

SDUR1030/SDURF1030 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
- 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

SDUR1030	SDURF1030
	
	
TO-220AC	ITO-220AC

Maximum Ratings(at 25 °C unless otherwise specified)

Characteristics	Symbol	Condition	Max.	Units
Peak Repetitive Reverse Voltage	V_{RRM}	-	300	V
Working Peak Reverse Voltage	V_{RWM}			
DC Blocking Voltage	V_R			
Average Rectified Forward Current	$I_F(AV)$	Tc=120°C, In DC (TO-220AC) Tc=95°C, In DC (ITO-220AC)	10	A
Peak One Cycle Non-Repetitive Surge Current	I_{FSM}	8.3ms, Half Sine pulse	150	A

Electrical Characteristics:

Characteristics	Symbol	Condition	Typ.	Max.	Units
Forward Voltage Drop*	V _{F1}	@ 10A, Pulse, T _J = 25°C	0.94	1.30	V
	V _{F2}	@ 10A, Pulse, T _J = 125°C	0.82	1.20	V
Reverse Current*	I _{R1}	@V _R = rated V _R , T _J = 25°C	0.1	30	μA
	I _{R2}	@V _R = rated V _R , T _J = 125°C	0.07	500	μA
Reverse Recovery Time	t _{rr}	I _F =500mA, I _R =1A, and I _{rm} =250mA	29	35	ns

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

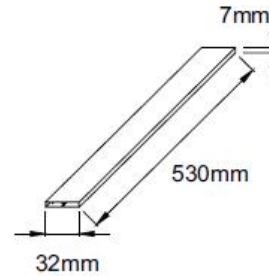
Thermal-Mechanical Specifications:

Characteristics	Symbol	SDUR1030	SDURF1030	Units
Junction Temperature	T _J	-55 to +150		°C
Storage Temperature	T _{stg}	-55 to +150		°C
Typical Thermal Resistance Junction to Case	R _{θJC}	2.3	4.2	°C/W
Case Style		TO-220AC/ ITO-220AC		

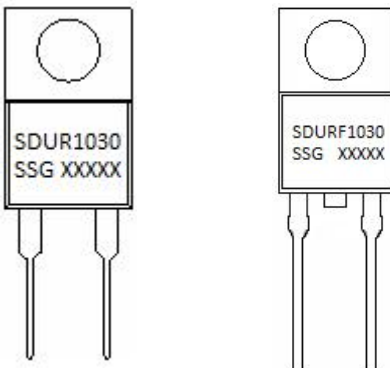
Tube Specification

Device	Package	Weight	Shipping
SDUR1030	TO-220AC	1.6g	50pcs / tube
SDURF1030	ITO-220AC	1.6g	50pcs / tube

Tube Specification(TO-220AC/ITO-220AC)



