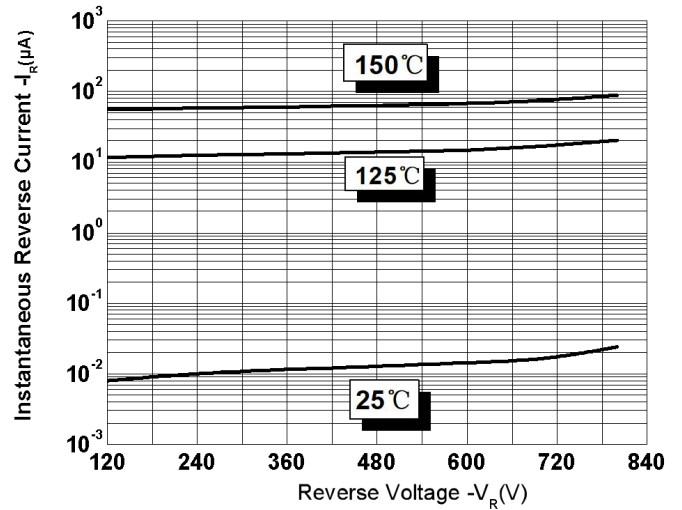
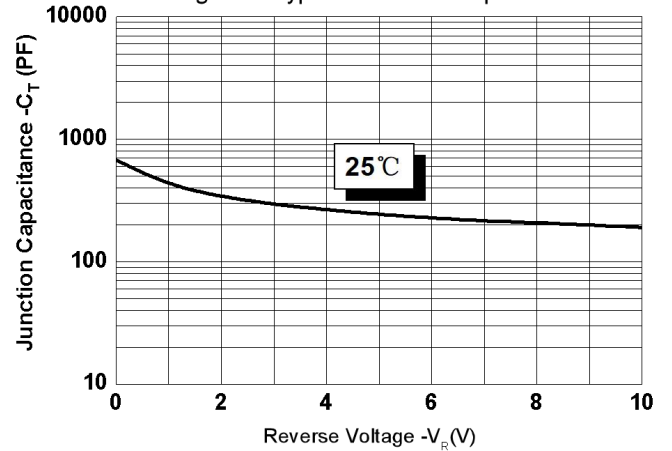
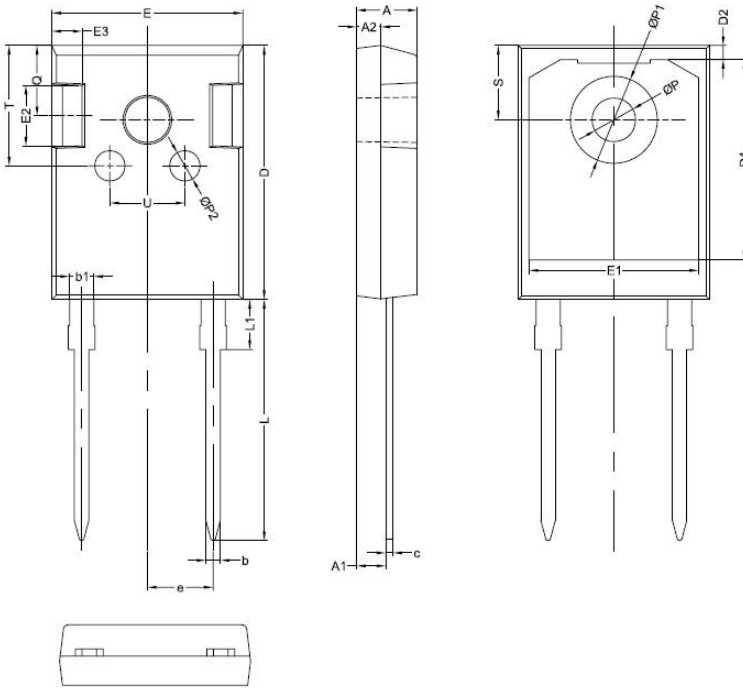


Figure 3 Typical Junction Capacitance



Mechanical Dimensions TO-247AC

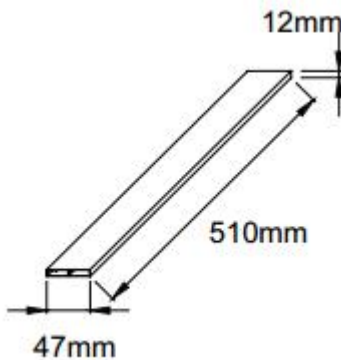


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.80	5.00	5.20
A1	2.20	2.41	2.61
A2	1.90	2.00	2.10
b	1.10	1.20	1.35
b1	1.80	2.00	2.20
c	0.50	0.60	0.75
D	20.30	21.00	21.20
D1		16.58	
D2		1.17	
E	15.60	15.80	16.00
E1		14.02	
E2		5.00	
E3		2.50	
e		5.44	
L	19.42	19.92	20.42
L1		4.13	
P	3.50	3.60	3.70
P1	7.1	7.19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

Ordering Information

Device	Package	Plating	Shipping
SDUR60Q80W	TO-247AC(Pb-Free)	Pure Sn	25pcs / tube

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- 60 = Forward Current (60A)
- Q = Q
- 80 = Reverse Voltage (800V)
- W = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

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