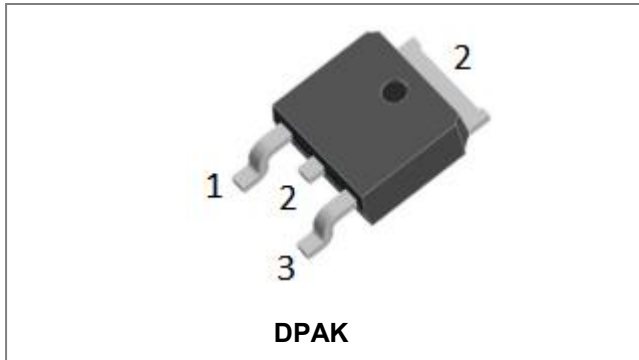


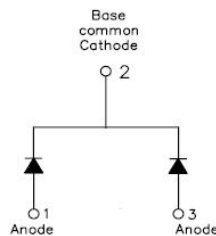
## SDURD1040CT ULTRAFAST RECTIFIER



### 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: Tin Lead-free plated
- This is a Pb – free device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

### Maximum Ratings(At 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	$V_{RRM}$ $V_{RWM}$ $V_R$	-	400	V
Average Rectified Forward Current	$I_{F(AV)}$	$T_c=140^{\circ}C$ , 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	70	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop (Per Leg)*	$V_{F1}$	@ 5A, Pulse, $T_J = 25^{\circ}C$	0.95	1.3	V
	$V_{F2}$	@ 5A, Pulse, $T_J = 125^{\circ}C$	0.88	1.2	V
Reverse Current (Per Leg)*	$I_{R1}$	@ $V_R = \text{rated } V_R$ , $T_J = 25^{\circ}C$	0.4	30	$\mu A$
	$I_{R2}$	@ $V_R = \text{rated } V_R$ , $T_J = 125^{\circ}C$	15	500	$\mu A$
Reverse Recovery Time(Per Leg)	$t_{rr}$	$I_F=500mA$ , $I_R=1A$ , and $I_{tm}=250mA$	38	45	ns

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

- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**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	1.5	$^{\circ}\text{C}/\text{W}$
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

