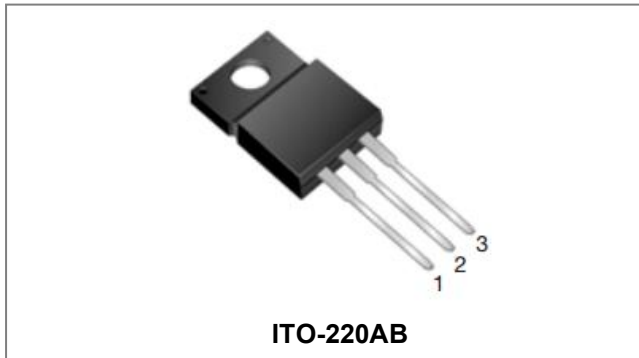


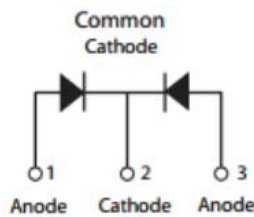
SDURF2060CT ULTRAFAST RECTIFIER



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 @ $T_c=100^\circ\text{C}$, rectangular wave form	10(Per Leg) 20(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	I_{FSM}	8.3ms, Half Sine pulse	100	A

Thermal-Mechanical Specifications:

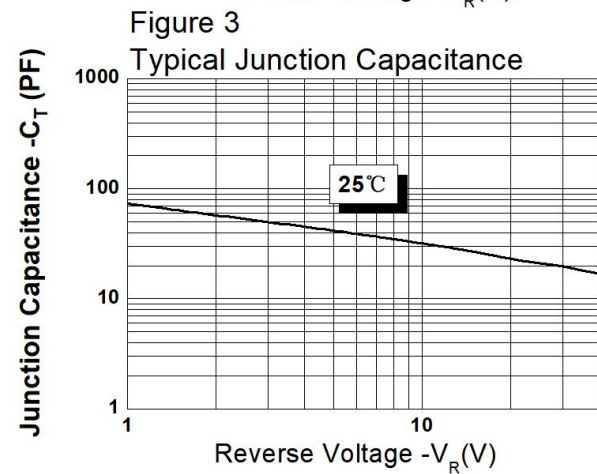
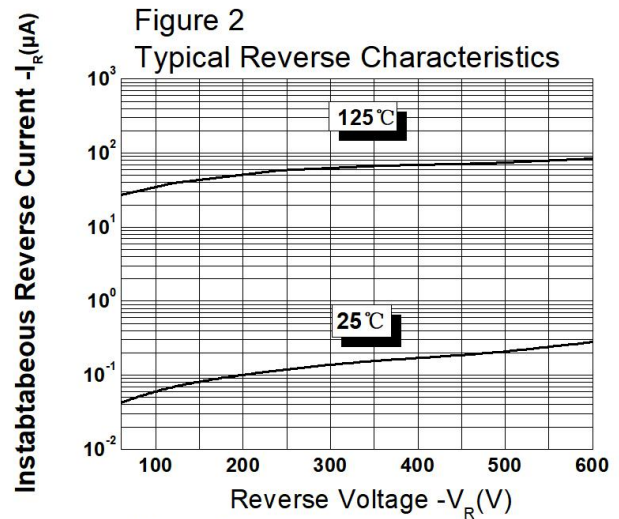
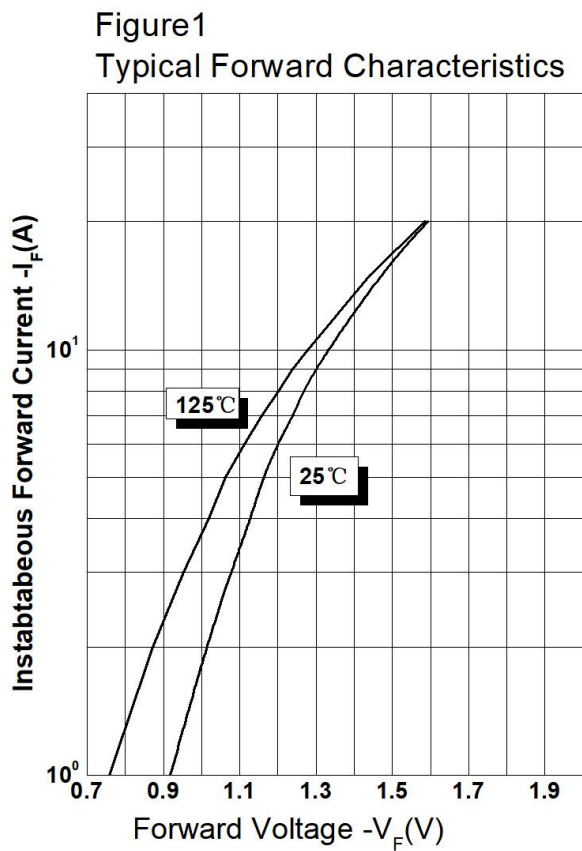
Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	T_J	-	-55 to +150	$^\circ\text{C}$
Storage Temperature	T_{stg}	-	-55 to +150	$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	DC operation	5	$^\circ\text{C/W}$
Approximate Weight	wt	-	2	g
Case Style	ITO-220AB			

