Technical Data
Data Sheet N1263, Rev. A

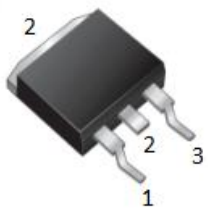
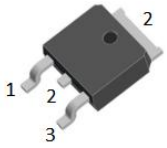
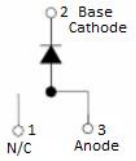
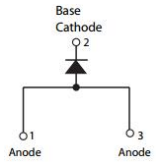
SDURB830/SDURD830
ULTRAFAST RECTIFIER

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

Features

- Ultra-Fast Switching
- High Current Capability
- Low Reverse Leakage Current
- High Surge Current Capability
- Plastic Material has UL Flammability Classification 94V-O
- "-A" is an AEC-Q101 qualified device
- 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

SDURB830	SDURD830
	
	
D^2PAK	DPAK

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	-	300	V
Average Rectified Forward Current	$I_{F\ (AV)}$	Tc=126°C(D2PAK) Tc=132°C(DPAK), In DC	8	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	80	A

Technical Data
Data Sheet N1263, Rev. A

RoHS

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 8A, Pulse, T_J = 25 °C	1.01	1.3	V
	V_{F2}	@ 8A, Pulse, T_J = 125 °C	0.91	1.2	V
Reverse Current*	I_{R1}	@V_R = rated V_R T_J = 25 °C	0.07	10	μA
	I_{R2}	@V_R = rated V_R T_J = 125 °C	91	500	μA
Reverse Recovery Time	t_{rr}	I_F=500mA, I_R=1A,and I_{rm}=250mA, T_J = 25 °C	29	45	ns

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

Thermal-Mechanical Specifications:

Characteristics	Symbol	SDURB830	SDURD830	Units
Junction Temperature	T_J	-55 to +150		°C
Storage Temperature	T_{stg}	-55 to +150		°C
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	2.3	1.7	°C/W
Case Style	D²PAK/ DPAK			

Tube Specification

Device	Package	Weight	Shipping
SDURB830	D² PAK	1.85g	800pcs / reel
SDURB830TR	D² PAK	1.85g	800pcs / reel
SDURD830	DPAK	0.39g	2500pcs / reel
SDURD830TR	DPAK	0.39g	2500pcs / reel

