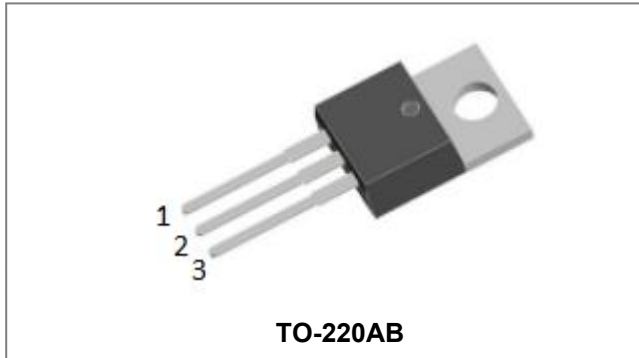


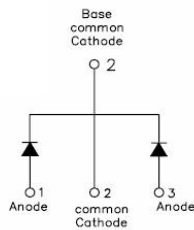
## SDUR2040CT ULTRAFAST RECTIFIER



### 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	$V_{RRM}$	-	400	V
Working Peak Reverse Voltage	$V_{RWM}$			
DC Blocking Voltage	$V_R$			
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	125	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop(Per Leg)*	$V_{F1}$	@10A, Pulse, $T_J = 25^\circ\text{C}$	1.07	1.3	V
	$V_{F2}$	@10A, Pulse, $T_J = 125^\circ\text{C}$	0.98	1.2	V
Reverse Current(Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ $T_J = 25^\circ\text{C}$	0.06	10	$\mu\text{A}$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ $T_J = 125^\circ\text{C}$	7	500	$\mu\text{A}$
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rm}=250\text{mA}$	30	45	ns

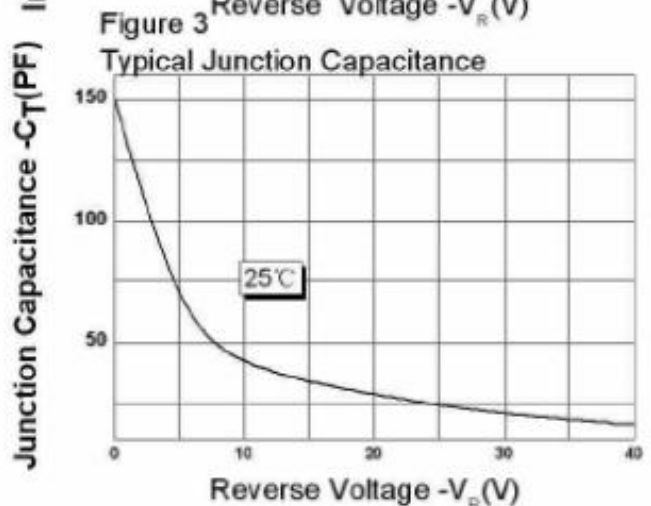
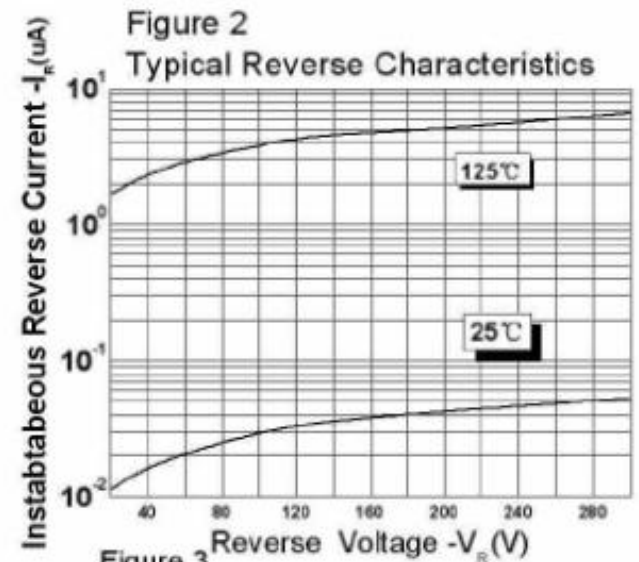
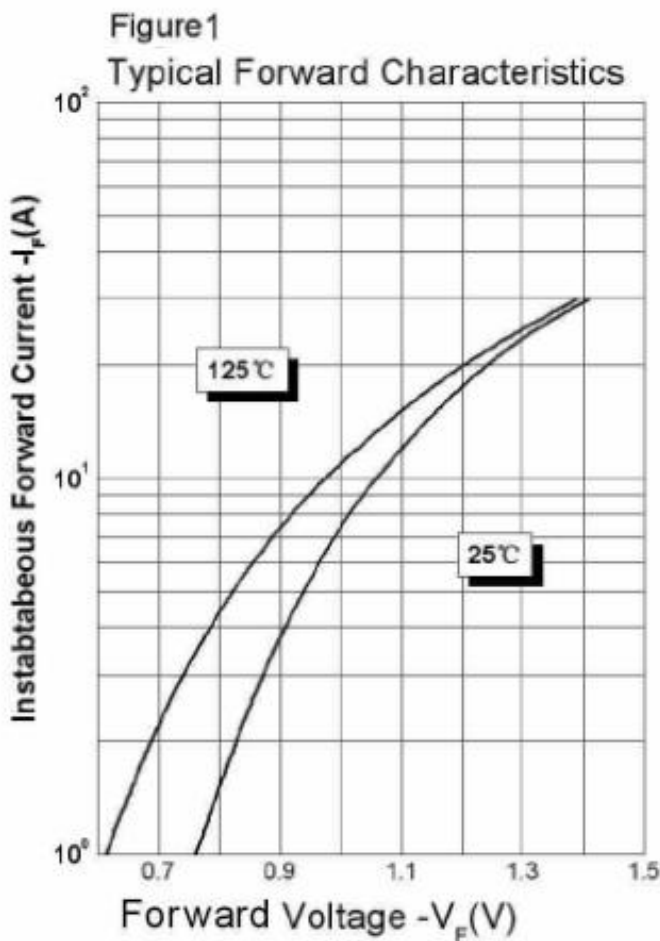
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

