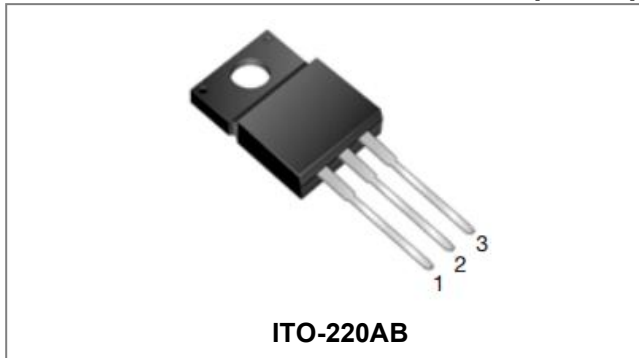


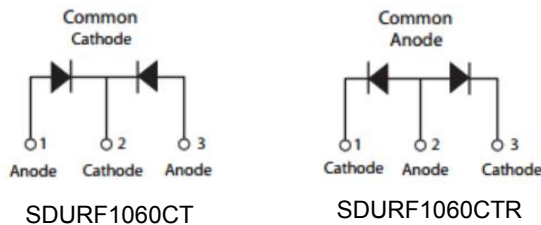
## SDURF1060CT(CTR) ULTRAFAST RECTIFIER



### 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
- 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	5(Per Leg) 10(Per Device)	A
Peak One Cycle Non-Repetitive Surge Current(Per Leg)	$I_{FSM}$	8.3ms, Half Sine pulse	60	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	$V_{F1}$	@5A, Pulse, $T_J = 25^\circ\text{C}$	1.14	1.55	V
	$V_{F2}$	@5A, Pulse, $T_J = 125^\circ\text{C}$	0.95	1.45	V
Reverse Current(Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.007	5	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	3	500	$\mu\text{A}$
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F=500\text{mA}, I_R=1\text{A}, \text{and } I_m=250\text{mA}$	42	50	ns
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F = 5\text{A}, diF/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}, T_J = 25^\circ\text{C}$	55	-	ns
Reverse Recovery Charge(Per Leg)	$Q_{rr}$		160	-	nC
Reverse Recovery Current(Per Leg)	$I_{RRM}$		5.8	-	A
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F = 5\text{A}, diF/dt = -200\text{A}/\mu\text{s}$ $V_R = 400\text{V}, T_J = 125^\circ\text{C}$	88	-	ns
Reverse Recovery Charge(Per Leg)	$Q_{rr}$		299	-	nC
Reverse Recovery Current(Per Leg)	$I_{RRM}$		6.8	-	A

