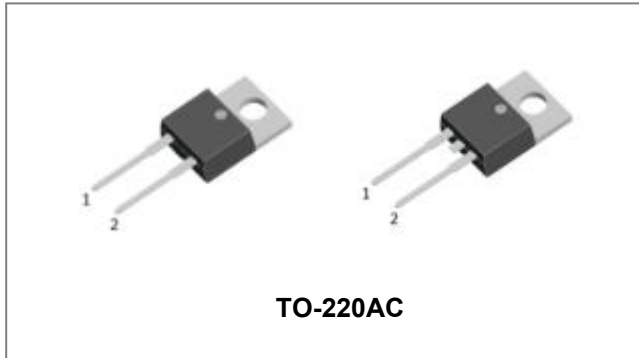


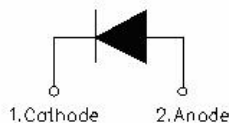
SDUR15Q60 ULTRAFAST RECTIFIER



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:

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 @ $T_c=138^\circ\text{C}$, rectangular wave form	15	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse, $T_c= 25^\circ\text{C}$	160	A

Electrical Characteristics:

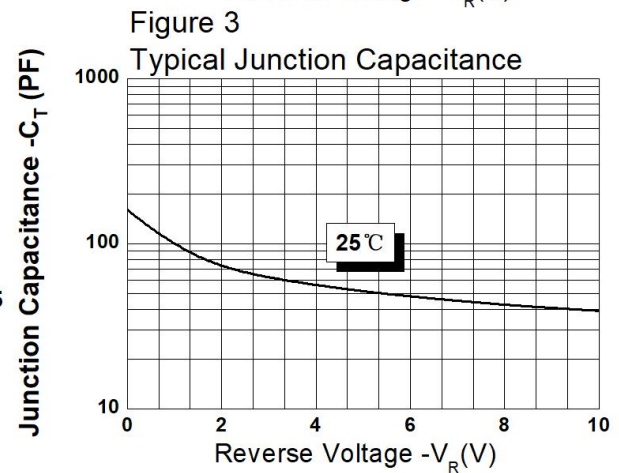
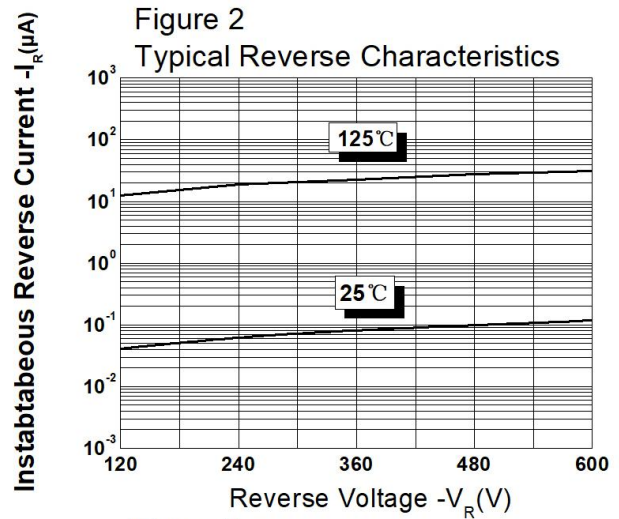
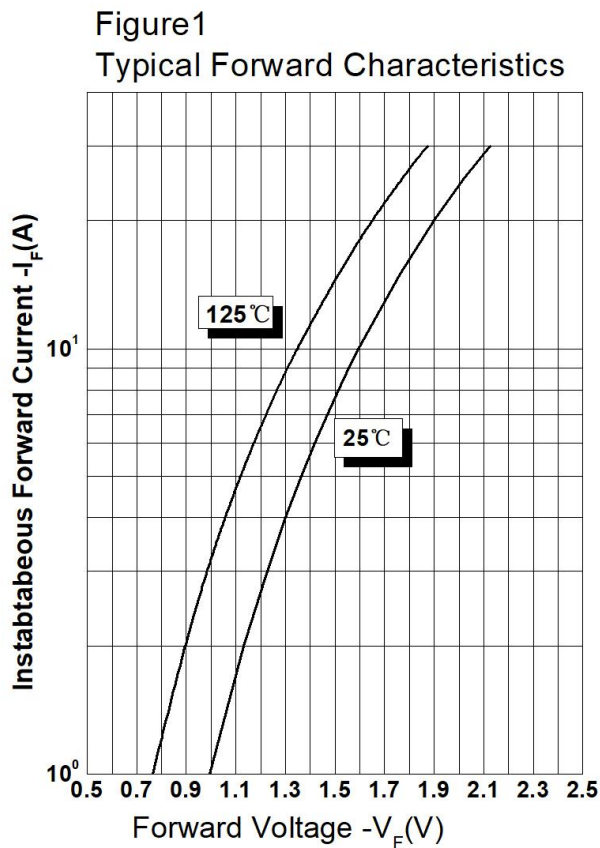
Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 15A, Pulse, $T_J = 25^\circ\text{C}$	1.76	2.0	V
	V_{F2}	@ 15A, Pulse, $T_J = 125^\circ\text{C}$	1.52	1.7	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.2	20	μA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	30	200	μA
Reverse Recovery Time	t_{rr1}	$I_F=500\text{mA}, I_R=1\text{A}, \text{ and } I_{m}=250\text{mA}, T_J = 25^\circ\text{C}$	28	40	ns
Reverse Recovery Time	t_{rr2}	$I_F = 1\text{A}, V_R=30\text{V}, dI_F/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	23	-	ns
		$I_F = 15\text{A}, V_R=400\text{V}, dI_F/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	62	-	ns
Reverse Recovery Time	t_a	$I_F = 15\text{A}, V_R=400\text{V}, dI_F/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	32	-	ns
Reverse Recovery Time	t_b	$I_F = 15\text{A}, V_R=400\text{V}, dI_F/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	30	-	ns
Reverse Recovery Charge	Q_{rr}	$I_F = 15\text{A}, V_R=400\text{V}, dI_F/dt = 100\text{A}/\mu\text{s}, T_J = 25^\circ\text{C}$	68	-	nc

