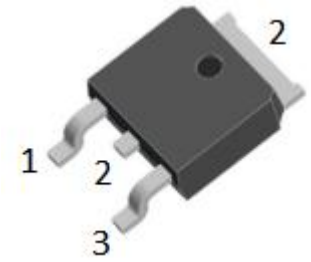
Technical Data
Data Sheet N0400, Rev. B

RoHS

SDURD1030 ULTRAFAST RECTIFIER

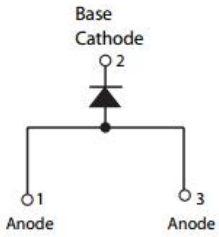


DPAK

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 Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	-	300	V
Average Rectified Forward Current	$I_{F\ (AV)}$	50% duty cycle @Tc=100°C, rectangular wave form	10	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse, T_J = 25℃	60	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	10ms, Half Sine pulse, T_J = 45℃	140	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@10A, Pulse, T_J = 25℃	1.06	1.3	V
Reverse Current*	I_{R1}	@V_R = rated V_R, T_J = 25℃	0.05	30	μA
	I_{R2}	@V_R = rated V_R, T_J = 125℃	0.007	1	mA
Reverse Recovery Time	t_{rr}	I_F=500mA, I_R=1A,and I_{rm}=250mA	27	35	ns

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

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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	$R_{\theta JC}$	DC operation	5.0	℃/W
Approximate Weight	wt	-	0.39	g
Case Style	DPAK			