Marking Diagram



Where XXXXX is YYWWL

- SDUR = Device Type
- F = 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

Ratings and Characteristics Curves

Figure 1 Typical Forward Characteristics

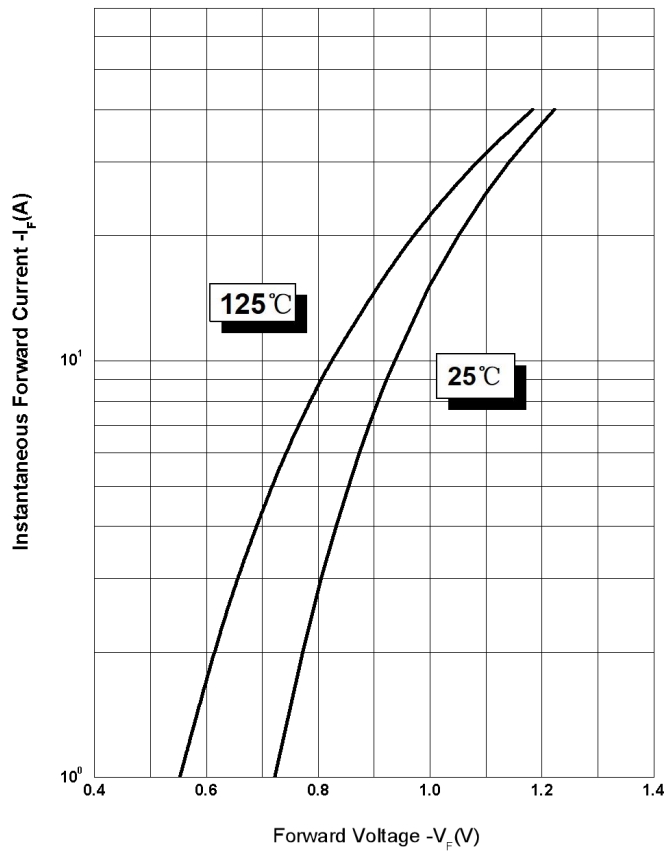


Figure 2 Typical Reverse Characteristics

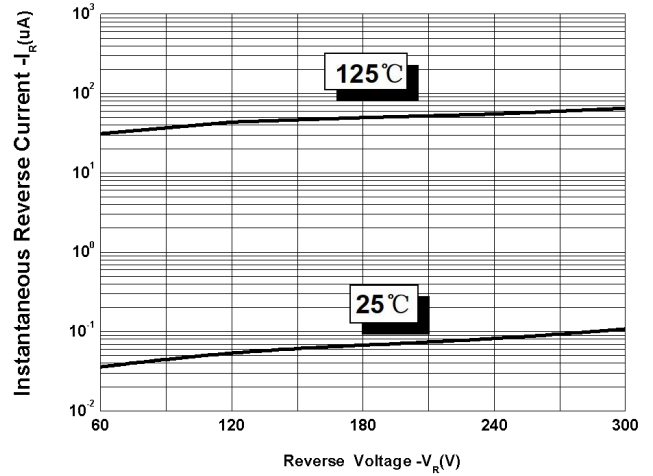
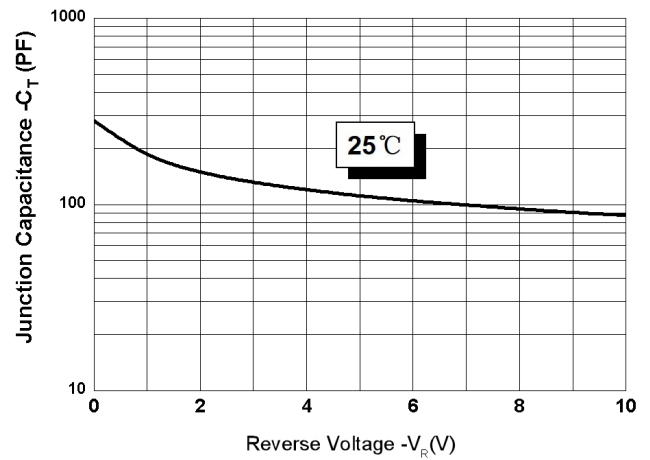
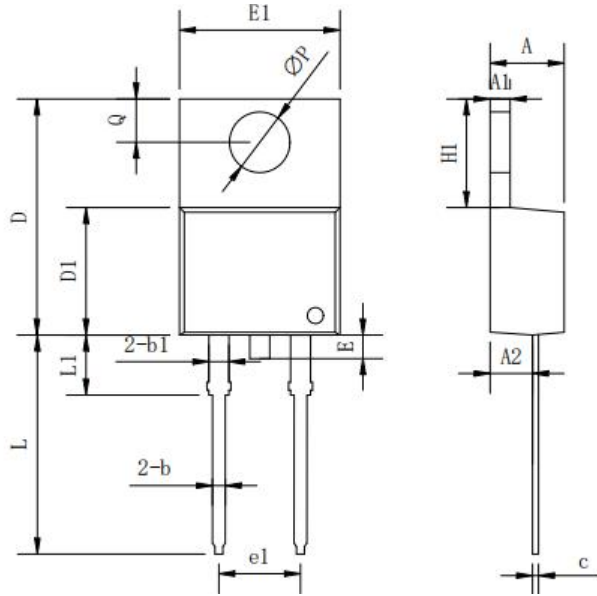


Figure 3 Typical Junction Capacitance

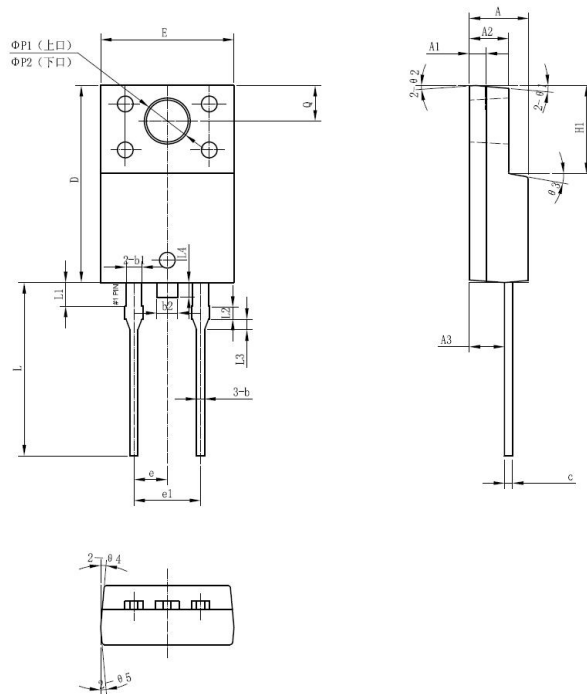


Mechanical Dimensions TO-220AC



Symbol	Dimensions in millimeters		
	Min.	Typical	Max.
A	3.56	-	4.83
A1	0.51	-	1.4
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	12.7	-	14.73
L1	-	-	6.35
ΦP	-	3.56	-
Q	2.54	-	3.43

Mechanical Dimensions ITO-220AC



SYMBOL	Millimeters		
	MIN.	TYP.	MAX.
A	4.30	4.50	4.70
A1	1.10	1.30	1.50
A2	2.80	3.00	3.20
A3	2.50	2.70	2.90
b	0.50	0.60	0.75
b1	1.10	1.20	1.35
b2	1.50	1.60	1.75
c	0.50	0.60	0.75
D	14.80	15.00	15.20
E	9.96	10.16	10.36
e	-	2.55	-
e1	5.00	5.10	5.16
H1	6.50	6.70	6.90
L	12.70	13.20	13.70
L1	1.60	1.80	2.00
L2	0.80	1.00	1.20
L3	0.60	0.80	1.00
L4	-	1.10	1.50
ΦP1(上口)	3.30	3.50	3.70
ΦP2(下口)	2.99	3.19	3.39
Q	2.50	2.70	2.90
θ1		5°	
θ2		4°	
θ3		10°	
θ4		5°	
θ5		5°	



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