**Technical Data**

**Data Sheet N0227, Rev. A**

\* Pulse width < 300  $\mu$ s, duty cycle < 2%



**Thermal-Mechanical Specifications:**

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

**Ratings and Characteristics Curves**

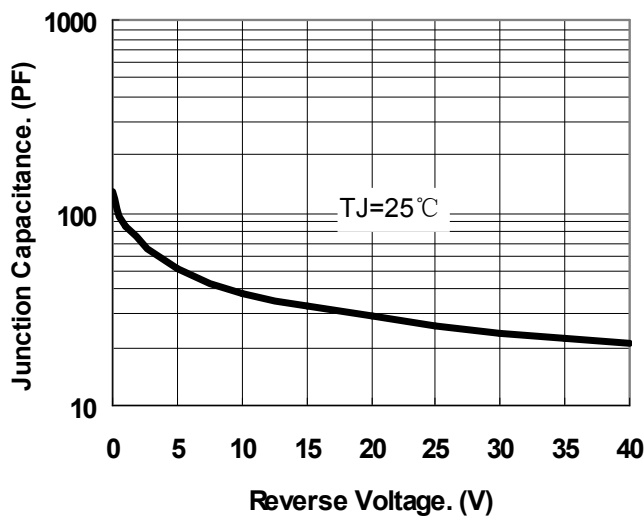


Fig.1-Typical Junction Capacitance

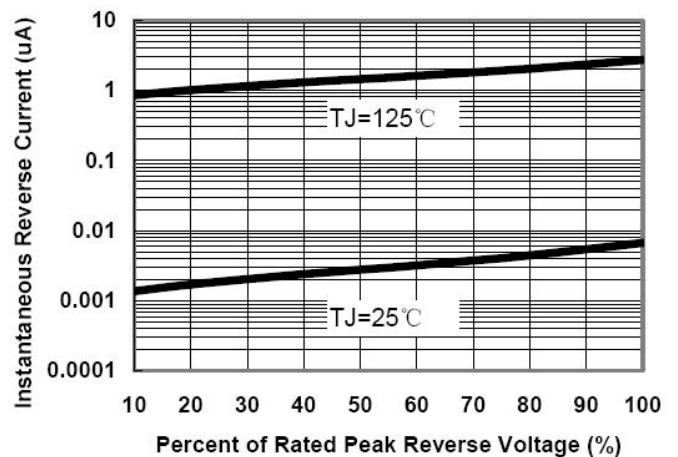


Fig.2-Typical Reverse Characteristics

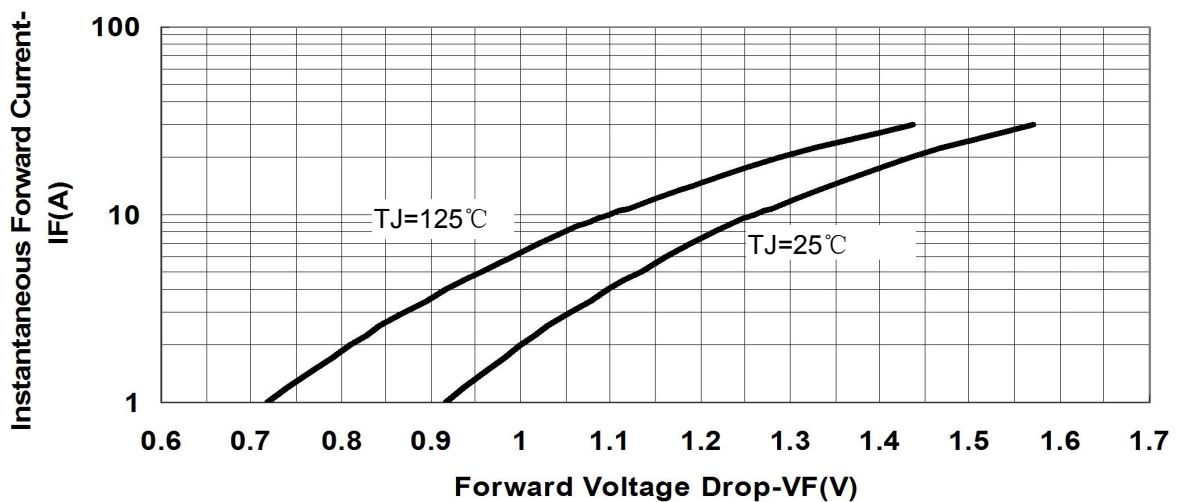
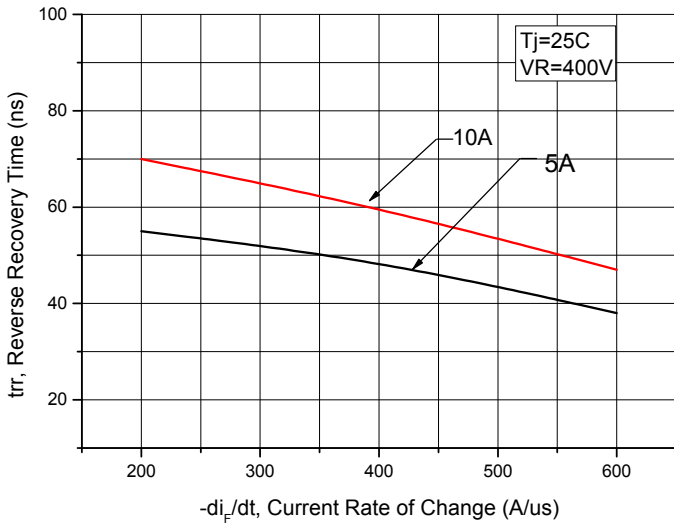
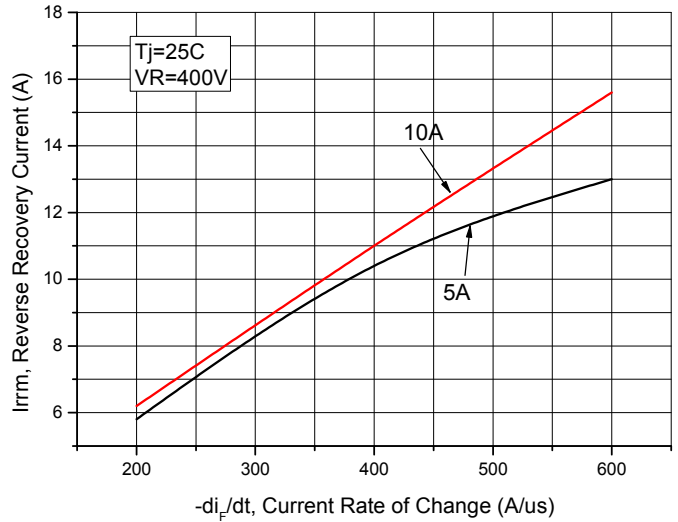


