

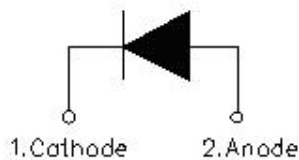
## SDURK30F60 ULTRAFAST RECTIFIER



### 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	$V_{RRM}$	-	600	V
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
Average Rectified Forward Current	$I_{F(AV)}$	$T_c = 70^\circ\text{C}$ , In DC	30	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	$I_{FSM}$	8.3ms, Half Sine pulse	170	A

**Electrical Characteristics:**

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 25°C @ 30A, Pulse, T <sub>J</sub> = 25°C	1.43 1.74	- 2.20	V
	V <sub>F1</sub>	@ 15A, Pulse, T <sub>J</sub> = 125°C @ 30A, Pulse, T <sub>J</sub> = 125°C	1.20 1.50	- 2.00	V
Reverse Current*	I <sub>R1</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 25°C	0.02	10	uA
	I <sub>R2</sub>	@V <sub>R</sub> = rated V <sub>R</sub> , T <sub>J</sub> = 125°C	0.006	1	mA
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> =500mA, I <sub>R</sub> =1A, and I <sub>rm</sub> =250mA, T <sub>J</sub> = 25°C	30	40	ns
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 30A, diF/dt = -210A/μs V <sub>R</sub> = 380V, T <sub>J</sub> = 25°C	113	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		310	-	nC
Reverse Recovery Current	I <sub>RRM</sub>		5.6	-	A
Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 30A, diF/dt = -210A/μs V <sub>R</sub> = 380V, T <sub>J</sub> = 125°C	149	-	ns
Reverse Recovery Charge	Q <sub>rr</sub>		840	-	nC
Reverse Recovery Current	I <sub>RRM</sub>		8.4	-	A

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

**Thermal-Mechanical Specifications:**

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T <sub>J</sub>	-	-55 to +175	°C
Storage Temperature	T <sub>stg</sub>	-	-55 to +175	°C
Typical Thermal Resistance Junction to Case	R <sub>θJC</sub>	DC operation	3.5	°C/W
Approximate Weight	wt	-	1.6	g
Case Style	ITO-220AC-2L			

