

SMUR1060/SMUR1060F

Super Fast Recovery Rectifiers
Reverse Voltage 600V Forward Current 10A

Features

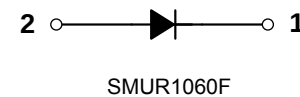
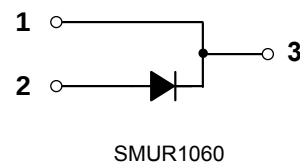
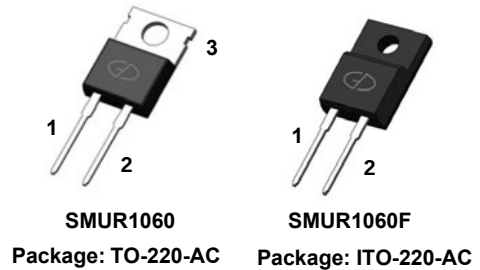
- FRED wafer construction
- Low forward drop voltage, low power loss
- High surge current capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21

Applications

- SMPS
- Lighting
- UPS

Mechanical Data

- Case: Epoxy, Molded
- Weight: 1.9grams(approximately)
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 50 units per plastic tube



Maximum Ratings (T_A = 25°C unless otherwise noted)

Parameter	Symbol	Value	Unit	
Maximum Repetitive Peak Reverse Voltage	V _{RRM}	600	V	
Working Peak Reverse Voltage	V _{RMS}	420	V	
Maximum DC Blocking Voltage	V _{DC}	600	V	
Maximum Average Forward Rectified Current at T _c =105°C total device per diode	I _{F(AV)}	10	A	
Peak Forward Surge Current (8.3ms single half sine-wave superimposed on rated load per diode)	I _{FSM}	100	A	
Voltage Rate of Change(rated V _R)	DV/dt	10000	V/us	
Operating Junction Temperature Range	T _J	-55 to+150	°C	
Storage Temperature Range	T _{STG}	-55 to+150	°C	
Maximum Reverse Recover Time (I _F =0.5Amp, I _R =1.0Amp, I _{RR} =0.25A)	T _{rr}	25	ns	
Forward Drop Voltage (I _F =10A, T _J =25°C) ¹	V _F	2.20	V	
Forward Drop Voltage (I _F =10A, T _J =125°C) ¹		2.10		
Reverse Leakage Current @V _R (T _J =25°C) ²	I _R	10	uA	
Reverse Leakage Current @V _R (T _J =125°C) ²		500		
Thermal Characteristics T _A =25°C unless otherwise noted				
Parameter	Symbol	TYP.(TO-220-AC)	TYP.(ITO-220-AC)	Unit
Thermal Resistance, Junction to Case per Leg	R _{θJC}	2.0	4.0	°C/W
Thermal Resistance, Junction to Ambient per Leg	R _{θJA}	62.5	62.5	°C/W

Note:

1. Pulse test: 300us pulse width, duty cycle=2%
2. Pulse test: 30ms pulse width

SMUR1060/SMUR1060F

Super Fast Recovery Rectifiers
Reverse Voltage 600V Forward Current 10A

Ratings and Characteristics Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

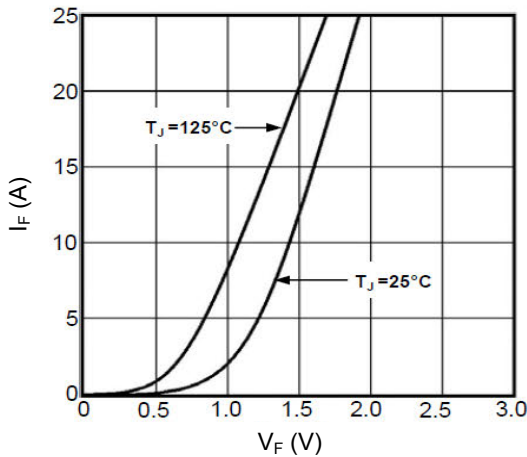


Figure 1. Forward Voltage Drop vs. Forward Current

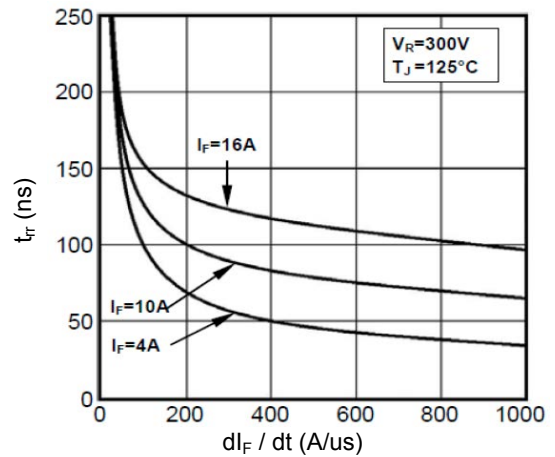


Figure 2. Reverse Recovery Time vs. dI_F / dt

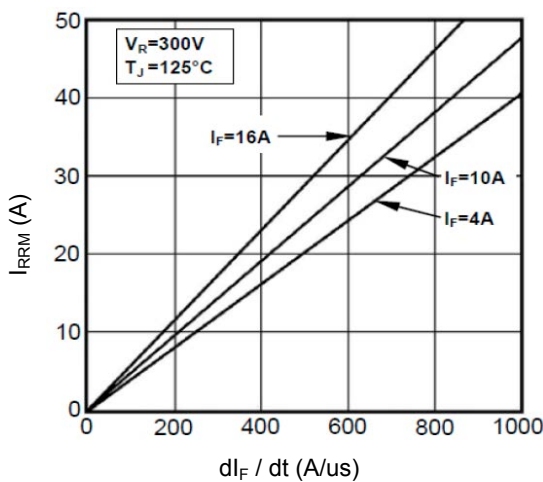


Figure 3. Reverse Recovery Current vs. dI_F / dt

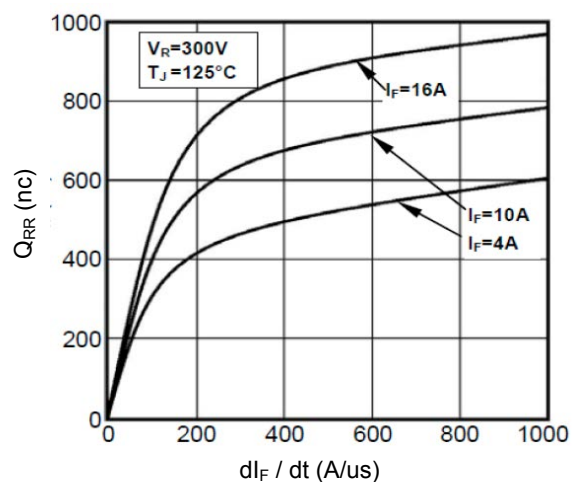


Figure 4. Reverse Recovery Charge vs. dI_F / dt

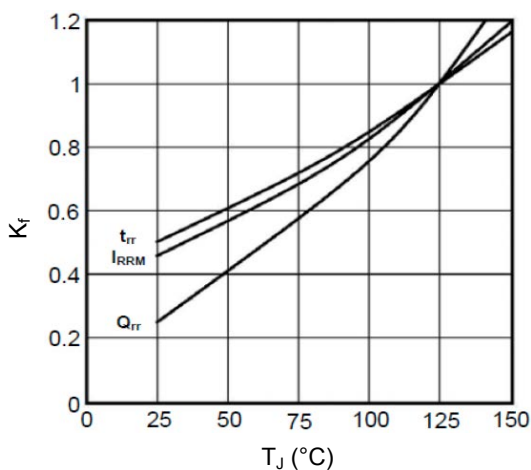


Figure 5. Dynamic Parameters vs. Junction Temperature

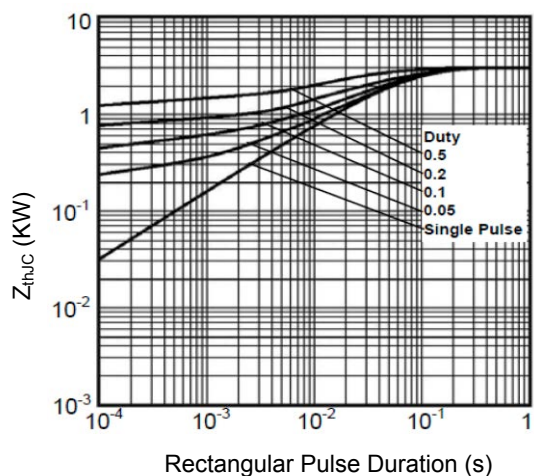
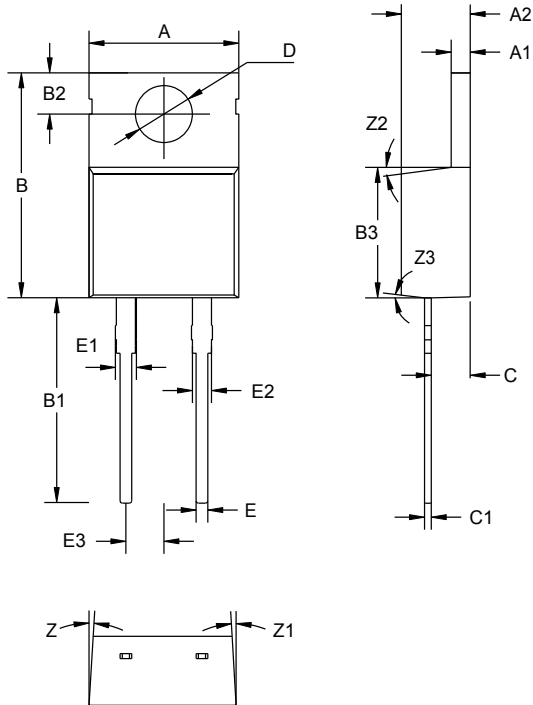


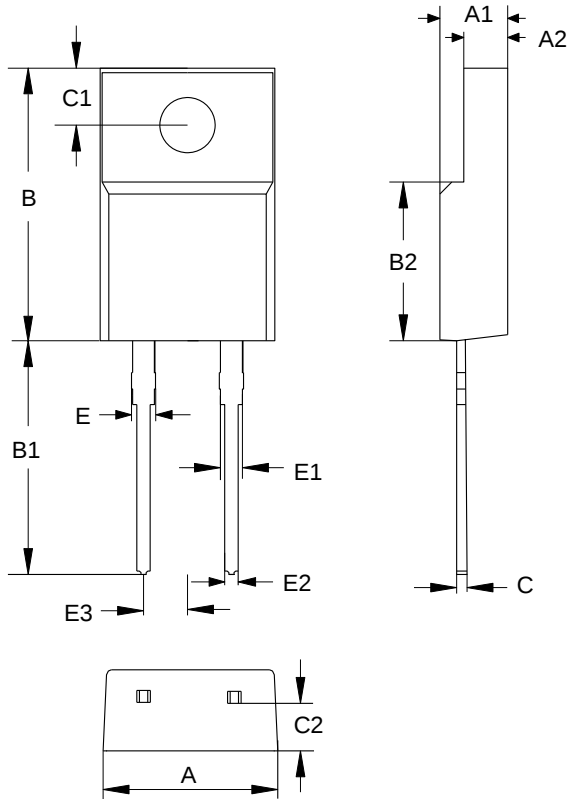
Figure 6. Transient Thermal Impedance

