KODENSHI AUK

SFN30W600W2

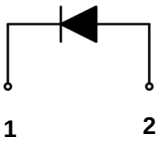
Ultrafast Recovery Rectifier

600V, 30A ULTRAFAST RECTIFIER

Features

- Low forward voltage drop and leakage current
- Soft recovery time
- Fast recovery
- Low power loss and high efficiency
- Full lead (Pb)-free and RoHS compliant device





Pin 1 : Cathode

Pin 2 : Anode

TO-247-2L

Applications

- Switch mode power supply (SMPS)
- Uninterruptible power supplies (UPS)
- Free-wheeling diode
- Snubber diode

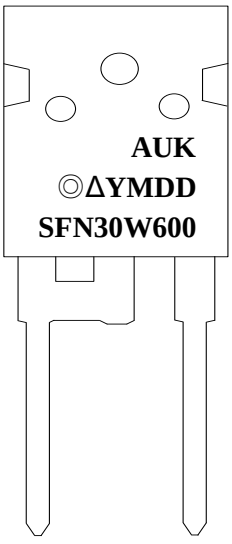
Product Characteristics

$I_{F(AV)}$	30A
V_{RRM}	600V
V_{FM} at 150℃	1.25V
t_{rr} (Typ.)	35ns

Ordering Information

Device	Marking Code	Package	Packaging
SFN30W600W2	SFN30W600	TO-247-2L	Tube

Marking Information



AUK = Manufacture Logo

◎ = Management Code

Δ = Control Code of Manufacture

YMDD = Date Code Marking

-. Y = Year Code

-. M = Month Code

-. DD = Daily Code

SFN30W600 = 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	V_{RRM} V_{RWM} V_R	600	V
Maximum average forward rectified current	$I_{F(AV)}$	30	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	250	A
Power dissipation	P_D	160	W
Storage temperature range	T_{stg}	-55 to +150	℃
Maximum operating junction temperature	T_J	150	

Thermal Characteristics

Characteristic	Symbol	Value	Unit
Maximum thermal resistance junction to case	$R_{th(j-c)}$	0.78	℃/W
Maximum thermal resistance junction to ambient	$R_{th(j-a)}$	62.5	℃/W

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 30A	T_J=25℃	-	1.35	1.60	V
			T_J=150℃	-	-	1.25	
Reverse leakage current	I_{RM} (2)	$V_R = V_{RRM}$	T_J=25℃	-	-	10	uA
			T_J=150℃	-	-	800	
Junction capacitance	C_J	V_R = 10V		-	128	-	pF

Note : (1) Pulse test : $t_P \leq 380$us, Duty cycle≤2%

(2) Pulse test : $t_P \leq 20$ms, Duty cycle≤2%

Dynamic Recovery Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Reverse recovery time	t_{rr}	I_F = 1A, di/dt = -100 A/us		-	35	40	ns
		I_F = 30A, di/dt=-200 A/us	T_J=25℃	-	80	-	
			T_J=125℃	-	110	-	
Reverse recovery current	I_{RRM}		T_J=25℃	-	6.1	-	A
			T_J=125℃	-	8.8	-	
Reverse recovery charge	Q_{rr}		T_J=25℃	-	244	-	nC
			T_J=125℃	-	484	-	

