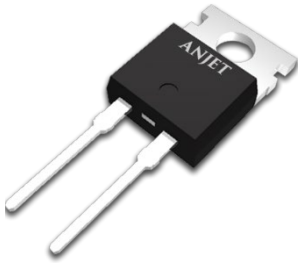
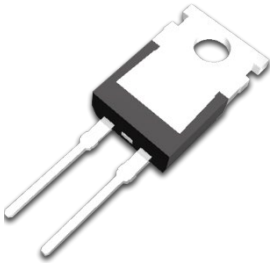
Features

- Low Forward Voltage (VF)
- Shorter recovery time
- High speed switching
- High surge current capability
- Enabling higher frequency and increased power density
- System efficiency improvement
- System cost and size savings due to the reduced cooling requirements

TO-220AC-2L



(Top View)



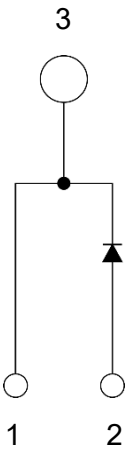
(Bottom View)

Applications

- Power Factor Correction in SMPS
- Solar inverter
- Uninterruptible Power Supply
- Motor Drives
- AC/DC Converters

Pin Configuration

Circuit Diagram



1: Cathode
2: Anode
3: Cathode

Mechanical Characteristics

- TO-220-2L package
- Pb-Free, Halogen Free, RoHS Compliant
- Packaging: Tube

Pb-Free Halogen Free Compliant

Absolute Maximum Rating

Symbol	Parameter	Value	Unit	Test Condition
V_{RM}	Repetitive peak reverse voltage	650	V	T_C = 25°C
I_F	Continuous forward current	2	A	T_C = 135°C
I_{FSM}	Surge non-repetitive forward current	20 18	A	T_C = 25°C, tp=10ms, Sine half wave T_C = 150°C, tp=10ms, Sine half wave
T_j	Junction temperature	175	°C	
T_{STG}	Storage temperature	-55/+175	°C	

Thermal characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units
$R_{th\ (JC)}$	Thermal resistance, junction-case	-	1.3	-	°C /W

Electrical Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Condition
V_{DC}	DC blocking voltage	650	-	-	V	T_j = 25 °C, I_R=2.0mA
V_F	Forward voltage	-	1.30 1.50 1.60	1.50 - -	V	I_F = 2 A, T_j = 25 °C I_F = 2 A, T_j = 150 °C I_F = 2 A, T_j = 175 °C
I_R	Reverse current	-	1 20 50	50	μA	V_R = 650 V, T_j= 25 °C V_R = 650 V, T_j= 150 °C V_R = 650 V, T_j= 175 °C
Q_C	Total capacitive charge	-	6	-	nC	V_R = 400 V, T_j = 25 °C, di/dt = 350 A/μs
t_C	Switching time	-	11	-	ns	
C	Total capacitance	-	110 10	-	pF	V_R = 1V, f = 1MHz, T_j= 25°C V_R = 650 V, f = 1MHz, T_j= 25°C

V_F – I_F Characteristics

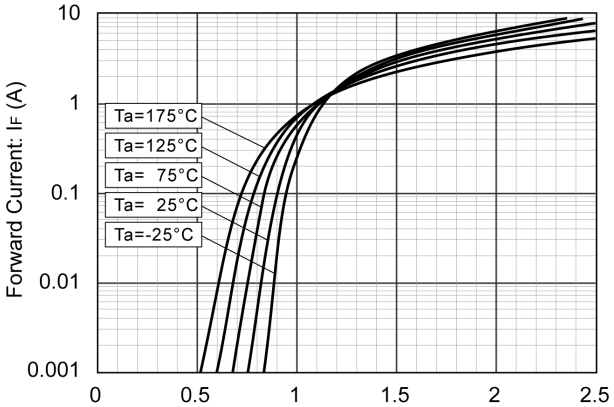


Figure1. Forward Voltage: V_F (V)

V_F – I_F Characteristics

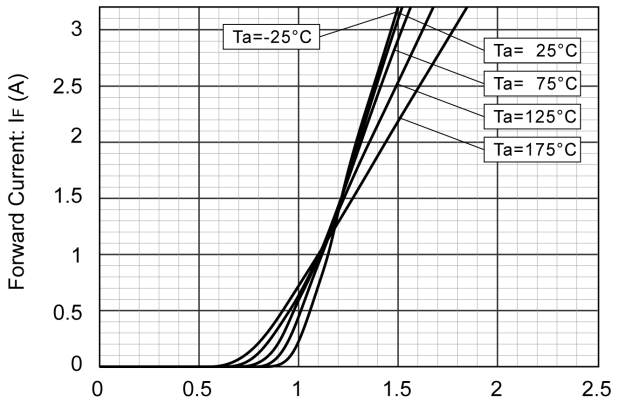


Figure2. Forward Voltage: V_F (V)

