



THE DATASHEET OF SDURB2020




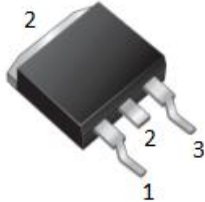
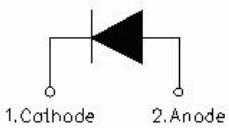
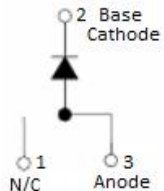
SDUR2020/SDURB2020 ULTRAFAST RECTIFIER

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-0
- “-A” is an AEC-Q101 qualified device
- Terminals finish: 100% Pure Tin
- This is a Pb – Free Device
- All SMC parts are traceable to the wafer lot
- Additional testing can be offered upon request

SDUR2020	SDURB2020
	
	
TO-220AC	D ² PAK

Maximum Ratings:

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	200	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_F (AV)$	50% duty cycle @ $T_c=75^\circ C$, rectangular wave form	20	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	160	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V_{F1}	@ 20A, Pulse, $T_J = 25^\circ\text{C}$	0.90	1.15	V
	V_{F2}	@ 20A, Pulse, $T_J = 150^\circ\text{C}$	-	0.95	V
Reverse Current*	I_{R1}	@ $V_R = \text{rated } V_R, T_J = 25^\circ\text{C}$	0.4	15	μA
	I_{R2}	@ $V_R = \text{rated } V_R, T_J = 125^\circ\text{C}$	0.03	1.0	mA
Reverse Recovery Time	t_{rr}	$I_F=500\text{mA}, I_R=1\text{A}, \text{and } I_{rm}=250\text{mA}$	31	35	ns

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

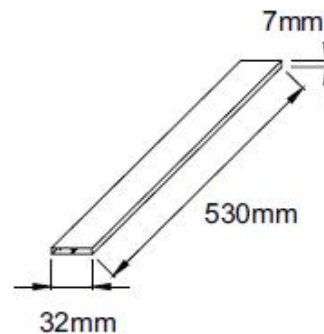
Thermal-Mechanical Specifications:

Characteristics	Symbol	SDUR2020	SDURB2020	Units
Junction Temperature	T_J	-55 to +150		$^\circ\text{C}$
Storage Temperature	T_{stg}	-55 to +150		$^\circ\text{C}$
Typical Thermal Resistance Junction to Case	$R_{\theta JC}$	2.3	2.3	$^\circ\text{C/W}$
Case Style	TO-220AC/ D ² PAK			

Tube Specification

Device	Package	Weight	Shipping
SDUR2020	TO-220AC	1.6g	50pcs / tube
SDURB2020	D ² PAK	1.85g	800pcs / reel
SDURB2020TR	D ² PAK	1.85g	800pcs / reel

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

Tube Specification(TO-220AC)