Typical Electrical Characteristic Curves

Fig. 1 V_F - I_F

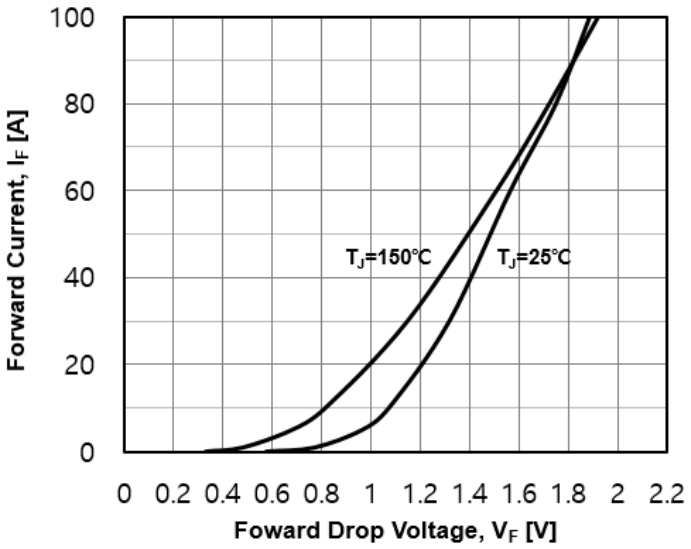


Fig. 2 I_R - V_R

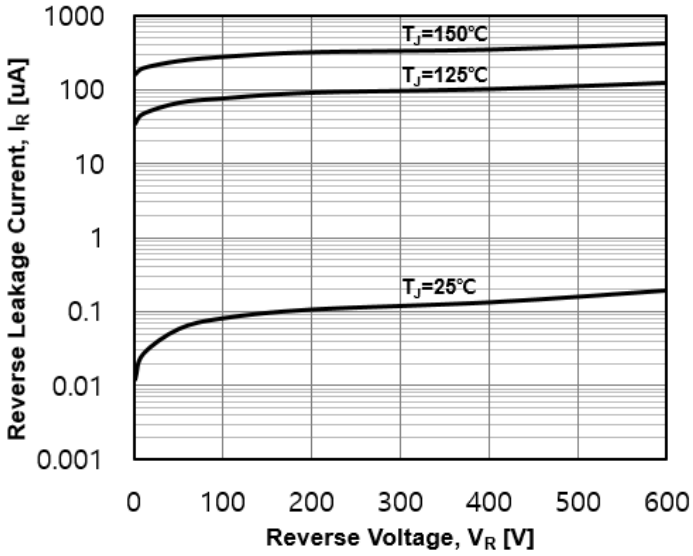


Fig. 3 Typical Peak Forward Surge Characteristics

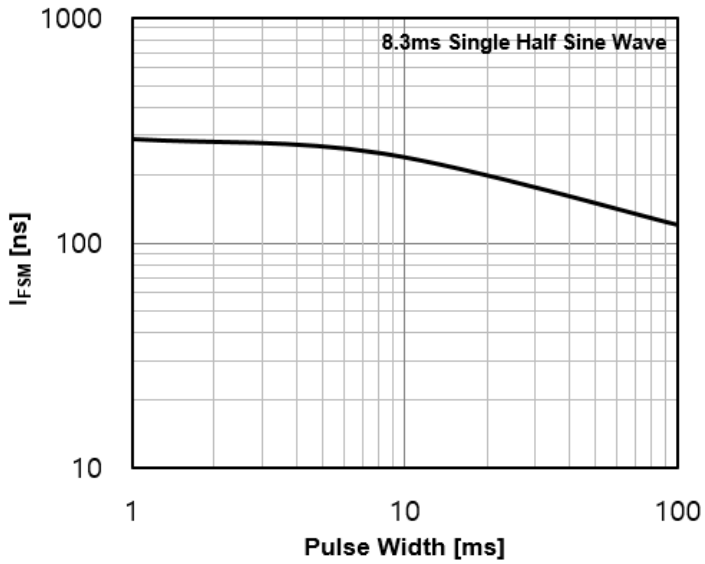


Fig. 4 Average Forward Current Derating

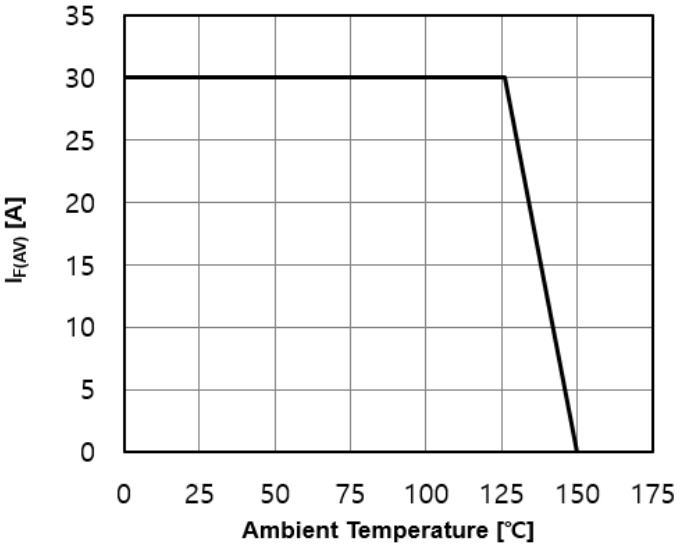


Fig. 5 C_J - V_R

