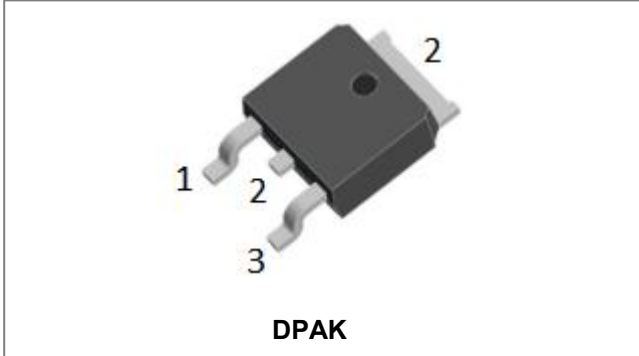


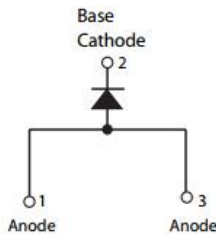
## SDURD1040 ULTRAFAST RECTIFIER



### 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	$V_{RWM}$		400	V
DC Blocking Voltage	$V_R$		400	V
Average Rectified Forward Current	$I_{F(AV)}$	50% duty cycle @ $T_c=100^\circ\text{C}$ , rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	8.3ms, Half Sine pulse, $T_J = 25^\circ\text{C}$	60	A
Peak One Cycle Non-Repetitive Surge Current	$I_{FSM}$	10ms, Half Sine pulse, $T_J = 45^\circ\text{C}$	140	A

### Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	$V_{F1}$	@ 10A, Pulse, $T_J = 25^\circ\text{C}$	1.17	1.50	V
	$V_{F2}$	@ 10A, Pulse, $T_J = 100^\circ\text{C}$	-	1.40	V
Reverse Current*	$I_{R1}$	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	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	$t_{rr}$	$I_F=500\text{mA}, I_R=1\text{A}, \text{and } I_m=250\text{mA}$	41	45	ns

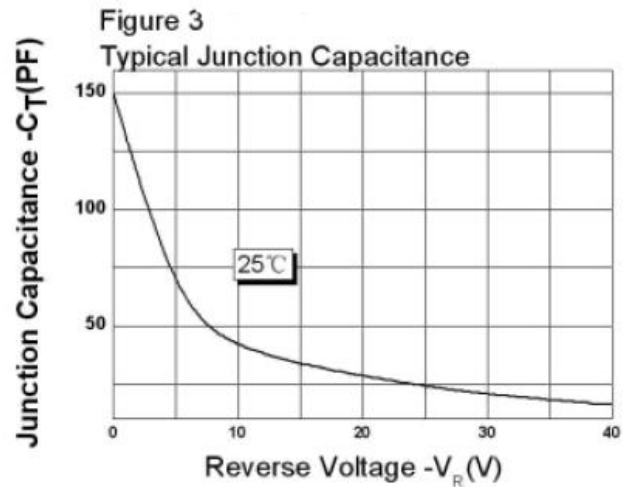
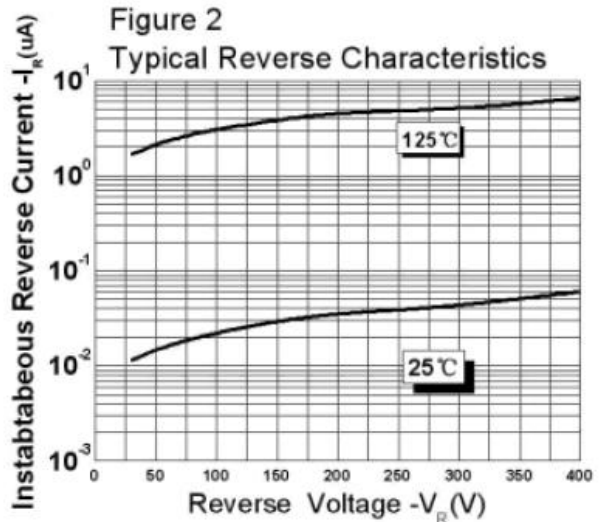
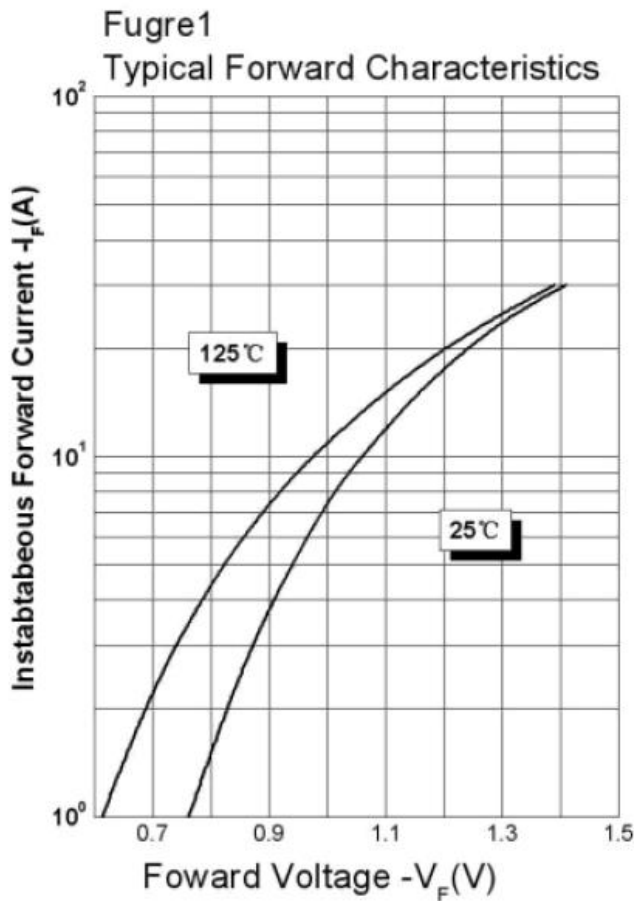
\* Pulse width < 300  $\mu\text{s}$ , duty cycle < 2%