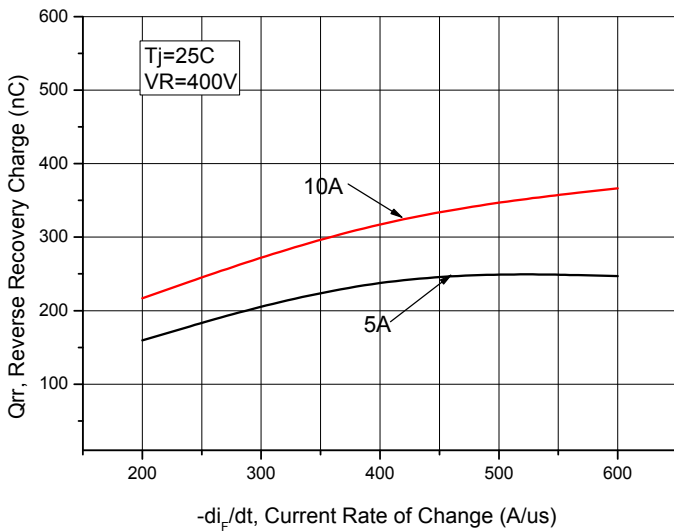
Fig.3-Typical Forward Voltage Drop Characteristics



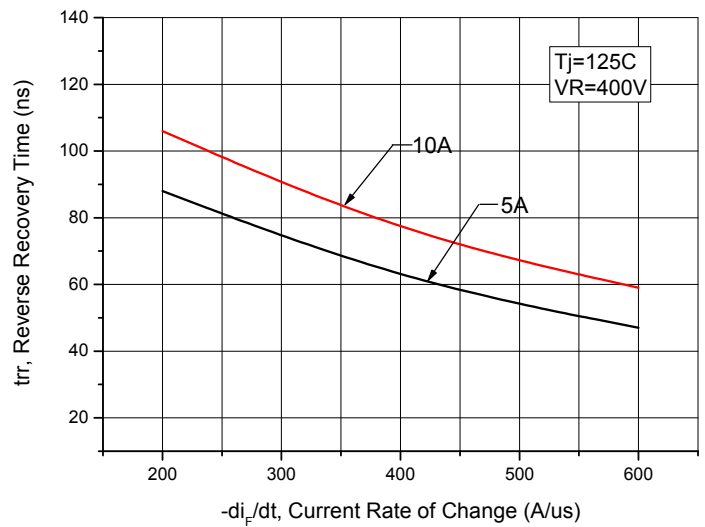
**Figure 4. Reverse Recovery Time vs. Current Rate of Change**



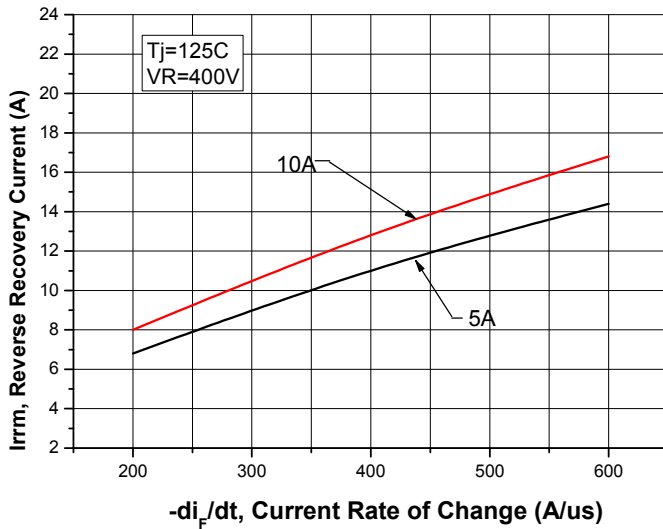
**Figure 5. Reverse Recovery Current vs. Current Rate of Change**



