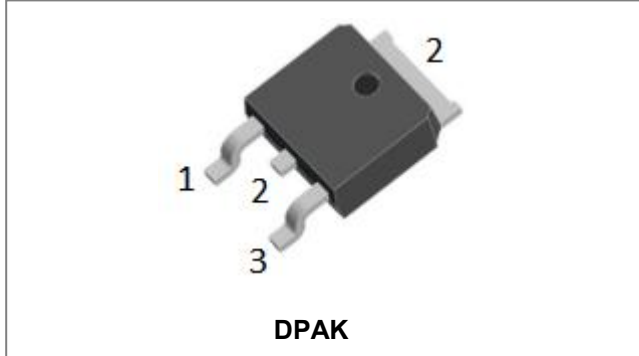


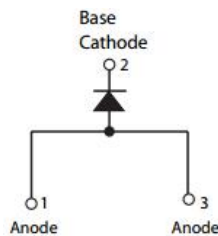
SDURD1040 ULTRAFAST RECTIFIER



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
- 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	V_{RRM}	-	400	V
Working Peak Reverse Voltage	V_{RWM}		400	V
DC Blocking Voltage	V_R		400	V
Average Rectified Forward Current	$I_{F(AV)}$	$T_c=128^{\circ}C, I_n DC$	10	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	60	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	10ms, Half Sine pulse, $T_J = 45^{\circ}C$	140	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 10A, Pulse, $T_J = 25^{\circ}C$	1.04	1.50	V
	V_{F2}	@ 10A, Pulse, $T_J = 100^{\circ}C$	-	1.40	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^{\circ}C$	0.07	10	μA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^{\circ}C$	62	500	μA
Reverse Recovery Time	t_{rr}	$I_F=500mA, I_R=1A, \text{ and } I_m=250mA$	41	45	ns

* Pulse width < 300 μs , duty cycle < 2%

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

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	$R_{\theta JC}$	-	1.5	°C/W
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