Ratings and Characteristics Curves

Figure 1
Typical Forward Characteristics

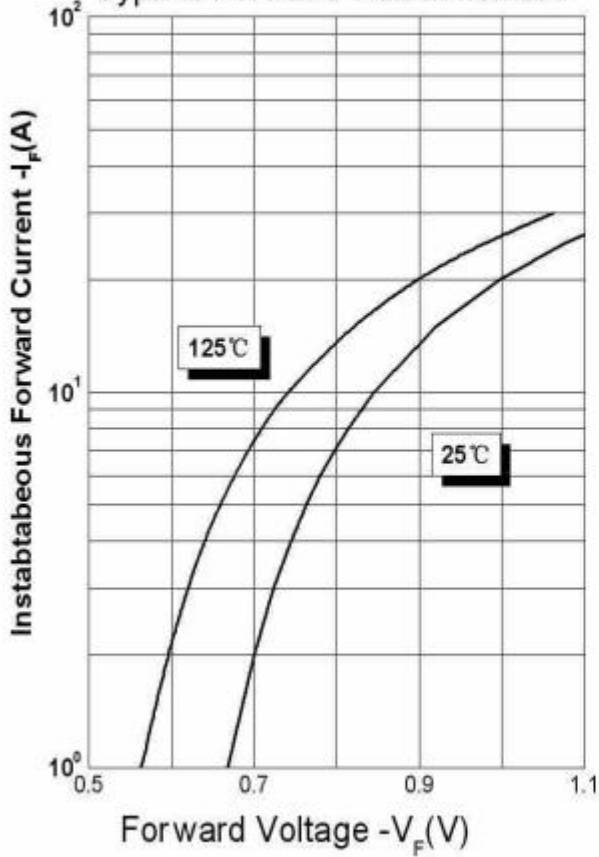


Figure 2
Typical Reverse Characteristics

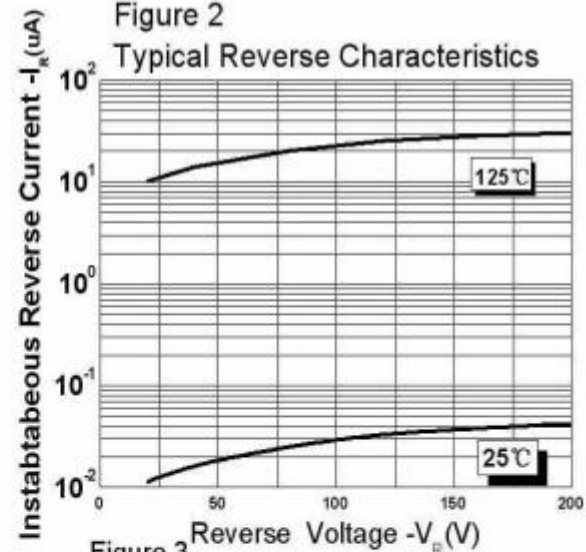
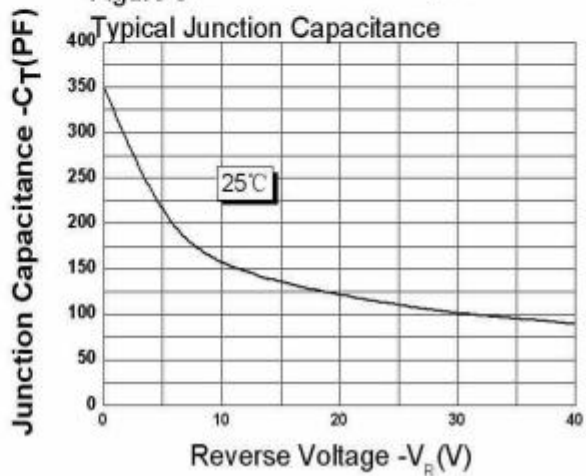
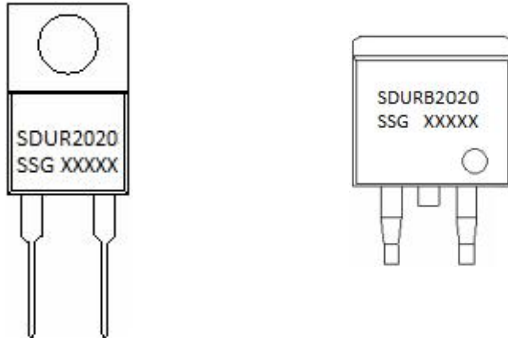


Figure 3
Typical Junction Capacitance



Marking Diagram

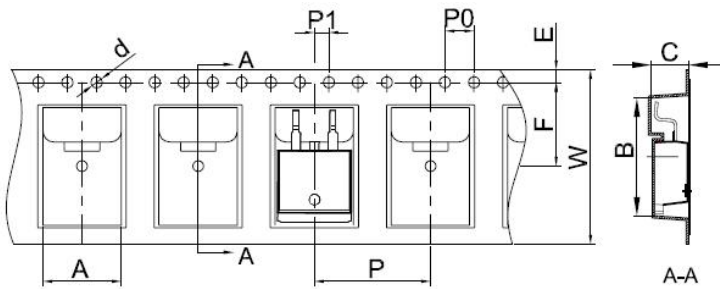


Where XXXXX is YYWWL

SDUR = Device Type
B = Package type
20 = Forward Current (20A)
20 = Reverse Voltage (200V)
SSG = SSG
YY = Year
WW = Week
L = Lot Number