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	V_{F1}	@10A, Pulse, $T_J = 25^\circ\text{C}$	1.33	2.2	V
	V_{F2}	@10A, Pulse, $T_J = 125^\circ\text{C}$	1.27	2.0	V
Reverse Current(Per Leg)*	I_{R1}	@ $V_R = \text{rated } V_R$, $T_J = 25^\circ\text{C}$	0.3	10	μA
	I_{R2}	@ $V_R = \text{rated } V_R$, $T_J = 125^\circ\text{C}$	84	500	μA
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F=500\text{mA}$, $I_R=1\text{A}$, and $I_{rm}=250\text{mA}$	42	50	ns
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 10\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}$, $T_J = 25^\circ\text{C}$	65	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		195	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		6	-	A
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 10\text{A}$, $di_F/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}$, $T_J = 125^\circ\text{C}$	87	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		313	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		7.2	-	A
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 1\text{A}$, $di_F/dt = -100\text{A}/\mu\text{s}$ $V_R = 30\text{V}$, $T_J = 25^\circ\text{C}$	37	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		39	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		2.1	-	A
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 1\text{A}$, $di_F/dt = -100\text{A}/\mu\text{s}$ $V_R = 30\text{V}$, $T_J = 125^\circ\text{C}$	55	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		77	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		2.8	-	A
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 10\text{A}$, $di_F/dt = -100\text{A}/\mu\text{s}$ $V_R = 30\text{V}$, $T_J = 25^\circ\text{C}$	66	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		109	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		3.3	-	A
Reverse Recovery Time(Per Leg)	t_{rr}	$I_F = 10\text{A}$, $di_F/dt = -100\text{A}/\mu\text{s}$ $V_R = 30\text{V}$, $T_J = 125^\circ\text{C}$	94	-	ns
Reverse Recovery Charge(Per Leg)	Q_{rr}		188	-	nC
Reverse Recovery Current(Per Leg)	I_{RRM}		4	-	A