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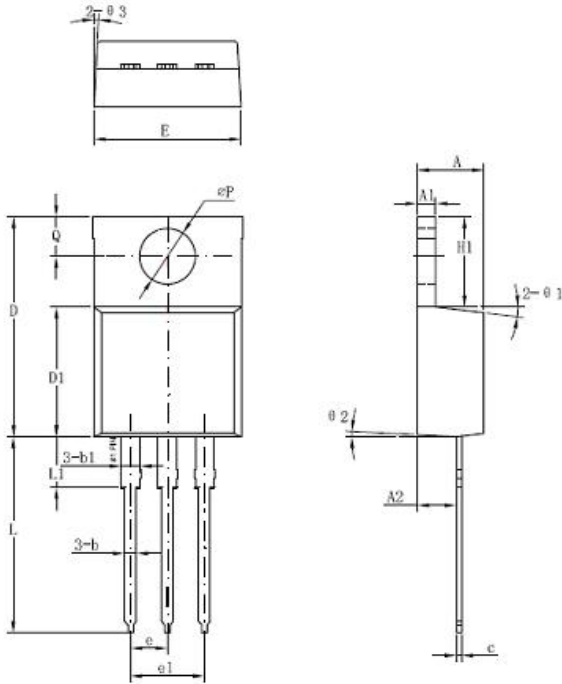
**Thermal-Mechanical Specifications:**

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

**Ratings and Characteristics Curves**

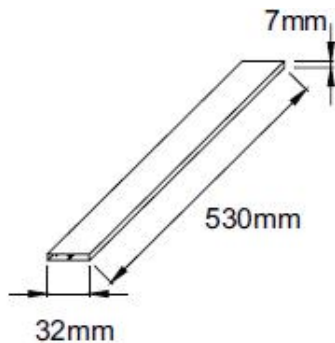


**Mechanical Dimensions TO-220AB**

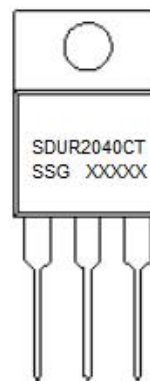


Symbol	Dimensions in millimeters		
	Min	Typical	Max
A	4.42	4.57	4.72
A1	1.17	1.27	1.37
A2	2.52	2.69	2.89
b	0.71	0.81	0.96
b1	1.17	1.27	1.37
c	0.31	0.38	0.61
D	14.94	15.24	15.54
D1	8.85	9.00	9.15
E	10.01	10.16	10.31
e		2.54	
e1	4.98	5.06	5.18
H1	6.04	6.24	6.44
L	12.7	13.56	13.80
L1	3.56	3.5	3.96
ΦP	3.74	3.84	4.04
Q	2.54	2.74	2.94
Ø1		7°	
Ø2		3°	
Ø3		4°	

**Tube Specification**



**Marking Diagram**



Where XXXXX is YYWWL

- SDUR = Device Type
- 20 = Forward Current (20A)
- 40 = Reverse Voltage(400V)
- CT = Configuration
- SSG = SSG
- YY = Year
- WW = Week
- L = Lot Number

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

**Ordering Information**

Device	Package	Shipping
SDUR2040CT	TO-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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