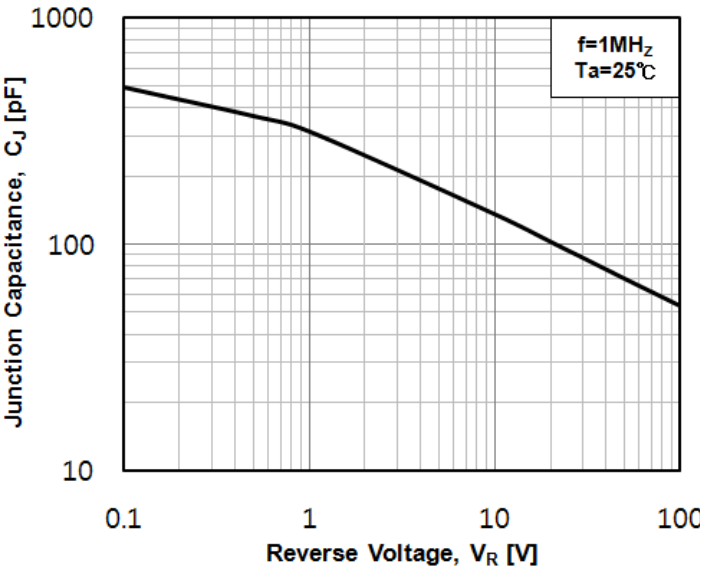
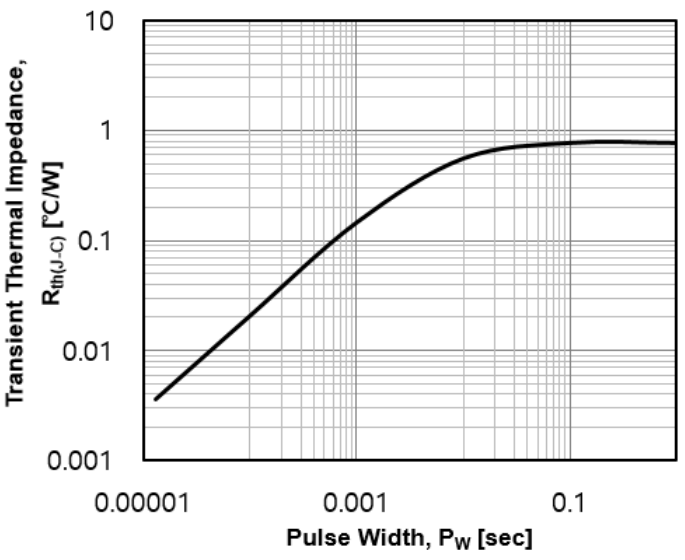
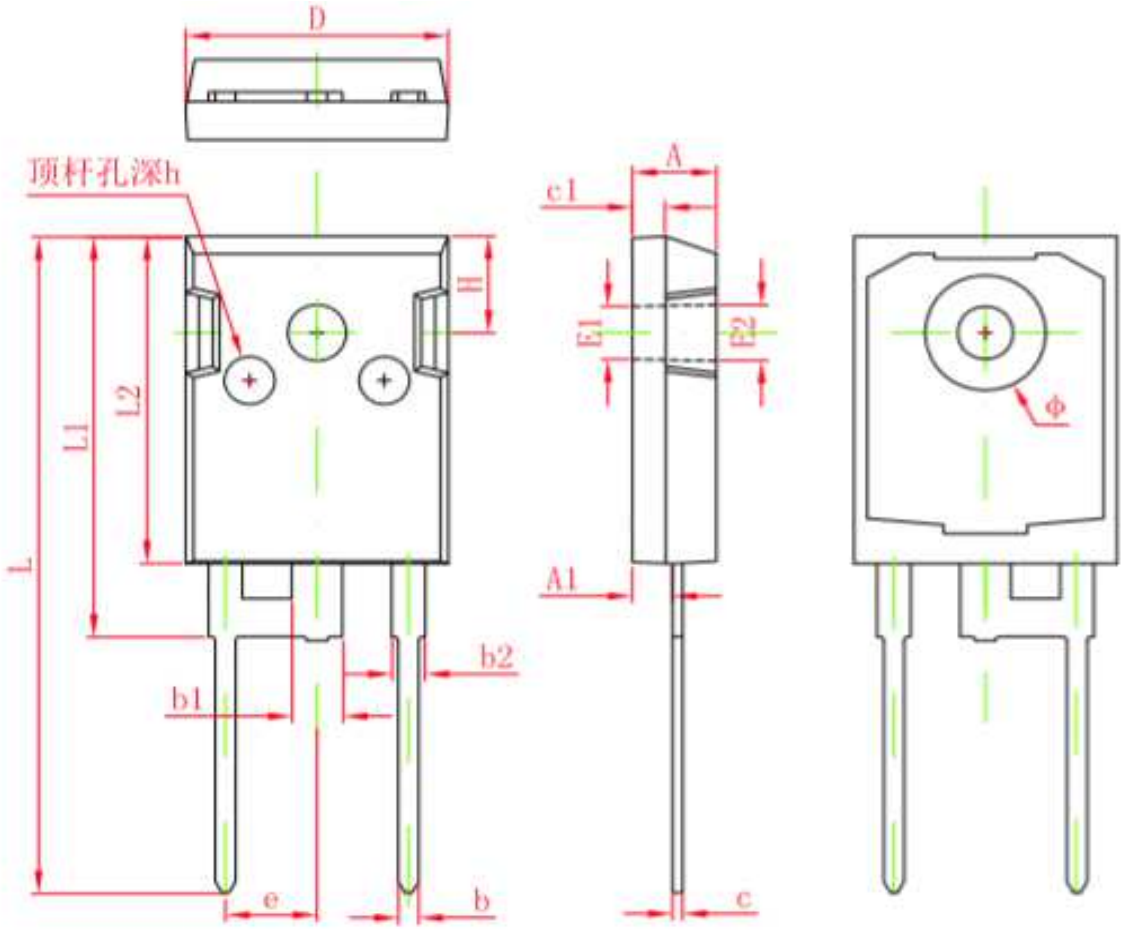


Fig. 6 Transient Thermal Resistance



Package Outline Dimension (Unit: mm)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	4.850	5.150	0.191	0.200
A1	2.200	2.600	0.087	0.102
b	1.000	1.400	0.039	0.055
b1	2.800	3.200	0.110	0.126
b2	1.800	2.200	0.071	0.087
c	0.500	0.700	0.020	0.028
c1	1.900	2.100	0.075	0.083
D	15.450	15.750	0.608	0.620
E1	3.500 REF		0.138 REF	
E2	3.600 REF		0.142 REF	
L	40.900	41.300	1.610	1.626
L1	24.800	25.100	0.976	0.988
L2	20.300	20.600	0.799	0.811
Φ	7.100	7.300	0.280	0.287
e	5.450 TYP		0.215 TYP	
H	5.980 REF		0.235 REF	
h	0.000	0.300	0.000	0.012

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