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

Ratings and Characteristics Curves

Figure1 Typical Forward Characteristics

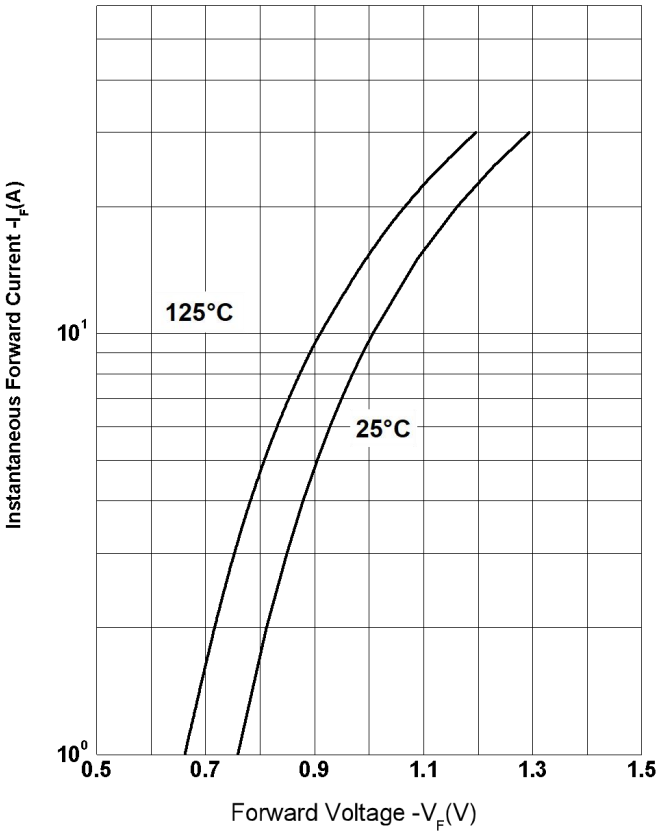


Figure 2 Typical Reverse Characteristics

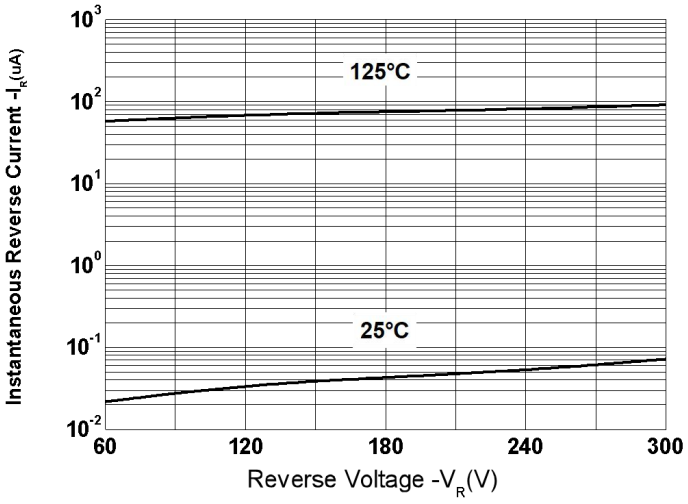
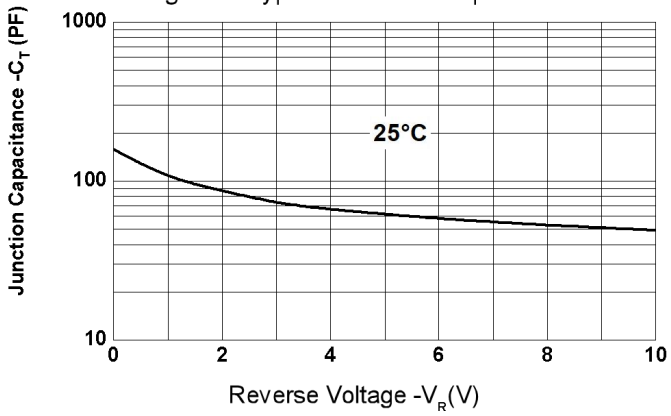


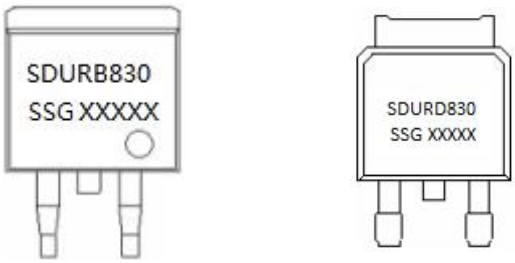
Figure 3 Typical Junction Capacitance



SDURB830
SDURD830

Technical Data
Data Sheet N1263, Rev. A

Marking Diagram

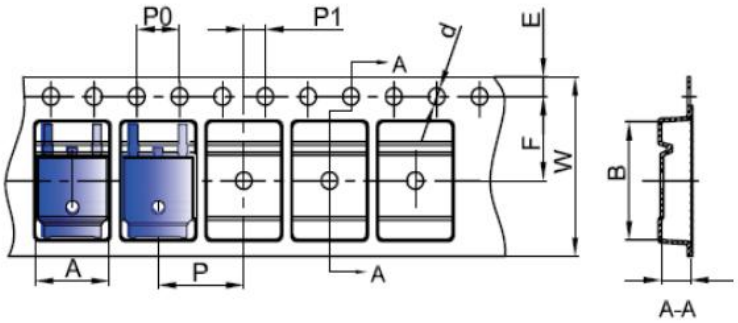


Where XXXXX is YYWWL

SDUR	= Device Type
B/D	= Package type
8	= Forward Current (8A)
30	= Reverse Voltage (300V)
SSG	= SSG
YY	= Year
WW	= Week
L	= Lot Number

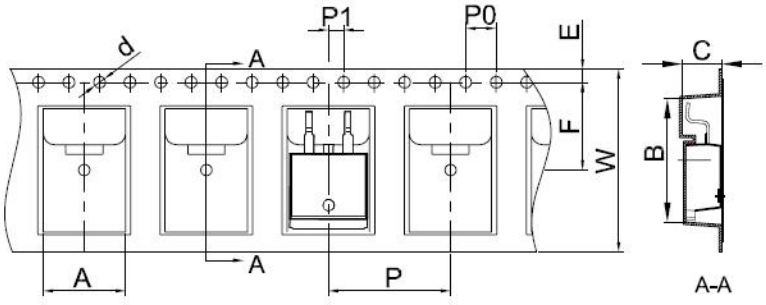
Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape & Reel Specification DPAK