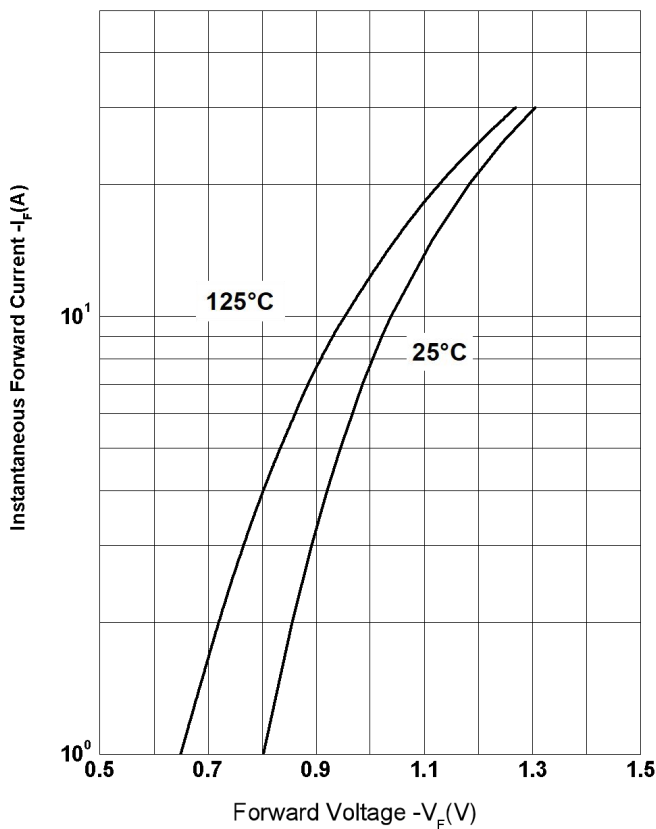


Figure 2 Typical Reverse Characteristics

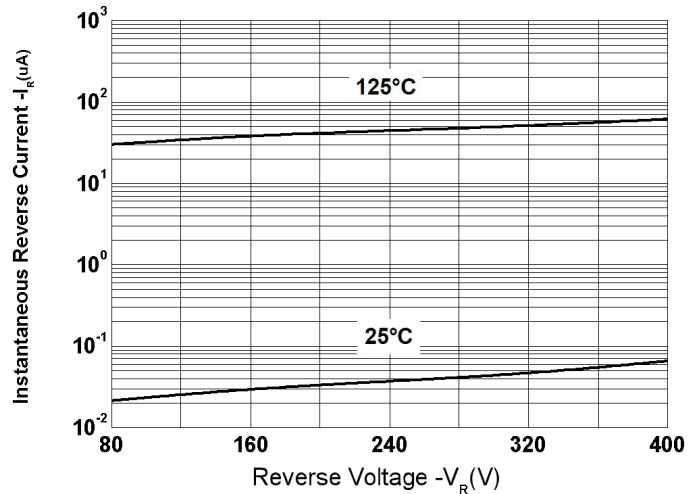
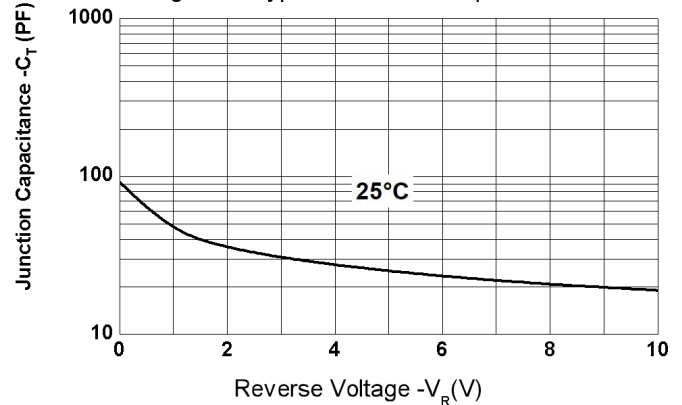
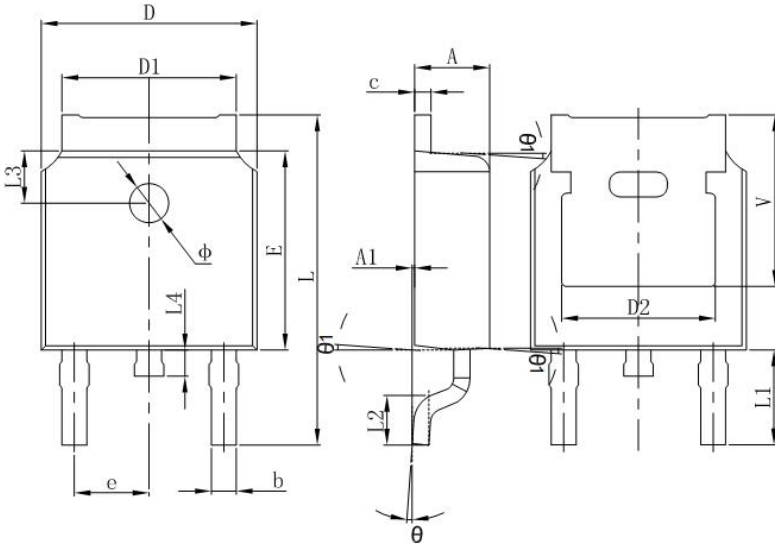


Figure 3 Typical Junction Capacitance



Mechanical Dimensions DPAK


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	-	-

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

Ordering Information

Device	Package	Shipping
SDURD1040	DPAK (Pb-Free)	2500pcs / reel
SDURD1040TR	DPAK (Pb-Free)	2500pcs / reel

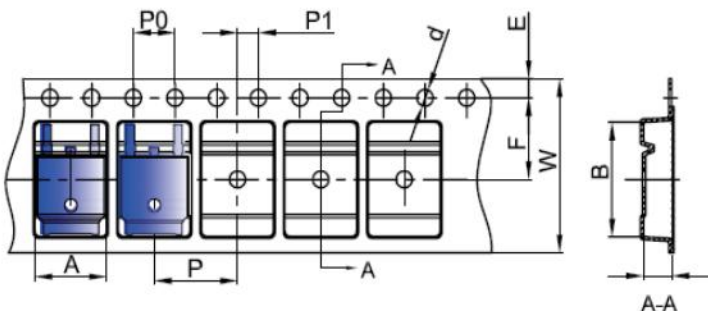
For information on tape and reel specifications, including part orientation and tape sizes, please refer to our Tape and Reel Packaging Specification.

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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