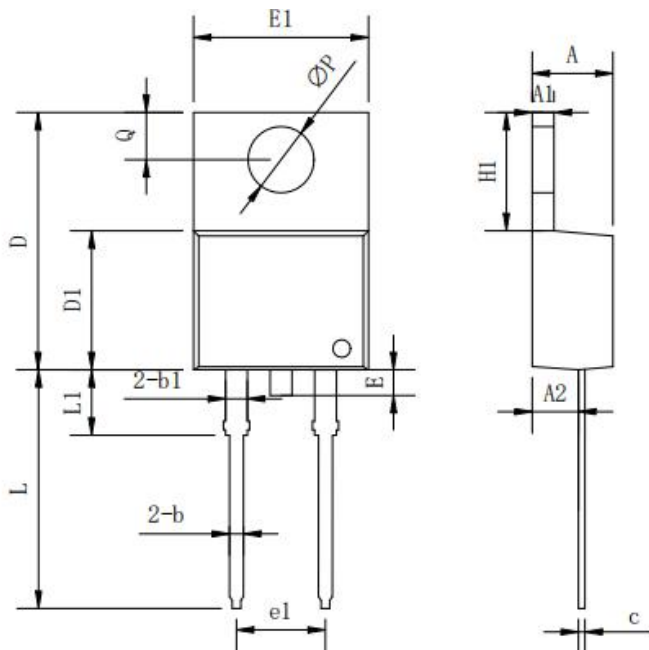
Cautions: Molding resin
Epoxy resin UL:94V-0

Carrier Tape & Reel Specification D²PAK



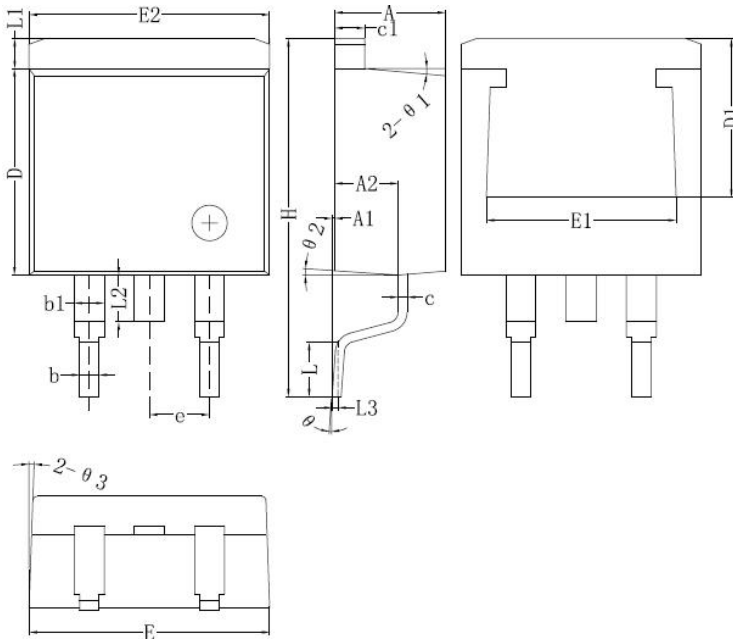
SYMBOL	Millimeters	
	Min.	Max.
A	10.70	10.90
B	16.03	16.23
C	5.11	5.31
d	1.45	1.65
E	1.65	1.85
F	11.40	11.60
P0	3.90	4.10
P	15.90	16.10
P1	1.90	2.10
W	23.90	24.30

Mechanical Dimensions TO-220AC



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	3.56	-	4.83
A1	0.51	-	1.40
A2	2.03	-	2.92
b	0.38	-	1.02
b1	1.14	-	1.78
c	0.31	-	0.61
D	14.22	-	16.51
D1	8.38	-	9.42
E	-	-	1.78
E1	9.65	10.16	10.67
e1	-	5.08	-
H1	5.84	-	6.86
L	12.70	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-

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	8.65
D1	6.86	
E1	6.22	
E2	9.65	10.67
e	2.54BSC	
H	14.60	15.88
L	1.78	2.80
L1	-	1.68
L2	-	1.78
L3	0.255BSC	
Θ	0	8°

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