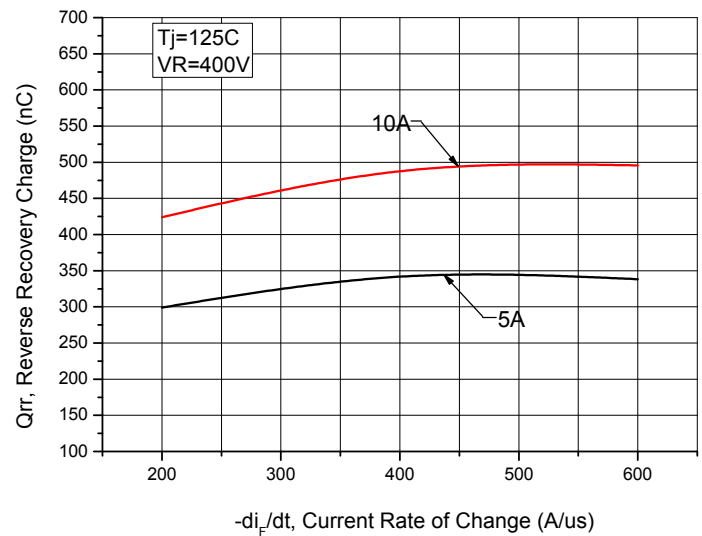
**Figure 6. Reverse Recovery Charge vs. Current Rate of Change**



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

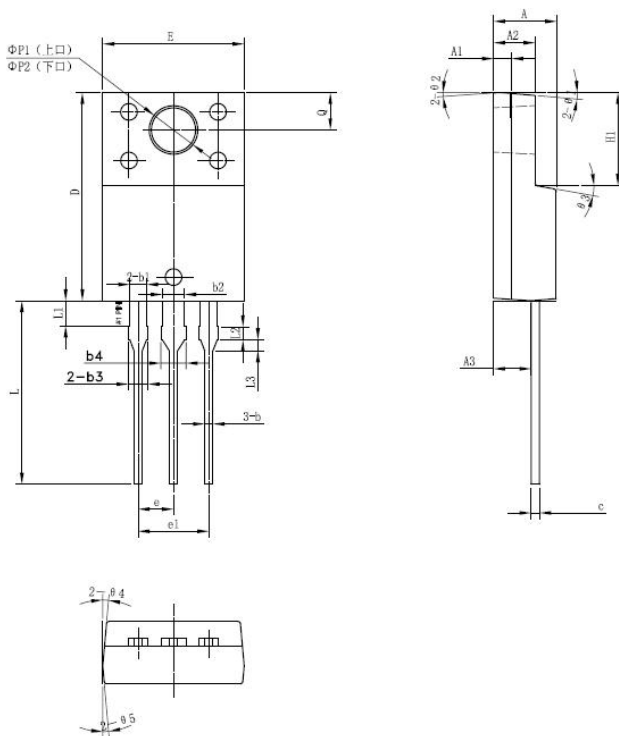


**Figure 8. Reverse Recovery Current vs. Current Rate of Change**



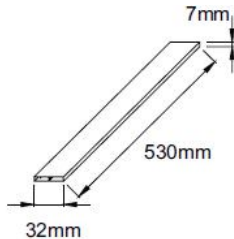
**Figure 9. Reverse Recovery Charge vs. Current Rate of Change**

**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
$\Phi P1$ (上 $\square$ )	3.30	3.50	3.70
$\Phi P2$ (下 $\square$ )	2.99	3.19	3.39
Q	2.50	2.70	2.90
$\Theta 1$		5°	
$\Theta 2$		4°	
$\Theta 3$		10°	
$\Theta 4$		5°	
$\Theta 5$		5°	

### Tube Specification

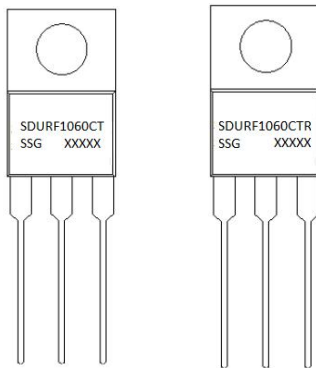


### Ordering Information

Device	Package	Shipping
SDURF1060CT(CTR)	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.

### Marking Diagram



Where XXXXX is YYWWL

SDUR = Device Type  
F = Package type  
10 = Forward Current (10A)  
60 = Reverse Voltage (600V)  
CT(CTR) = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

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