V_R – I_R Characteristics

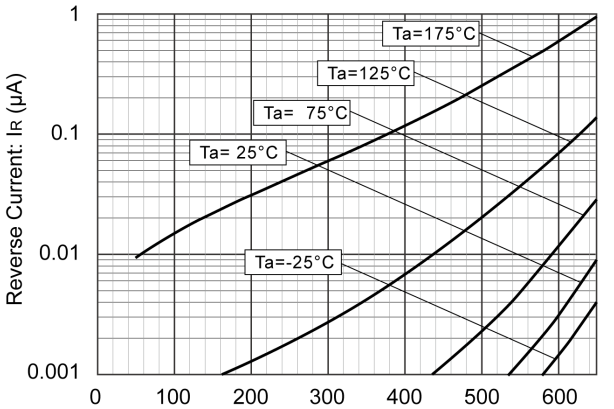


Figure3. Reverse Voltage: V_R (V)

V_R – C_t Characteristics

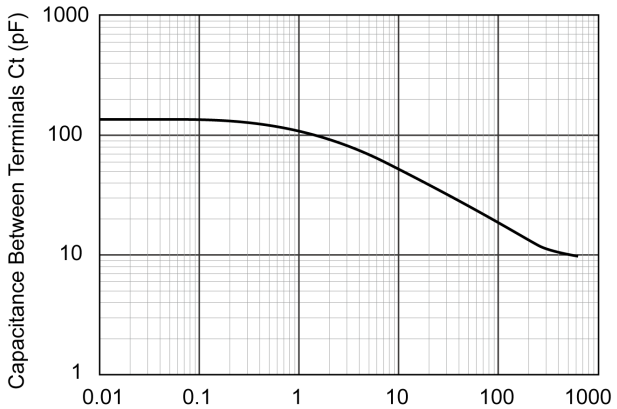


Figure4. Reverse Voltage: V_R(V) Ta = 25 °C f = 1MHz

Maximum I_P –T_C Characteristics

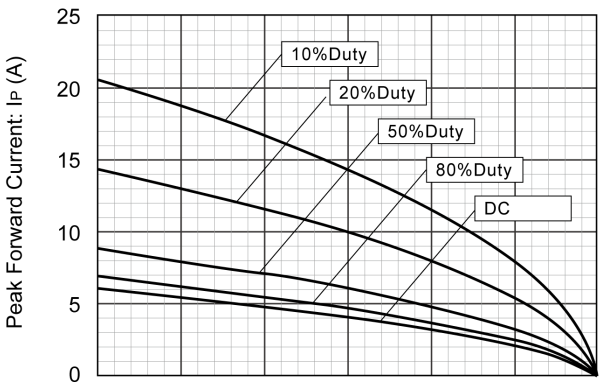


Figure5. Case Temperature: T_C (°C)

Power Dissipation

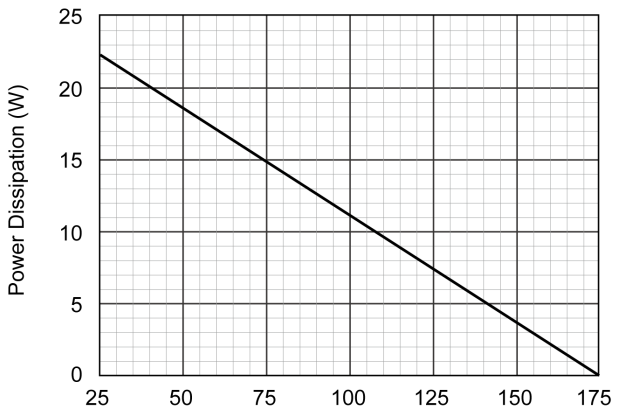


Figure6. Case Temperature: T_C (°C)

I_{FSM} – P_W Characteristics

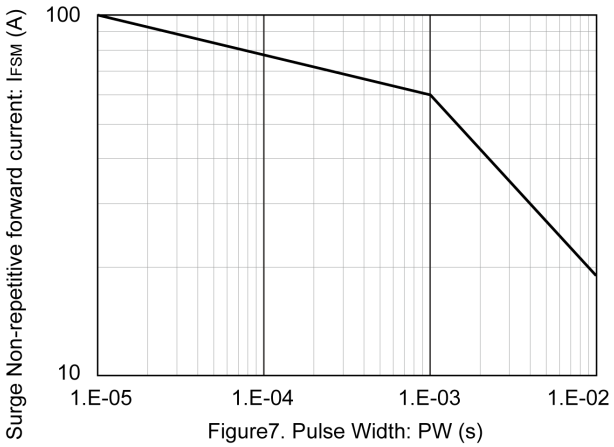


Figure7. Pulse Width: PW (s)

