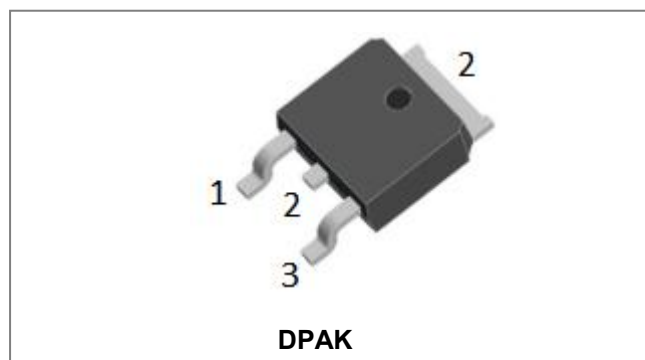


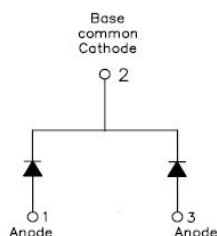
## SDURD1020CT ULTRAFAST RECTIFIER



### 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(limiting values, at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	200	V
Average Rectified Forward Current	$I_{F(AV)}$	$T_c=140^{\circ}\text{C}$ , In DC	5(Per Leg) 10(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)*	$V_{F1}$	@ 5A, Pulse, $T_J = 25^{\circ}\text{C}$	0.87	0.975	V
	$V_{F2}$	@ 5A, Pulse, $T_J = 125^{\circ}\text{C}$	0.75	0.92	V
Reverse Current (Per Leg)*	$I_{R1}$	@ $V_R$ = rated $V_R$ , $T_J = 25^{\circ}\text{C}$	0.05	10	$\mu\text{A}$
	$I_{R2}$	@ $V_R$ = rated $V_R$ , $T_J = 125^{\circ}\text{C}$	34	500	$\mu\text{A}$
Reverse Recovery Time (Per Leg)	$t_{rr}$	$I_F=500\text{mA}$ , $I_R=1\text{A}$ , and $I_{rr}=250\text{mA}$	30	35	ns

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

## Thermal-Mechanical Specifications:

Characteristics	Symbol	Condition	Specification	Units
Junction Temperature	$T_J$	-	-55 to +150	°C
Storage Temperature	$T_{stg}$	-	-55 to +150	°C
Typical Thermal Resistance Junction to Case(Per Leg)	$R_{\theta JC}$	DC operation	1.5	°C/W
Maximum Thermal Resistance Junction to Ambient(Per Leg)	$R_{\theta JA}$	DC operation	95	°C/W
Maximum Thermal Resistance Junction to Ambient(Per Device)	$R_{\theta JA}$	DC operation	50	°C/W
Approximate Weight	wt	-	0.39	g