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

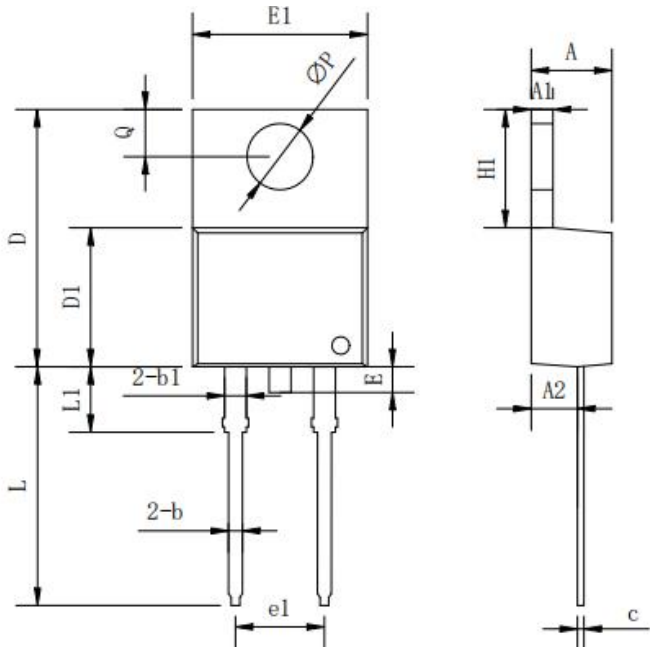
Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +175	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +175	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	1.15	$^\circ\text{C}/\text{W}$
Approximate Weight	wt	-	1.6	g
Case Style	TO-220AC			

Ratings and Characteristics Curves

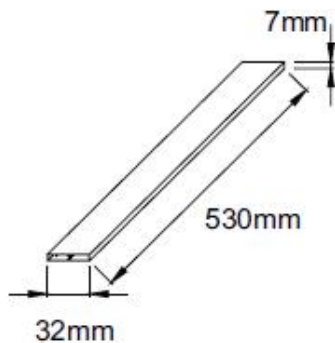


Mechanical Dimensions TO-220AC



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	3.56	-	4.83
A1	0.51	-	1.4
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	-	-	1.78
E1	9.65	10.16	10.67
e1	-	5.08	-
H1	5.84	-	6.86
L	12.7	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-

Tube Specification



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- 15 = Forward Current (15A)
- Q = Q
- 60 = Reverse Voltage(600V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

Ordering Information

Device	Package	Shipping
SDUR15Q60	TO-220AC (Pb-Free)	50 pcs/ tube

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