Ratings and Characteristics Curves

Figure1
Typical Forward Characteristics

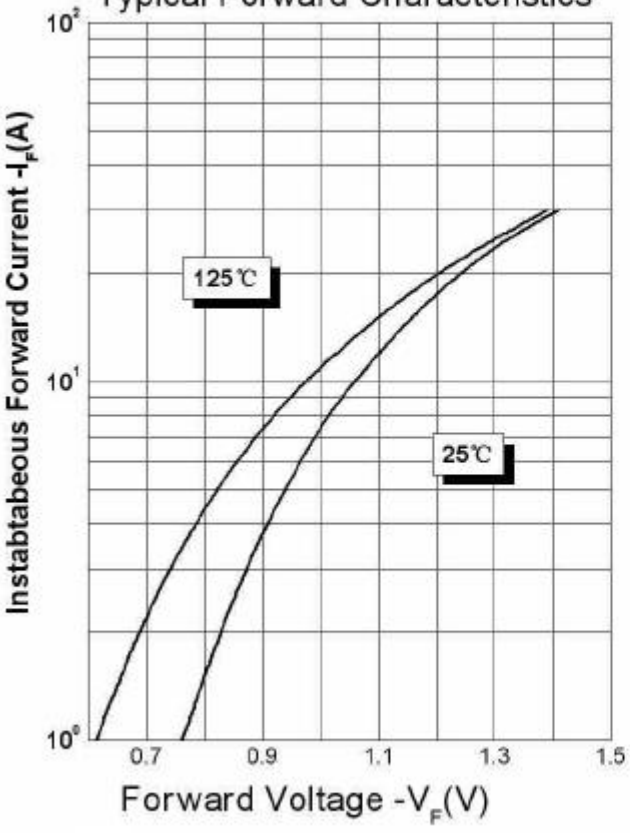


Figure 2
Typical Reverse Characteristics

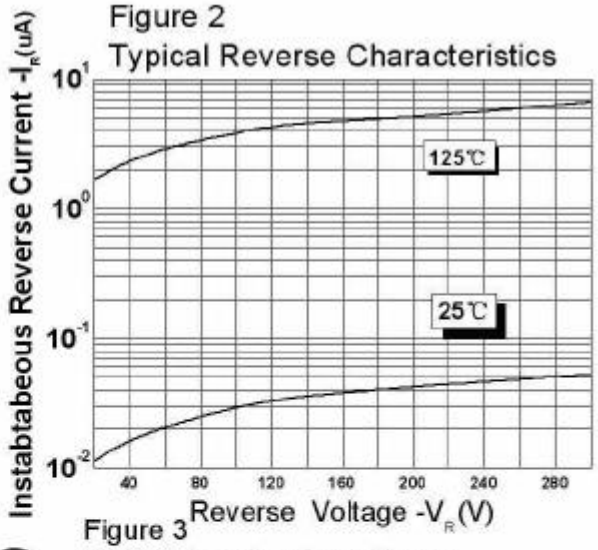
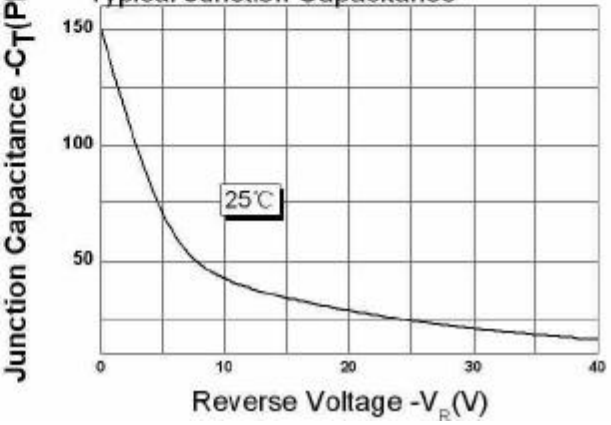


Figure 3
Typical Junction Capacitance



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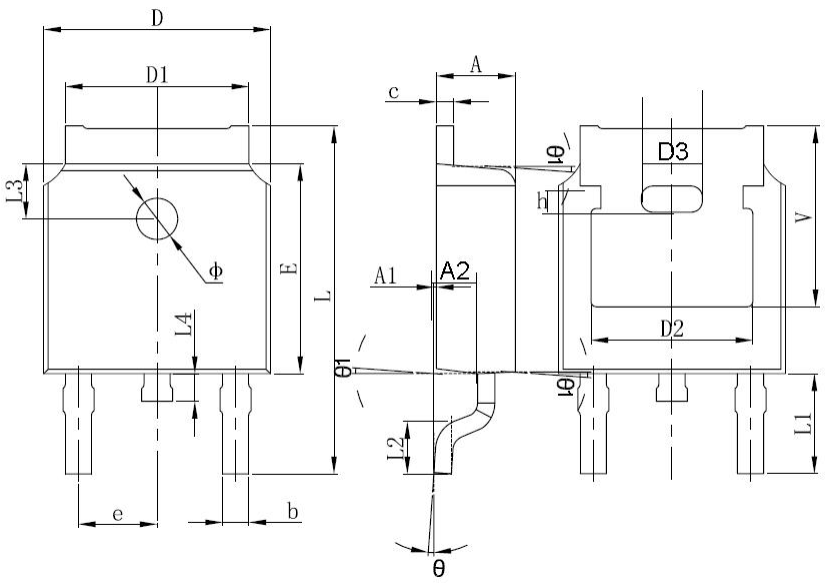
Mechanical Dimensions DPAK



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
SDURD1030	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.

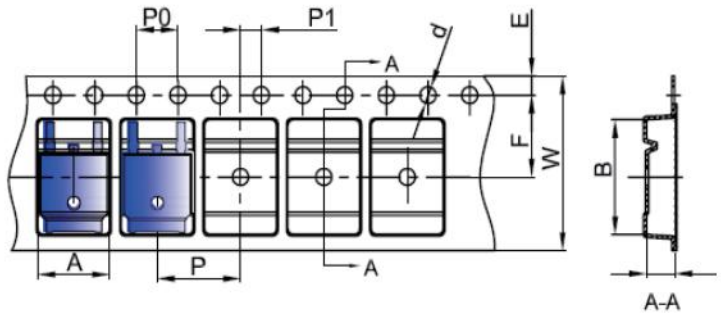
Marking Diagram

Where XXXXX is YYWWL

SDUR = Device Type
D = Package type
10 = Forward Current (10A)
30 = Reverse Voltage (300V)
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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