**Ratings and Characteristics Curves**

Figure 1 Typical Forward Characteristics

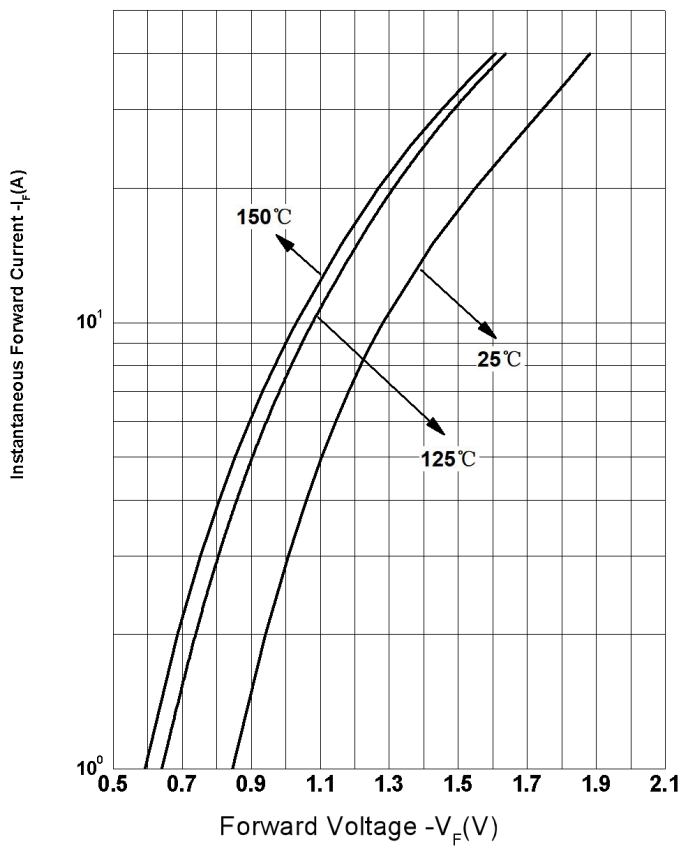


Figure 2 Typical Reverse Characteristics

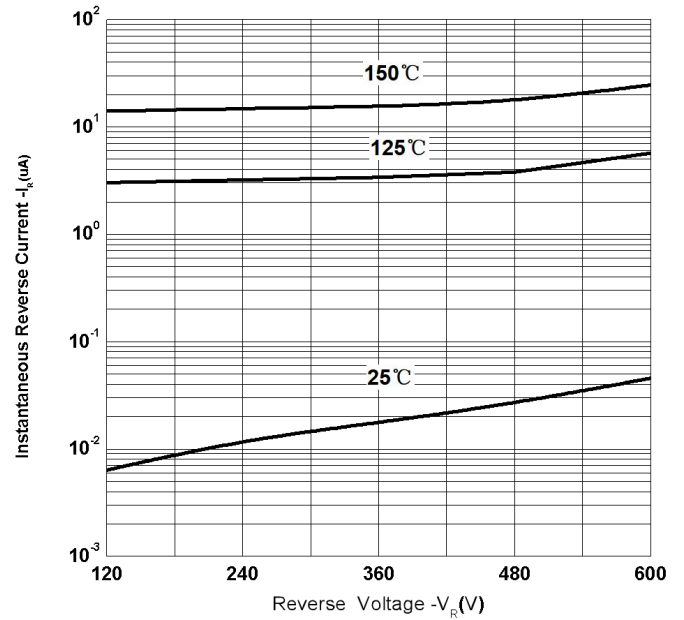
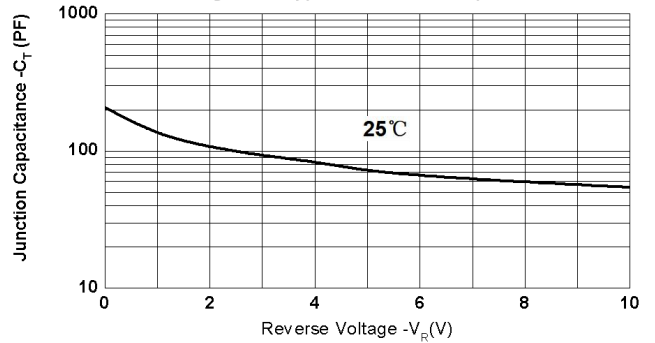
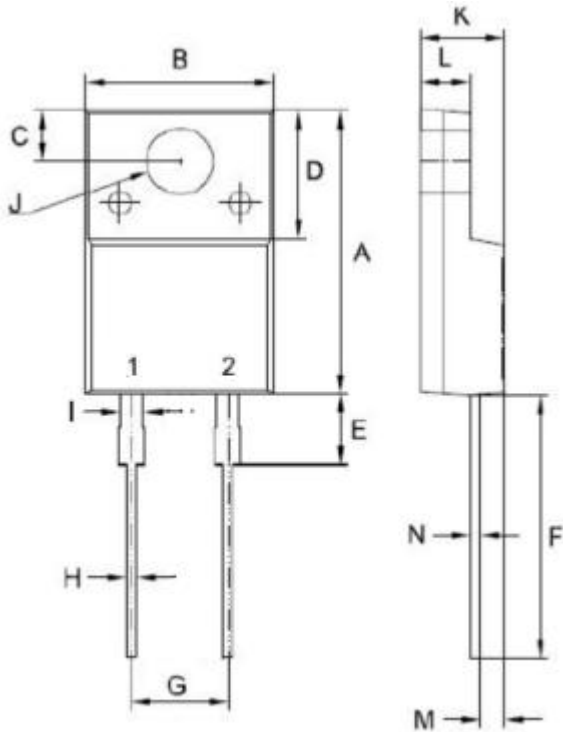


Figure 3 Typical Junction Capacitance

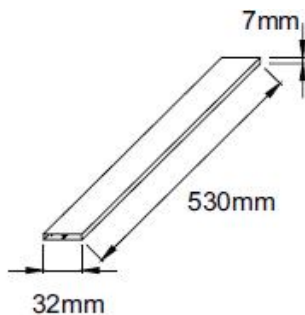


**Mechanical Dimensions ITO-220AC-2L**

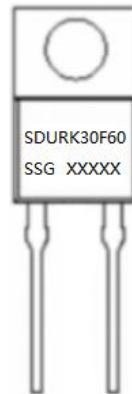


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	14.50	15.30	16.00
B	9.50	10.00	10.50
C	2.50	3.00	3.5
D	6.30	6.80	7.30
E	3.10	3.70	4.30
F	13.00	13.5	14.00
G	4.90	5.10	5.30
H	0.30	0.60	0.90
I	0.90	1.2	1.50
J	3.20	3.50	3.80
K	4.24	4.54	4.84
L	2.30	2.61	2.92
M	1.09	1.29	1.49
N	0.42	0.53	0.63

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- SDUR = Device Type
- K = Package type
- 30 = Forward Current (30A)
- F = F
- 60 = Reverse Voltage (600V)
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

**Ordering Information:**

Device	Package	Shipping
SDURK30F60	ITO-220AC-2L(Pb-Free)	50pcs / tube

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