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

Ratings and Characteristics Curves



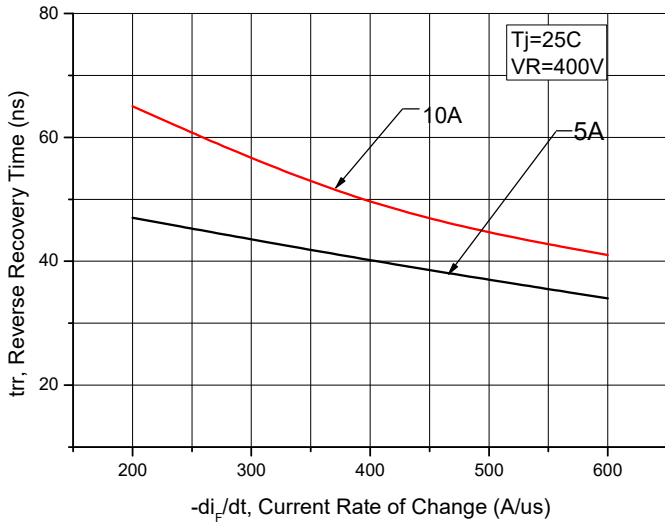


Figure 5. Reverse Recovery Time vs. Current Rate of Change

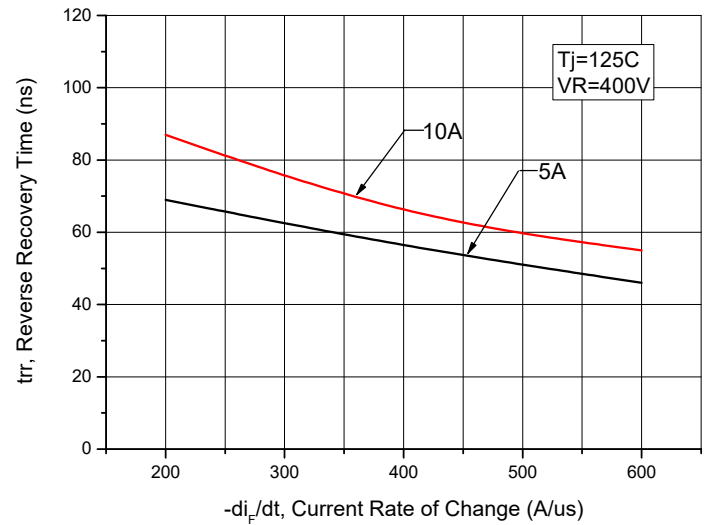


Figure 6. Reverse Recovery Time vs. Current Rate of Change

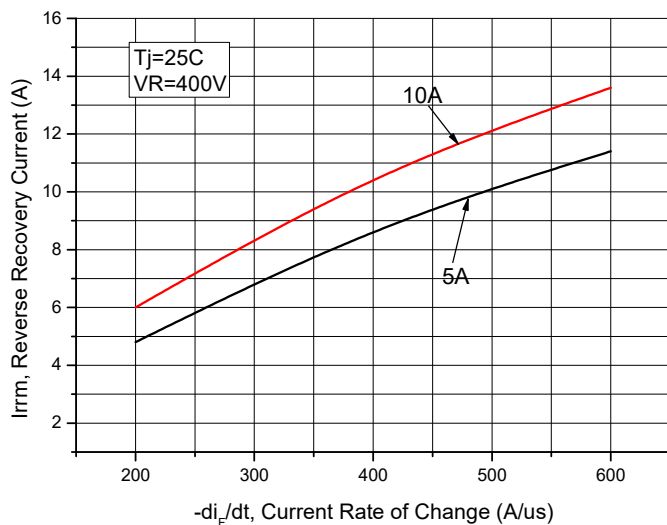


Figure 7. Reverse Recovery Current vs. Current Rate of Change

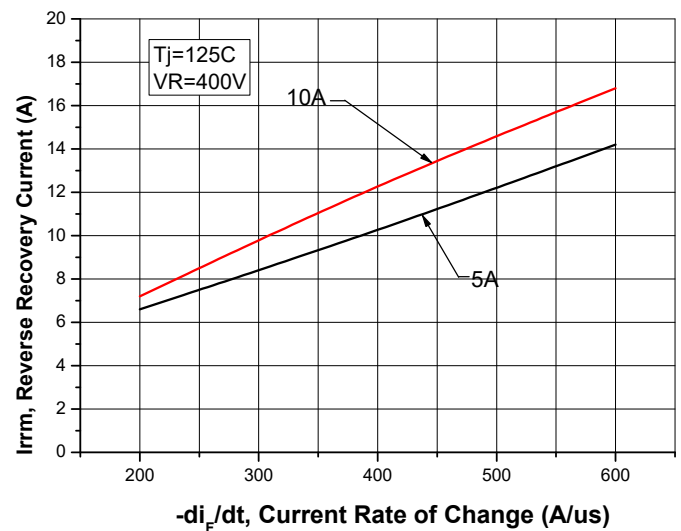


Figure 8. Reverse Recovery Current vs. Current Rate of Change

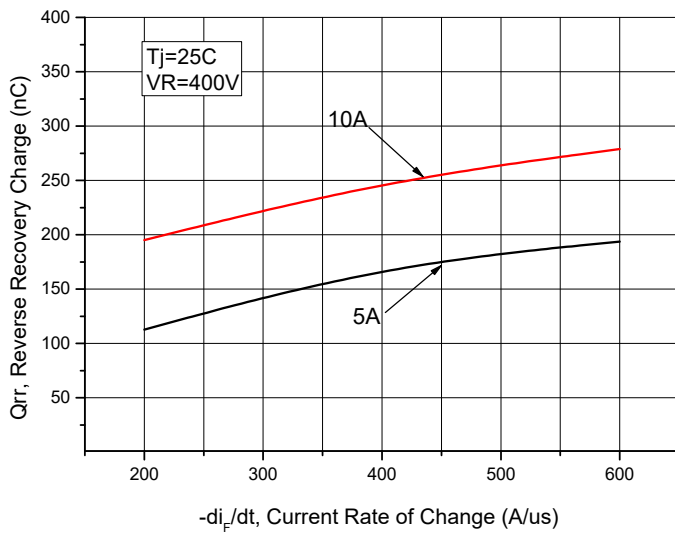


Figure 9. Reverse Recovery Charge vs. Current Rate of Change

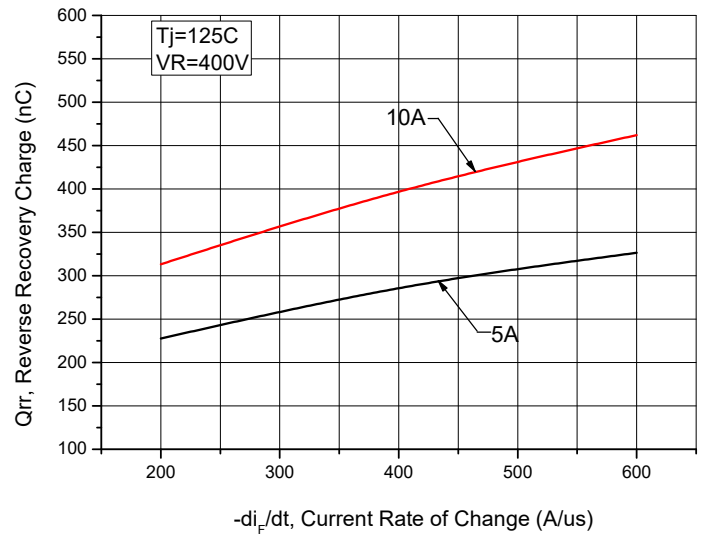


Figure 10. Reverse Recovery Charge vs. Current Rate of Change