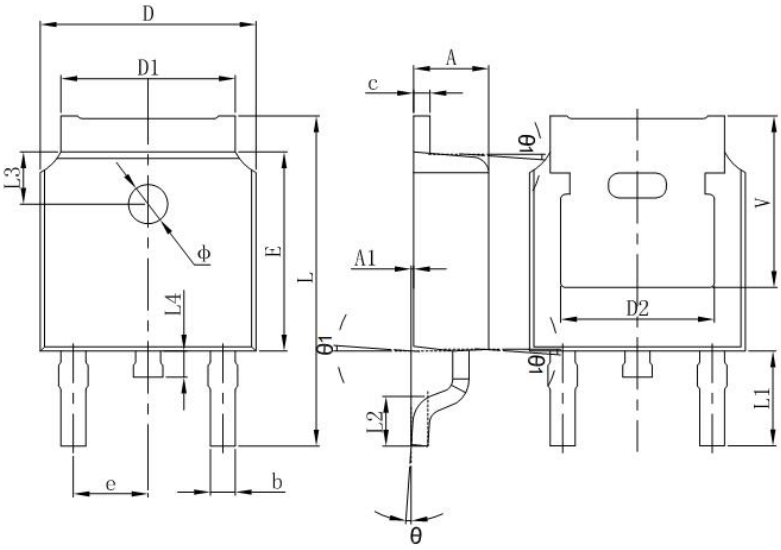
SYMBOL	Millimeters	
	Min.	Max.
A	6.80	7.00
B	10.40	10.60
C	2.60	2.80
d	Φ1.45	Φ1.65
E	1.65	1.85
F	7.40	7.60
P0	3.90	4.10
P	7.90	8.10
P1	1.90	2.10
W	15.90	16.30

Carrier Tape & Reel Specification D²PAK



SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

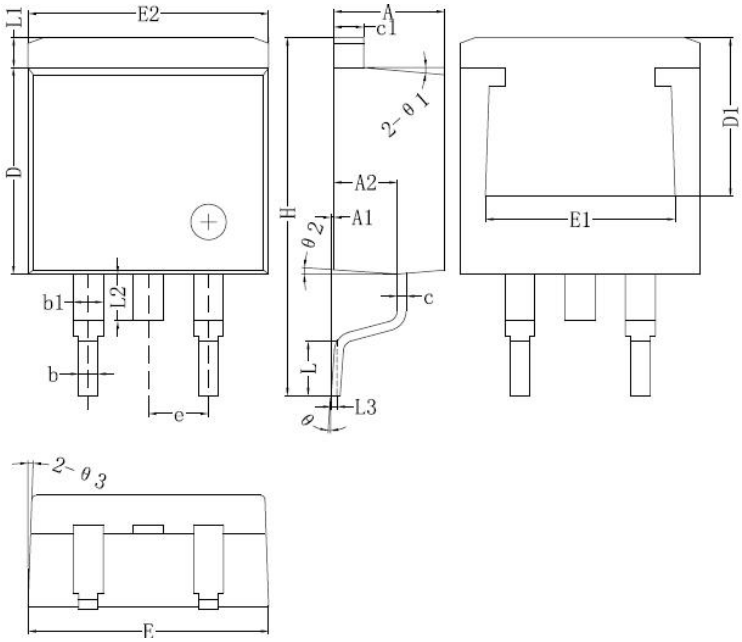
Mechanical Dimensions DPAK



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	-	-

Mechanical Dimensions D²PAK



Symbol	Dimensions in millimeters	
	Min.	Max.
A	4.06	4.83
A1	0	0.26
b	0.51	0.99
b1	1.14	1.78
c	0.31	0.74
c1	1.14	1.65
D	8.38	9.65
D1	6.4	
E1	6.22	
E2	9.65	10.67
e	2.54BSC	
H	14.6	15.88
L	1.78	2.8
L1	-	1.68
L2	-	2.2
L3	0.255BSC	
Θ	0	8°

Technical Data
Data Sheet N1263, Rev. A

DISCLAIMER:
1- The information given herein, including the specifications and dimensions, is subject to change without prior notice to improve product characteristics. Before ordering, purchasers are advised to contact the SMC Diode Solutions sales department for the latest version of the datasheet(s).
2- In cases where extremely high reliability is required (such as use in nuclear power control, aerospace and aviation, traffic equipment, medical equipment , and safety equipment) , safety should be ensured by using semiconductor devices that feature assured safety or by means of users' fail-safe precautions or other arrangement .
3- In no event shall SMC Diode Solutions be liable for any damages that may result from an accident or any other cause during operation of the user's units according to the datasheet(s). SMC Diode Solution assumes no responsibility for any intellectual property claims or any other problems that may result from applications of information, products or circuits described in the datasheets.
4- In no event shall SMC Diode Solutions be liable for any failure in a semiconductor device or any secondary damage resulting from use at a value exceeding the absolute maximum rating.
5- No license is granted by the datasheet(s) under any patents or other rights of any third party or SMC Diode Solutions.
6- The datasheet(s) may not be reproduced or duplicated, in any form, in whole or part, without the expressed written permission of SMC Diode Solutions.
7- The products (technologies) described in the datasheet(s) are not to be provided to any party whose purpose in their application will hinder maintenance of international peace and safety nor are they to be applied to that purpose by their direct purchasers or any third party. When exporting these products (technologies), the necessary procedures are to be taken in accordance with related laws and regulations..