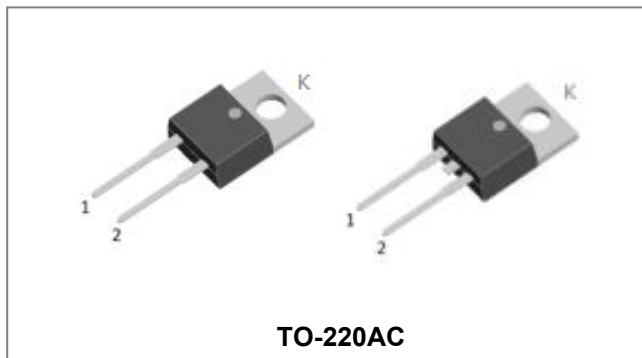


## SDUR15U60 ULTRAFAST RECTIFIER



### 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( $T_c = 25^\circ\text{C}$ 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	$I_F (AV)$	$T_c = 110^\circ\text{C}$ , In DC	15	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse	100	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 15A, Pulse, $T_J = 25^{\circ}\text{C}$	1.60	2.2	V
	$V_{F2}$	@ 15A, Pulse, $T_J = 125^{\circ}\text{C}$	1.40	2.0	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^{\circ}\text{C}$	0.03	20	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^{\circ}\text{C}$	0.09	1	mA
Reverse Recovery Time	$t_{rr}$	$I_F = 500\text{mA}$ , $I_R = 1\text{A}$ , and $I_{rm} = 250\text{mA}$ , $T_J = 25^{\circ}\text{C}$	20	25	ns
Reverse Recovery Time	$t_{rr}$	$I_F = 20\text{A}$ , $diF/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}$ , $T_J = 25^{\circ}\text{C}$	28	-	ns
Reverse Recovery Charge	$Q_{rr}$		39	-	nC
Reverse Recovery Current	$I_{RRM}$		2.4	-	A
Reverse Recovery Time	$t_{rr}$	$I_F = 20\text{A}$ , $diF/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}$ , $T_J = 125^{\circ}\text{C}$	107	-	ns
Reverse Recovery Charge	$Q_{rr}$		293	-	nC
Reverse Recovery Current	$I_{RRM}$		5.5	-	A

\* Pulse width < 300  $\mu\text{s}$ , 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	1.2	$^{\circ}\text{C}/\text{W}$
Approximate Weight	wt	-	1.6	g
Case Style	TO-220AC			

## Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

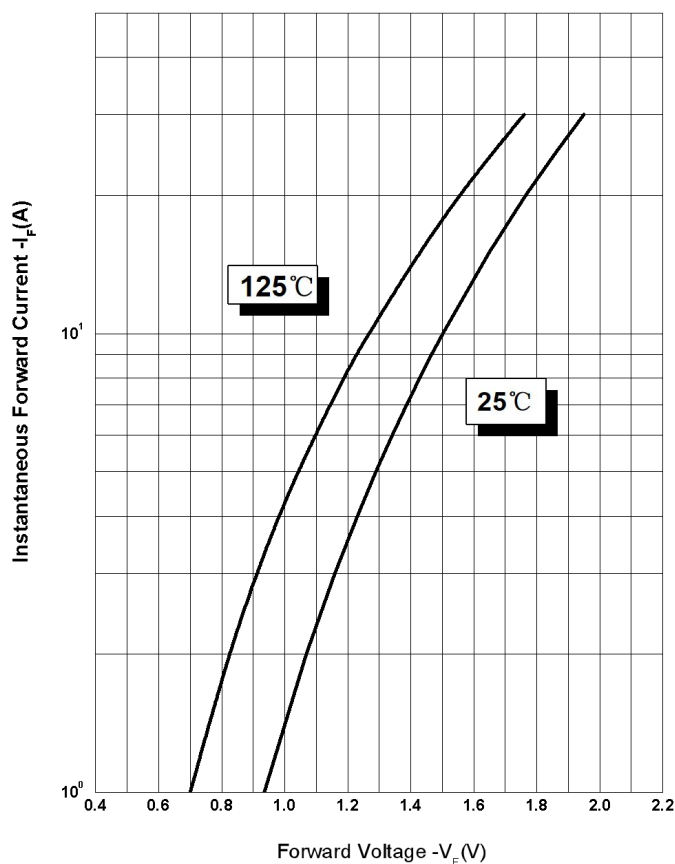


Figure 2 Typical Reverse Characteristics

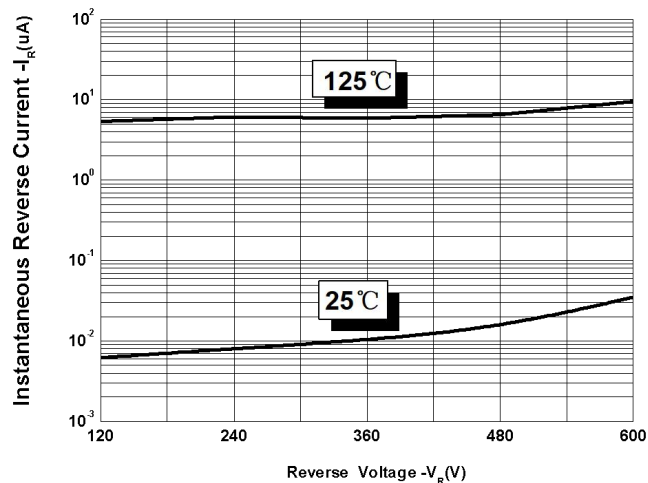
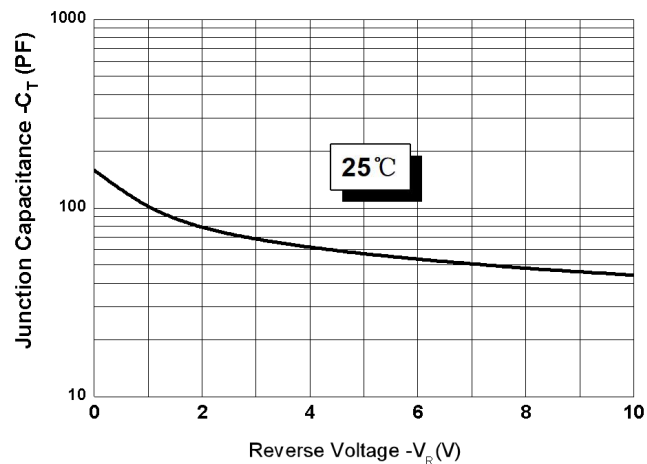
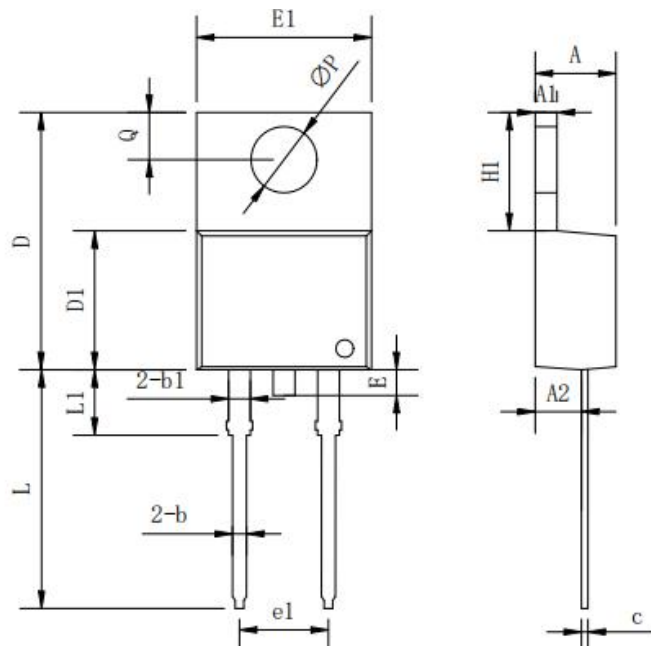


Figure 3 Typical Junction Capacitance

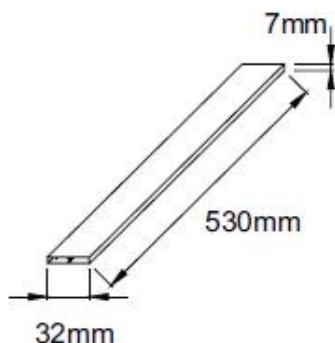


## Mechanical Dimensions TO-220AC



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	-
Q	2.54	-	3.43

## Tube Specification



## Marking Diagram



Where XXXXX is YYWWL

SDUR = Device Type  
15 = Forward Current (15A)  
U = U  
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
SDUR15U60	TO-220AC (Pb-Free)	50 pcs/ tube

**Technical Data**  
**Data Sheet N2519 Rev. -**



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