E_C – V_R Characteristics

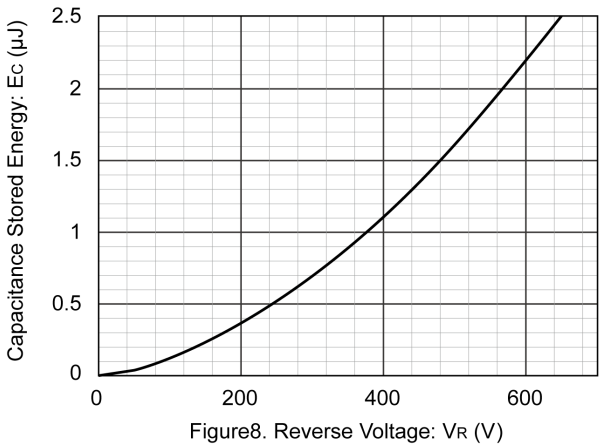
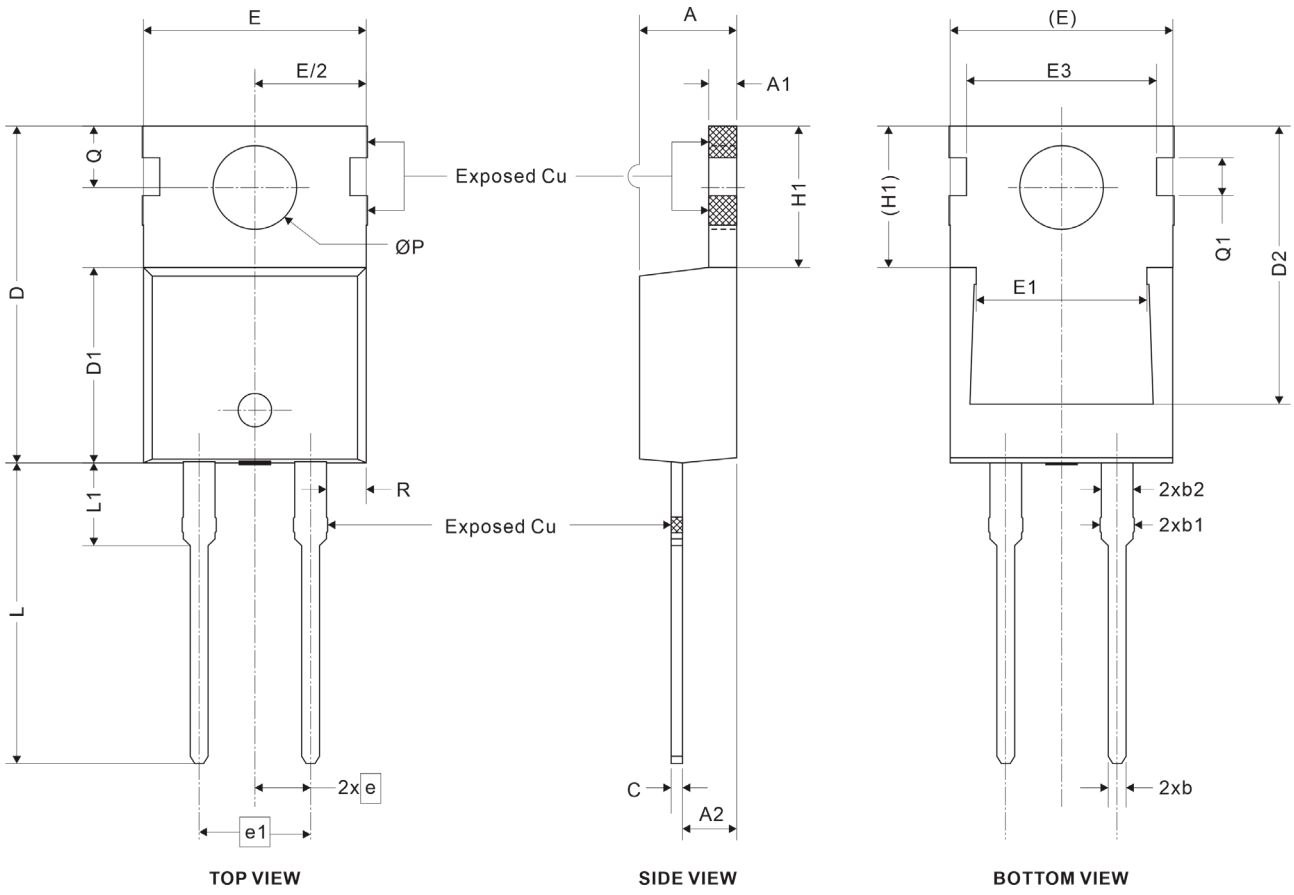


Figure8. Reverse Voltage: VR (V)

Package Outline

TO-220AC



Package Dimensions

Symbol	Dimensions In Millimeters			Symbol	Dimensions In Millimeters		
	Min.	NOM.	Max.		Min.	NOM.	Max.
A	4.24	4.44	4.64	E3	8.70REF.		
A1	1.15	1.27	1.40	e	2.54BSC		
A2	2.30	2.48	2.70	e1	5.08BSC		
b	0.70	0.80	0.90	H1	6.30	6.45	6.60
b1	1.20	1.55	1.75	L	13.47	13.72	13.97
b2	1.20	1.45	1.70	L1	3.60	3.80	4.00
c	0.40	0.50	0.60	ØP	3.75	3.84	3.93
D	14.70	15.37	16.00	Q	2.60	2.80	3.00
D1	8.82	8.92	9.02	Q1	1.73REF.		
D2	12.63	12.73	12.83	R	1.82REF.		
E	9.96	10.16	10.36				
E1	6.86	7.77	8.89				