**Ratings and Characteristics Curves**

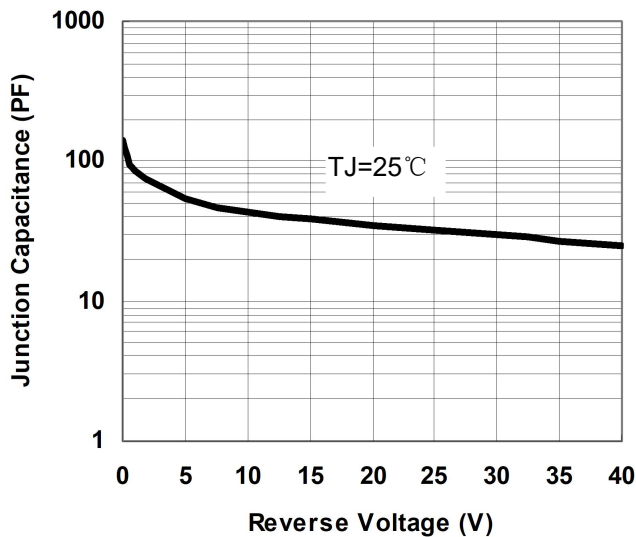


Fig.1-Typical Junction Capacitance

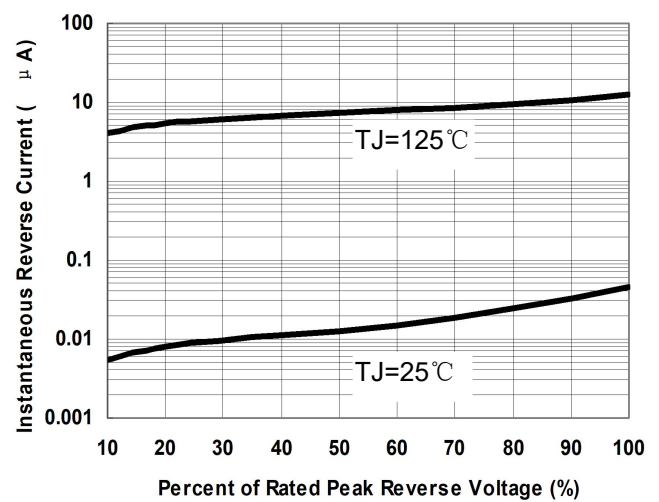


Fig.2-Typical Reverse Characteristics

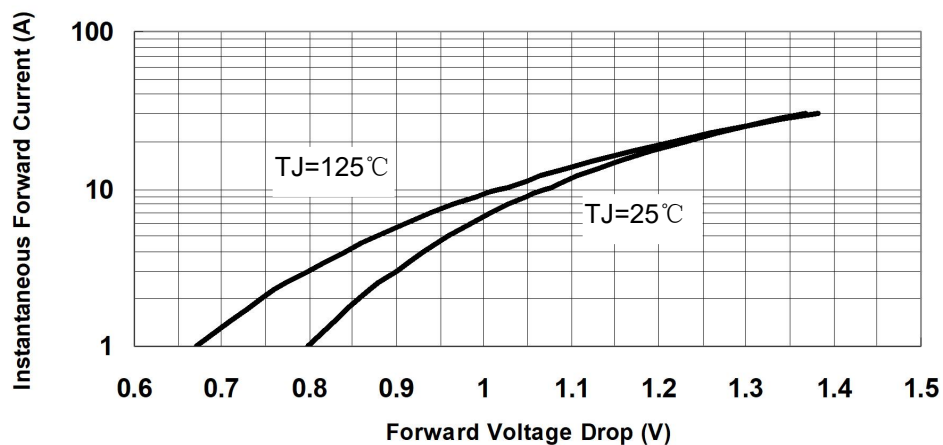
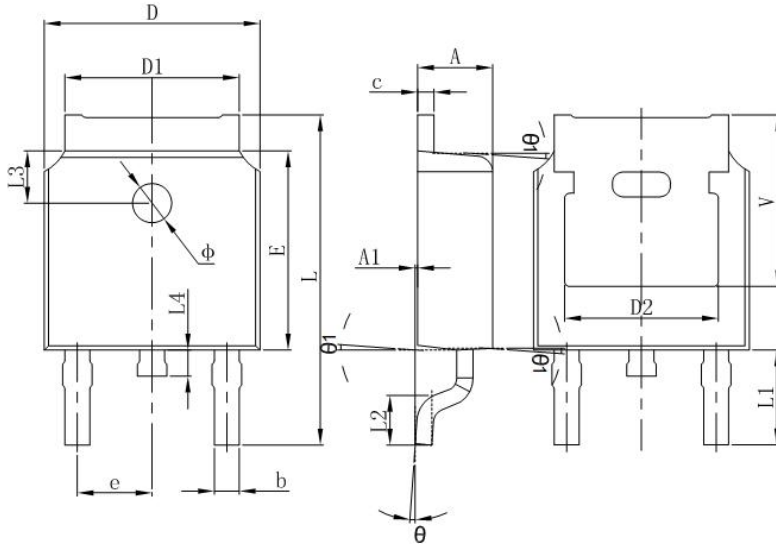


Fig.3-Typical Instantaneous Forward Voltage Characteristics

**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.

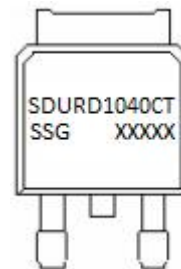
Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	2.18	-	2.39
A1	-	-	0.13
b	0.64	-	0.89
c	0.46	-	0.89
D	6.35	-	6.73
D1	4.95	-	5.46
D2	4.32	-	-
E	5.97	6.1	6.22
e	2.29BSC		
L	9.4	-	10.41
L1	2.90 REF.		
L2	1.4	1.52	1.78
L3	1.60 REF.		
L4	-	-	1.02
Φ	1.1	-	1.3
Θ	0°	-	10°
V	5.21	-	-

**Ordering Information**

Device	Package	Shipping
SDURD1040CT	DPAK (Pb-Free)	2500pcs / reel
SDURD1040CTTR	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**

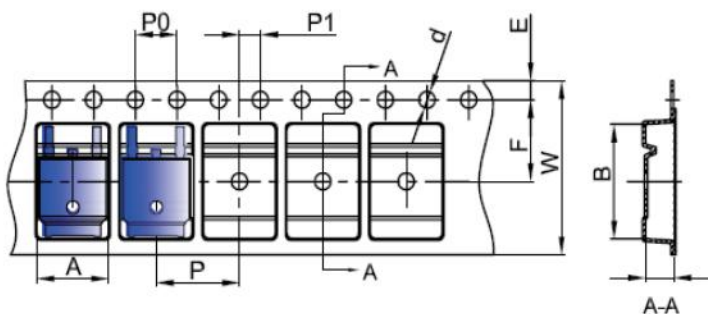


Where XXXXX is YYWWL

SDUR = Device Type  
D = Package type  
10 = Forward Current (10A)  
40 = Reverse Voltage (400V)  
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

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