Package Outline Dimensions (TO-220-AC)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	9.800	10.200	0.386	0.402
A1	1.170	1.370	0.046	0.054
A2	4.500	4.700	0.177	0.185
B	14.500	15.500	0.571	0.610
B1	13.200	14.200	0.520	0.559
B2	2.650	2.850	0.104	0.112
B3	8.500	8.900	0.335	0.350
C	2.300	2.900	0.091	0.114
C1	0.300	0.600	0.012	0.024
D	3.700	3.900	0.146	0.154
E	0.680	0.880	0.027	0.035
E1	1.200	1.600	0.047	0.063
E2	1.170	1.370	0.046	0.054
E3	2.440	2.640	0.096	0.104
Z	3°		3°	
Z1	3°		3°	
Z2	7°		7°	
Z3	7°		7°	

Package Outline Dimensions (ITO-220-AC)



Symbol	Dimensions in Millimeters		Dimensions in Inches	
	Min	Max	Min	Max
A	9.900	10.300	0.390	0.406
A1	4.600	4.800	0.181	0.189
A2	2.440	2.640	0.096	0.104
B	15.300	16.300	0.602	0.642
B1	13.050	14.050	0.514	0.553
B2	8.900	9.500	0.350	0.374
C	0.500	0.700	0.020	0.028
C1	3.200	3.400	0.126	0.134
C2	2.150	2.750	0.085	0.108
E	1.150	1.550	0.045	0.061
E1	1.170	1.370	0.046	0.054
E2	0.700	0.900	0.028	0.035
E3	2.440	2.640	0.096	0.104