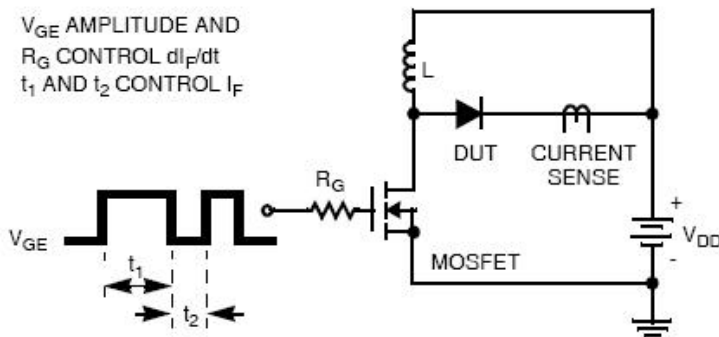


Figure 11. Diode Test Circuit

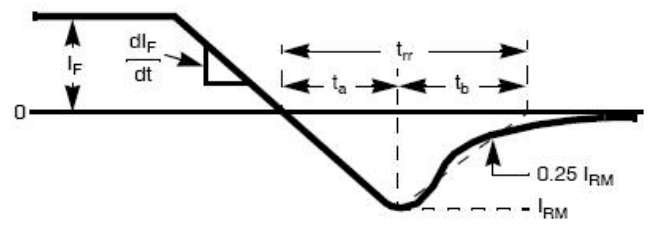
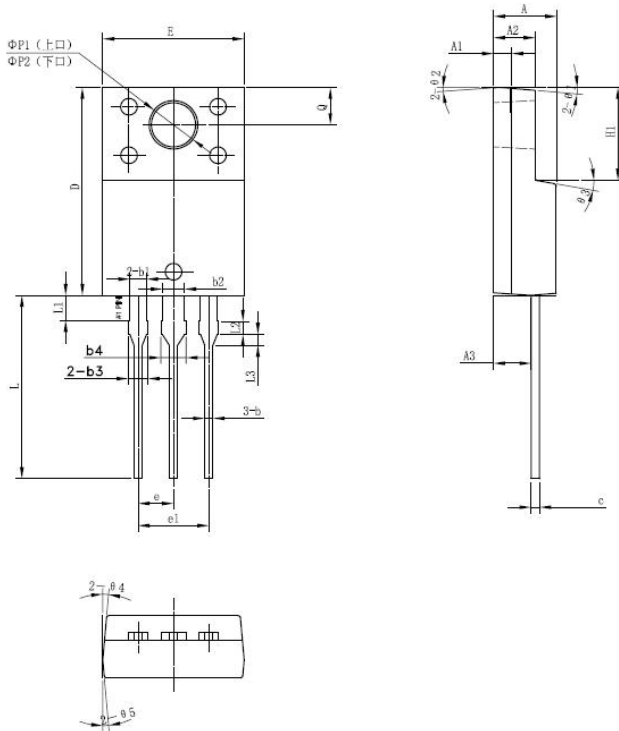
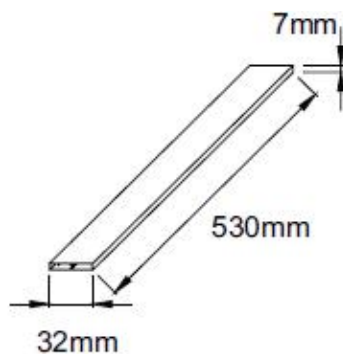
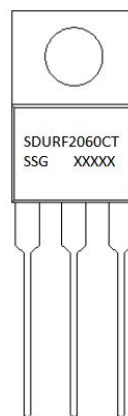


Figure 12. Diode Reverse Recovery Waveform

Mechanical Dimensions ITO-220AB


SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
b3	1.20	1.30	1.45
b4	1.60	1.70	1.85
c	0.50	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e		2.55	
e1		5.10	
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
ΦP1(上口)	3.30	3.50	3.70
ΦP2(下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
Θ1		5°	
Θ2		4°	
Θ3		10°	
Θ4		5°	
Θ5		5°	

Tube Specification

Marking Diagram


Where XXXXX is YYWWL

SDUR = Device Type
 F = Package type
 20 = Forward Current (20A)
 60 = Reverse Voltage (600V)
 CT = Configuration
 SSG = SSG
 YY = Year
 WW = Week
 L = Lot Number

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

Ordering Information

Device	Package	Shipping
SDURF2060CT	ITO-220AB(Pb-Free)	50 pcs/ tube

For information on tape and reel specifications, including part orientation and tape sizes, please refer to our tape and reel packaging specification.

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2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment, and safety equipment), safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement.

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