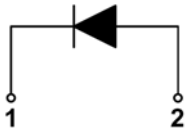
ULTRAFAST RECOVERY POWER RECTIFIER

Features

- Ultrafast recovery time
- High voltage and high reliability
- High speed switching
- Low power loss and High efficiency
- Halogen-free component and RoHS compliant device



Pin Configuration
Pin 1: Cathode
Pin 2: Anode

TO-220F-2L

Applications

- General purpose
- Switching mode power supply
- Free-wheeling diode for motor application
- Power switching circuits
- DC-DC converter systems

Product Characteristics

$I_{F(AV)}$	20A
V_{RRM}	600V
t_{rr} (Typ.)	25ns

Description

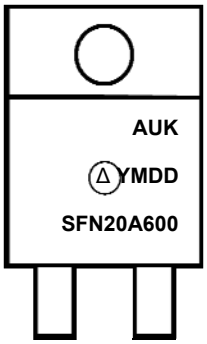
The SFN20A600T is ideally as boost diode in discontinuous or critical mode power factor corrections. The planar structure and the platinum doper life time control guarantee the best overall performance, ruggedness and reliability characteristics.

The device is also intended for use as a freewheeling diode in power supplies and other power switching applications.

Ordering Information

Device	Marking Code	Package	Packaging
SFN20A600T	SFN20A600	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

SFN20A600 = 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	$I_{F(AV)}$	20	A
Peak forward surge current 8.3ms single half sine-wave superimposed on rated load per diode	I_{FSM}	130	A
Storage temperature range	T_{stg}	-45℃ to +150℃	℃
Maximum operating junction temperature	T_J	150	℃

Thermal Characteristics

Characteristic		Symbol	Value	Unit
Maximum thermal resistance	junction to case	$R_{th(j-c)}$	3.3	℃/W

Electrical Characteristics

Characteristic	Symbol	Test Condition		Min.	Typ.	Max.	Unit
Peak forward voltage drop	V_{FM} (1)	I_{FM} = 20A	T_j=25℃	-	1.64	2.1	V
Reverse leakage current	I_{RM} (1)	$V_R = V_{RRM}$	T_j=25℃	-	-	10	uA
			T_j=125℃	-	-	200	uA
Reverse recovery time	t_{rr}	I_F = 1A, di/dt =-100 A/us		-	25	30	ns
Junction capacitance	C_j	V_R = 10V_{DC}, f=1MHz		-	62	-	pF

