

SF10A300H

Ultrafast Recovery Rectifier

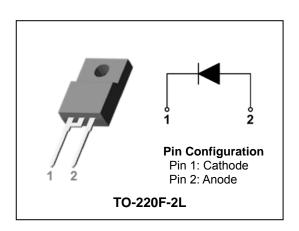
ULTRAFAST RECOVERY POWER RECTIFIER

Features

- Low forward voltage drop and leakage current
- Ultrafast reverse recovery time (trr<30ns)
- · Low power loss and high efficiency
- · High surge capacity
- Full lead (Pb)-free and RoHS compliant device

Applications

- Switching power supply
- Power inverters
- Free-wheeling diode
- Power conversion system
- Motor drives



Product Characteristics

I _{F(AV)}	10A
V_{RRM}	300V
V _{FM} at 125℃	0.95V
t _{rr}	30ns

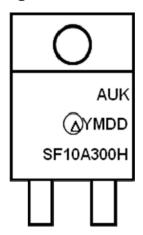
Description

The SF10A300H is an ultrafast rectifier. It has a low forward voltage drop and reverse recovery time (trr<30ns). The device is intended for use as a free wheeling, clamping rectifier in a variety of switching power supplies and other power switching applications.

Ordering Information

Device	Marking Code	Package	Packaging
SF10A300H	SF10A300H	TO-220F-2L	Tube

Marking Information



AUK = Manufacture Logo

 Δ = Control Code of Manufacture

YMDD = Date Code Marking

-. Y = Year Code

-. M = Monthly Code

-. DD = Daily Code

SF10A300H = Specific Device Code

Absolute Maximum Ratings (Limiting Values)

Characteristic	Symbol	Value	Unit
Maximum repetitive reverse voltage Maximum working peak reverse voltage Maximum DC blocking voltage	$egin{array}{c} egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}{c} \egin{array}$	300	V
Maximum average forward rectified current	I _{F(AV)}	10	А
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I _{FSM}	120	А
Storage temperature range	T _{stg}	-45℃ to +150℃	$^{\circ}\mathbb{C}$
Maximum operating junction temperature	Tj	150	$^{\circ}$ C

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{\text{th(j-c)}}$	4.0	°C/W

Electrical Characteristics (Per Diode)

Characteristic	Symbol	Test Condition		Min.	Тур.	Max.	Unit
Poak forward voltage drop	eak forward voltage drop V _{FM} ⁽¹⁾	I _{FM} = 10A	T _j =25℃	-	1	1.30	V
Peak lorward voltage drop			T _j =125℃	-	-	0.95	٧
Reverse leakage current I _{RM}	I _{RM} ⁽¹⁾	V _R = V _{RRM}	T _j =25℃	-	-	20	uA
	I _{RM} ` ′		T _j =125℃	-	-	500	uA
Reverse recovery time	t _{rr}	I _F = 1A, di/dt =-100 A/us		-	-	30	ns
Junction capacitance	C _j	$V_R = 10V_{DC}$, $f=1MHz$		-	65	-	pF

Note : (1) Pulse test : $t_P \le 380~\mu s$, Duty cycle $\le 2\%$

Electrical Characteristic Curves

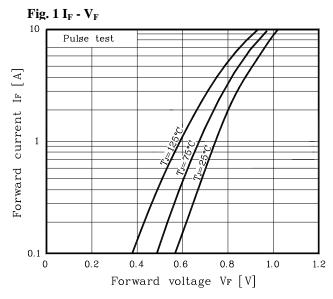


Fig. $3 I_O - P_F$

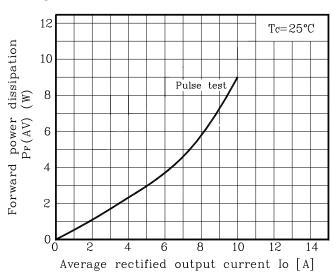


Fig. 5 I_{FSM} – Number of cycle

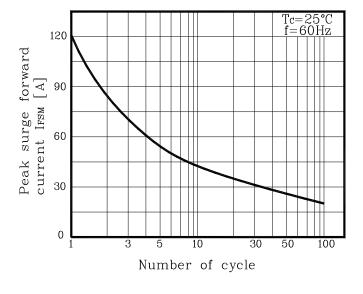


Fig. 2 I_R - V_R

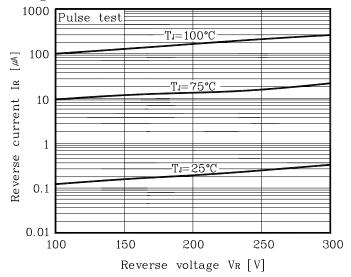


Fig. 4 C_T - V_R

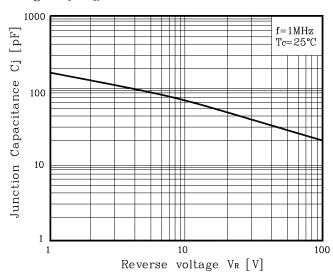
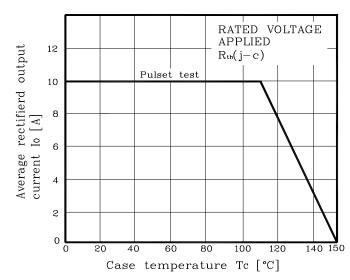
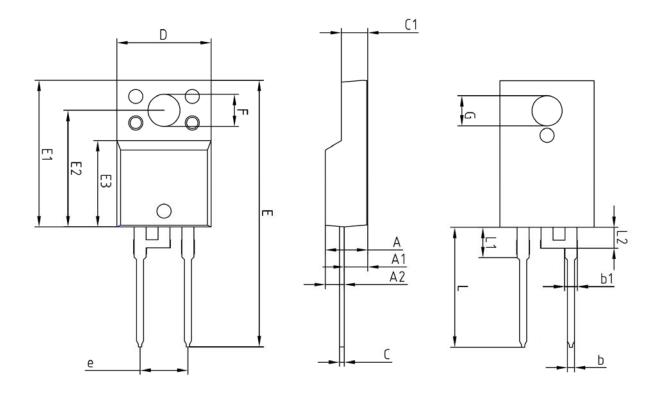


Fig. 6 $I_{\rm O}$ derating - $T_{\rm C}$



SF10A300H

Package Outline Dimension



CV4001		NOTE		
SYMBOL	MINIMUM	NOMINAL	MAXIMUM	NOIE
Α	-	-	4.60	
A1	2.45	2.50	2.55	
A2	1.95	2.00	2.05	
b	0.65	0.75	0.85	
Ь1	1.07	1.27	1.47	
С	0.40	0.50	0.60	
C1	2.70	2.80	2.90	
D	9.90	10.00	10.10	
Ε	28.00	_	28.60	
E1	15.50	15.60	15.70	
E2	12.30	12.40	12.50	
E3	9.15	9.20	9.25	
F	3.30	3.40	3.50	
G	3.10	3.20	3.30	
е	5.08 BSC			
L	12.40	 3.46 BS	13.00	
L1				
L2	2.21 BSC			

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