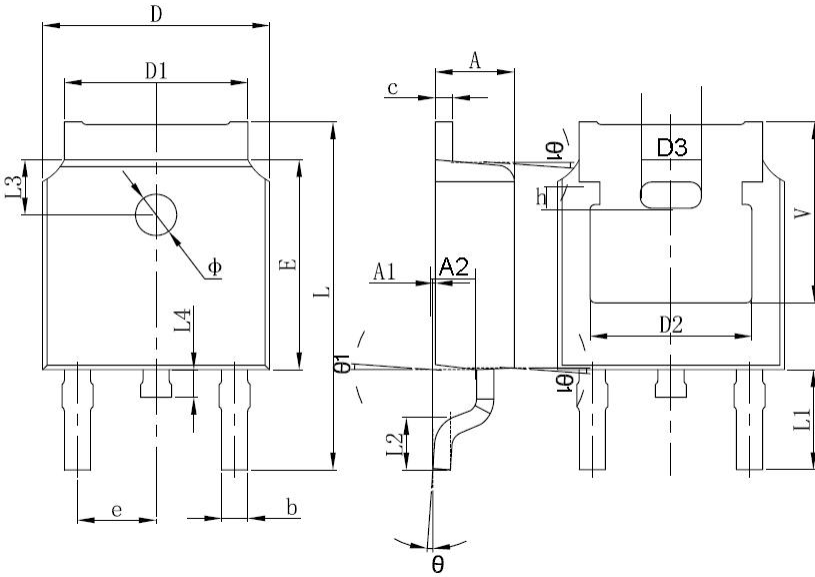
- China - Germany - Korea - Singapore - United States •
- <http://www.smc-diodes.com> - [sales@smc-diodes.com](mailto:sales@smc-diodes.com) •

**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	$R_{\theta\text{JC}}$	-	5.0	$^{\circ}\text{C/W}$
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

**Ratings and Characteristics Curves**



**Mechanical Dimensions DPAK**


SYMBOL	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	2.20	2.40	0.087	0.094
A1	0.00	0.127	0.000	0.005
b	0.66	0.86	0.026	0.034
c	0.46	0.60	0.018	0.024
D	6.50	6.70	0.256	0.264
D1	5.13	5.46	0.202	0.215
D2	4.83 REF.		0.190 REF.	
E	6.00	6.20	0.236	0.244
e	2.186	2.386	0.086	0.094
L	9.70	10.40	0.381	0.409
L1	2.90 REF.		0.144 REF.	
L2	1.40	1.70	0.055	0.067
L3	1.60 REF.		0.063 REF.	
L4	0.60	1.00	0.024	0.039
Φ	1.10	1.30	0.043	0.051
θ	0°	8°	0°	8°
h	0.00	0.30	0.000	0.012
V	5.35 REF.		0.211 REF.	

**Ordering Information**

Device	Package	Shipping
SDURD1040	DPAK (Pb-Free)	2500pcs / reel

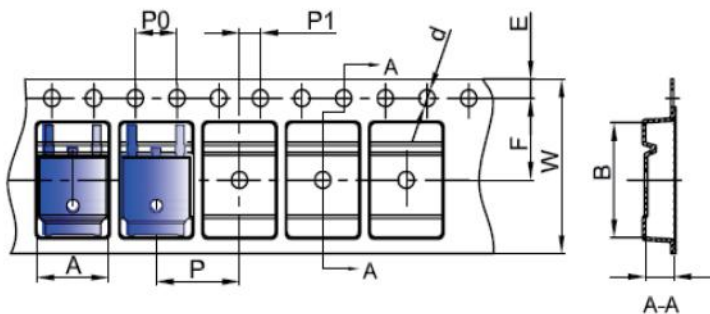
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

**Marking Diagram**


Where XXXXX is YYWWL

SDUR = Device Type  
D = Package type  
10 = Forward Current (10A)  
40 = Reverse Voltage (400V)  
SSG = SSG  
YY = Year  
WW = Week  
L = Lot Number

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

**Carrier Tape & Reel 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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