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

Rating & Electrical Characteristic Curves

Fig. 1) Typical Forward Characteristics

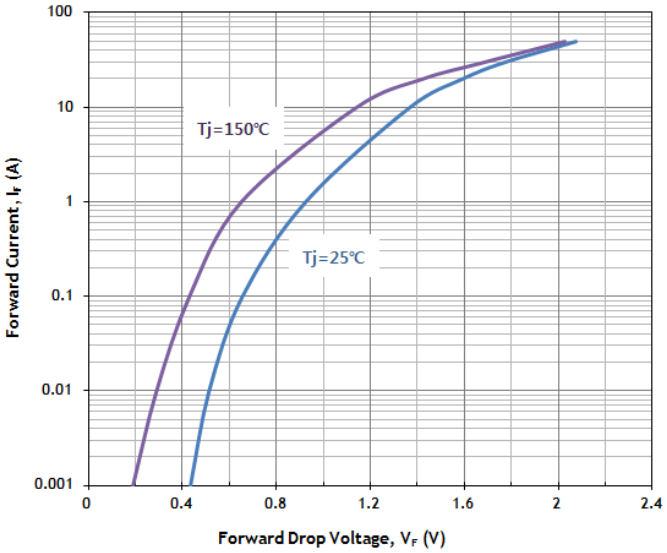


Fig. 2) Typical Reverse Characteristics

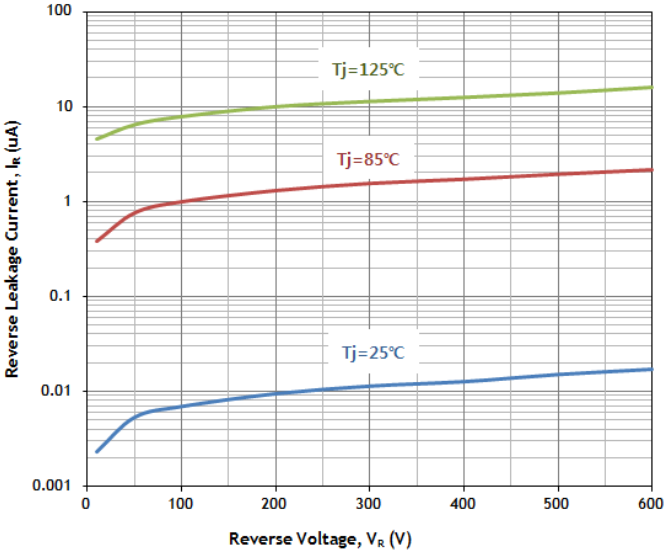


Fig. 3) Typical Junction Capacitance Characteristics

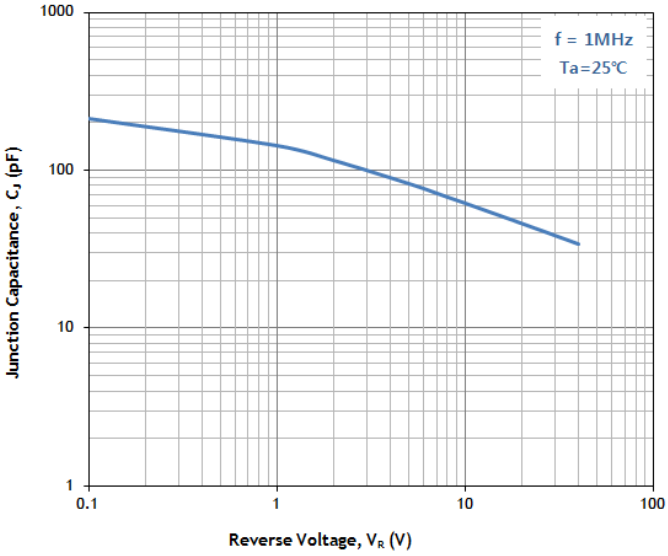


Fig. 4) Peak Forward Surge Current Characteristics

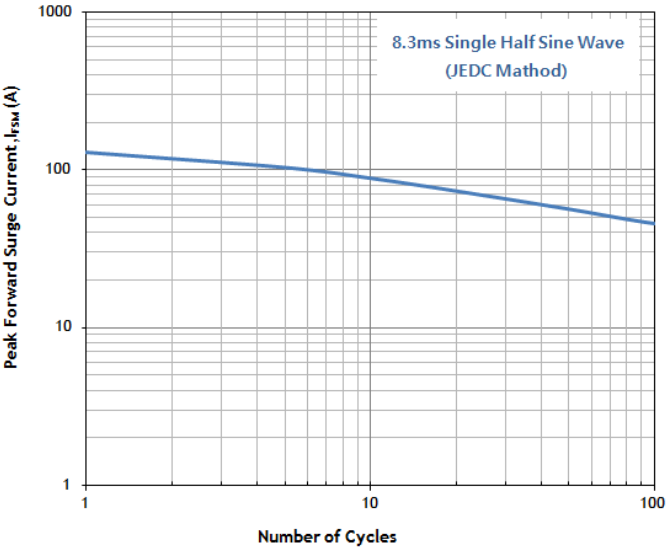


Fig. 5) Thermal Impedance Characteristics

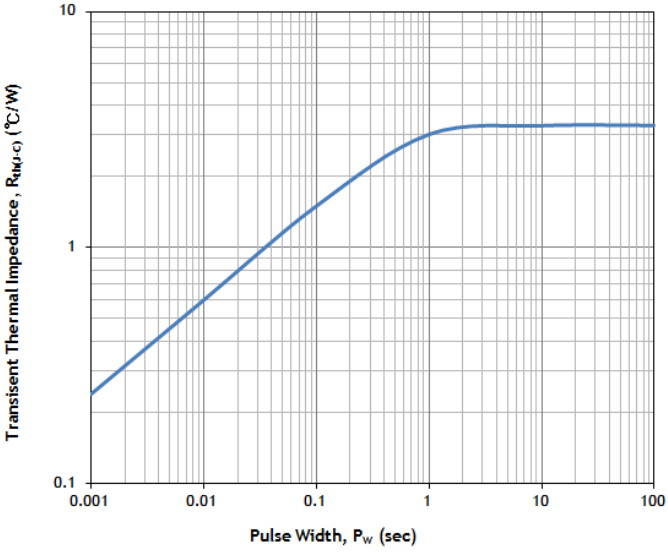