## Ratings and Characteristics Curves

Figure1 Typical Forward Characteristics

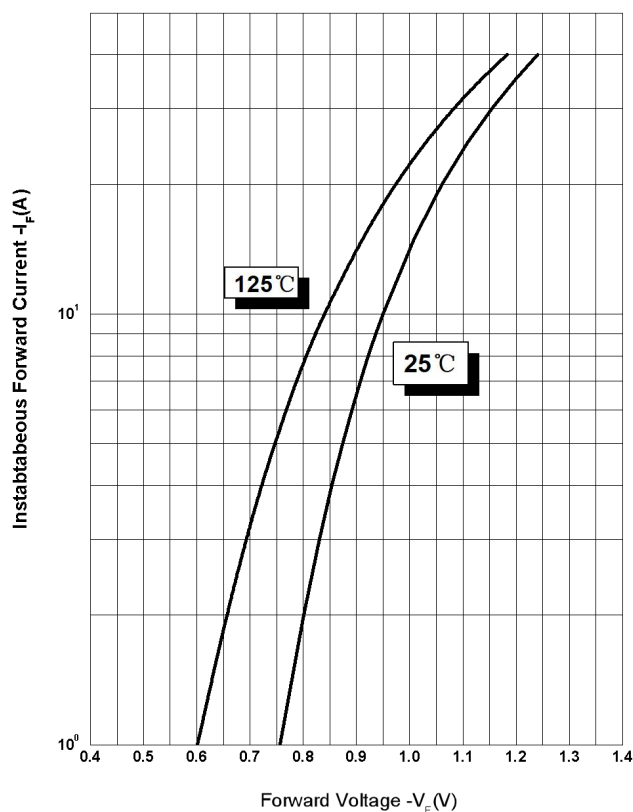


Figure 2 Typical Reverse Characteristics

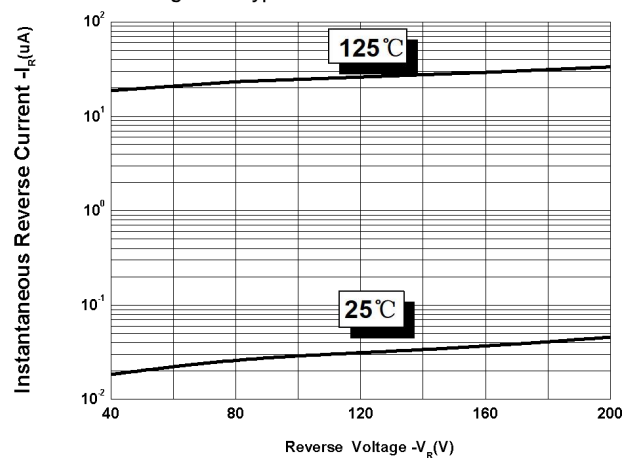
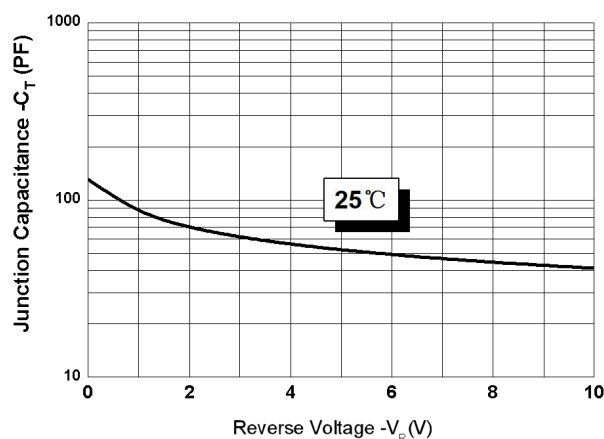
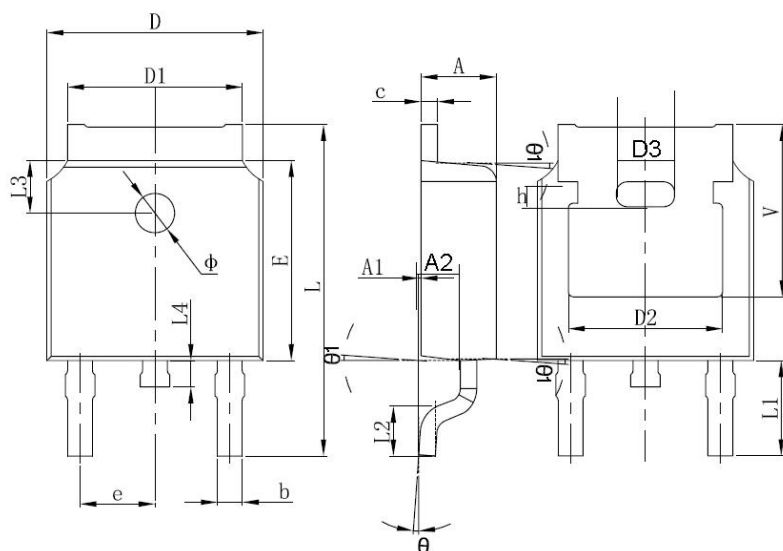


Figure 3 Typical Junction Capacitance



## Mechanical Dimensions DPAK



The outline from different package houses may have slight differences. So the outline above is just schematic. The dimensions are controlled per specifications.

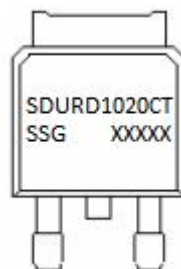
SYMBOL	Millimeters		
	MIN.	Typ	MAX.
A	2.18	-	2.39
A1	-	-	0.13
b	0.64	-	0.89
c	0.46	-	0.89
D	6.35	-	6.73
D1	4.95	-	5.46
D2	4.32	-	-
E	5.97	6.1	6.22
e	2.29BSC		
L	9.4	-	10.41
L1	2.90 REF.		
L2	1.4	1.52	1.78
L3	1.60 REF.		
L4	-	-	1.02
Φ	1.1	-	1.3
Θ	0°	-	10°
V	5.21	-	-

## Ordering Information

Device	Package	Shipping
SDURD1020CT	DPAK (Pb-Free)	2500pcs / reel
SDURD1020CTTR	DPAK (Pb-Free)	2500pcs / reel

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

## Marking Diagram

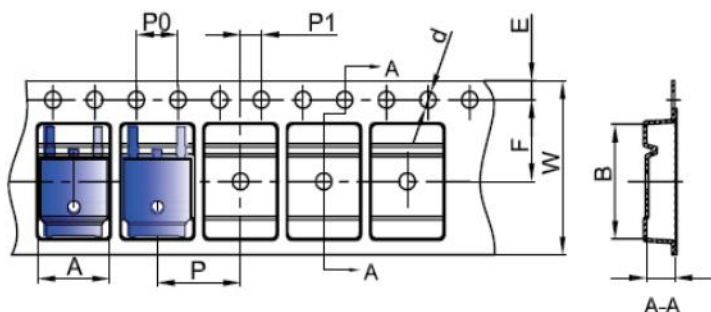


Where XXXXX is YYWWL

SDUR = Device Type  
D = Package type  
10 = Forward Current (10A)  
20 = Reverse Voltage (200V)  
CT = Configuration  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

## Carrier Tape Specification DPAK



SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

**Technical Data**  
**Data Sheet N1253, Rev. B**



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