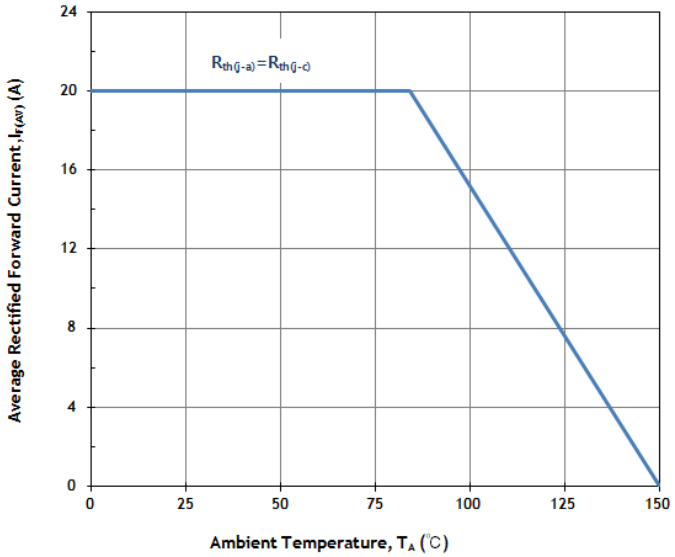
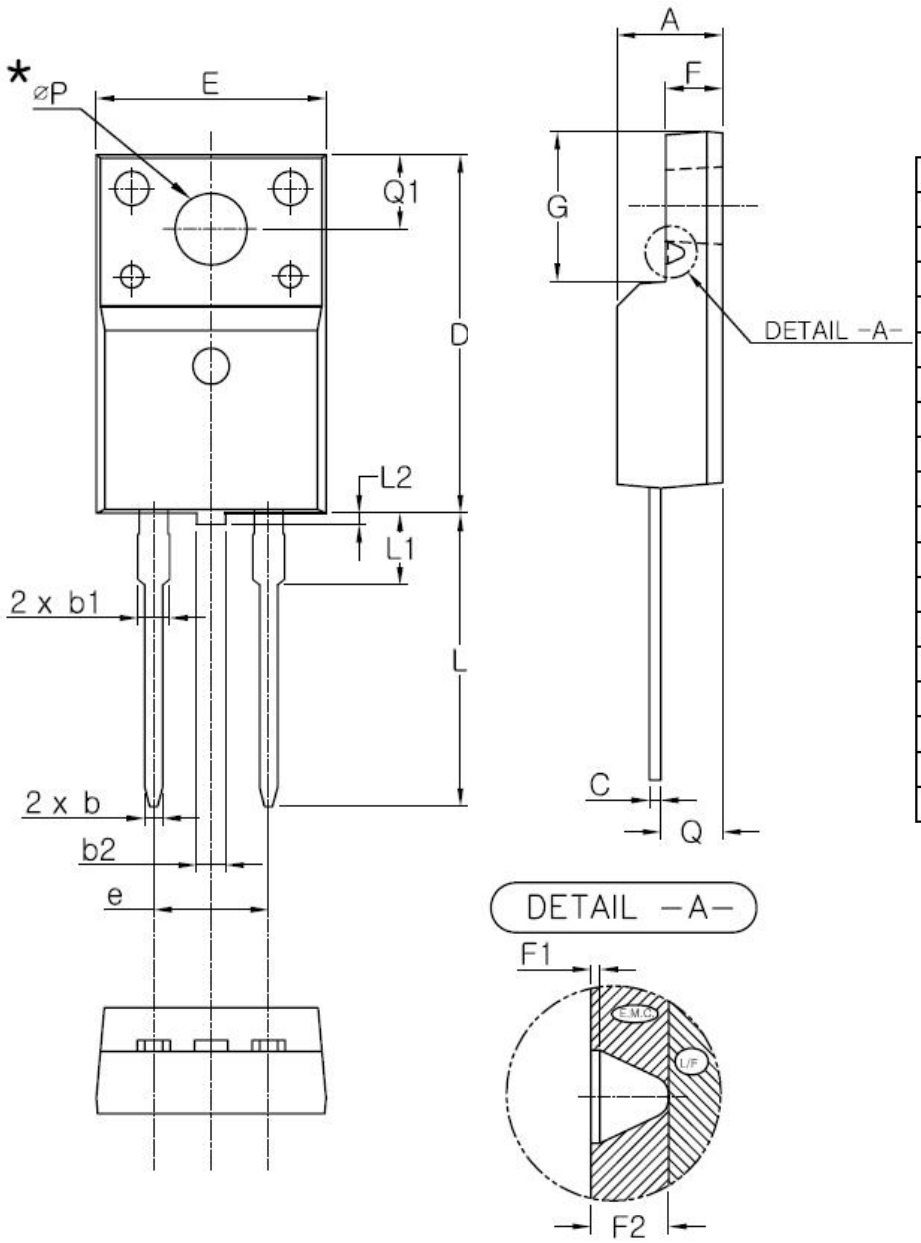


Fig. 6) Average Forward Current Characteristics



Package Outline Dimension



SYMBOL	MIN	NOM	MAX
A	4.50	4.70	4.90
b	0.70	0.80	0.90
b1	1.33	1.40	1.47
b2	0.98	1.28	1.58
C	0.45	0.50	0.60
D	15.67	15.87	16.07
E	9.96	10.16	10.36
e		5.08 BSC	
F	2.34	2.54	2.74
F1		(0.10)	
F2		(0.84)	
G	6.48	6.68	6.88
L	12.78	12.98	13.18
L1	2.98	3.18	3.38
L2	-	-	0.80
Q	2.56	2.76	2.96
Q1	3.10	3.30	3.50
* øP	3.08	3.18	3.28

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