

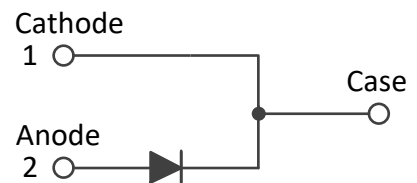
## 60A,1200V Ultrafast Recovery Rectifier

### 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



**TO-247AC**



### Applications

- SMPS
- Inverter
- UPS

### Mechanical Data

- Case: Epoxy, Molded
- Finish: All External Surfaces Corrosion Resistant and Terminal Leads are Readily Solderable
- Lead Temperature for Soldering Purposes: 260°C Max. for 10 sec
- Shipped 30 units per plastic tube

### Maximum Ratings & Electrical Characteristics ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	SMUR60120P	Unit
Maximum repetitive peak reverse voltage	$V_{RRM}$	1200	V
Working peak reverse voltage	$V_{RWM}$	1200	V
Maximum DC blocking voltage	$V_{DC}$	1200	V
Maximum average forward rectified current	$I_{F(AV)}$	60	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	$I_{FSM}$	500	A
Voltage rate of change (rated $V_R$ )	$dv/dt$	10000	V/ $\mu\text{s}$
Operating junction temperature range	$T_J$	-55 to +175	$^{\circ}\text{C}$
Storage temperature range	$T_{STG}$	-55 to +175	$^{\circ}\text{C}$

Electrical Specifications (T <sub>A</sub> =25°C unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage <sup>Note1</sup>	V <sub>F</sub>	I <sub>F</sub> =60A, T <sub>J</sub> =25°C	2.80	3.50	V
		I <sub>F</sub> =60A, T <sub>J</sub> =125°C	-	3.10	
Reverse leakage current @rated V <sub>R</sub> <sup>Note2</sup>	I <sub>R</sub>	T <sub>J</sub> =25°C	-	10	uA
		T <sub>J</sub> =125°C	-	500	
Reverse recovery time	t <sub>rr</sub>	I <sub>F</sub> =0.5A, I <sub>R</sub> =1.0A, I <sub>RR</sub> =0.25A	-	95	ns

Thermal-Mechanical Specifications (T <sub>A</sub> =25°C unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	R <sub>θJC</sub>	0.8	°C /W
Thermal Resistance, Junction to Ambient	R <sub>θJA</sub>	62.5	°C /W

Note:

1. Pulse test with PW=0.3ms, duty cycle=2%
2. Pulse test with PW=30ms

## Ratings and Characteristics Curves

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

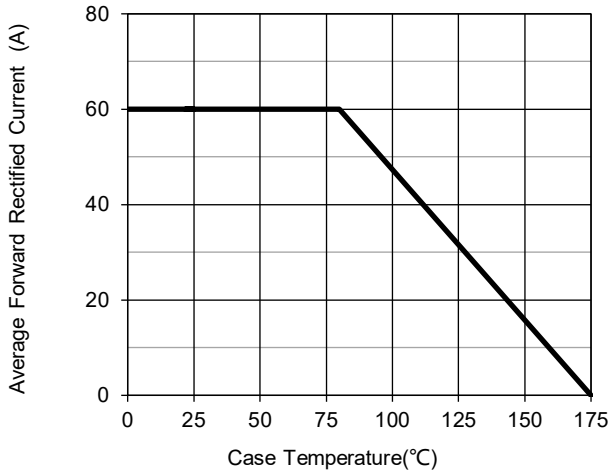


Fig.1 – Forward Current Derating Curve

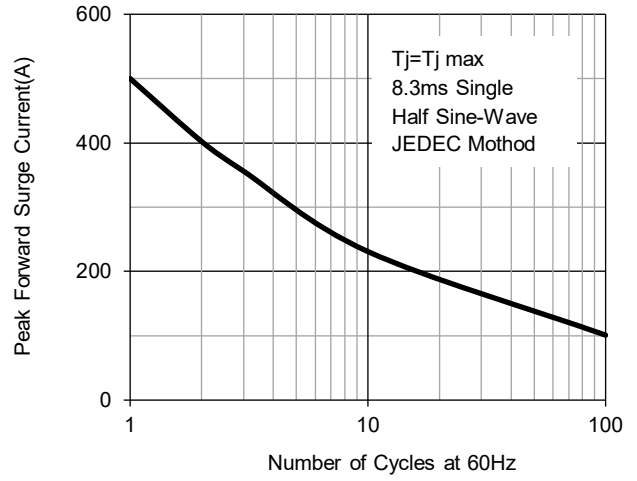


Fig.2 – Maximum Non-Repetitive Surge Current

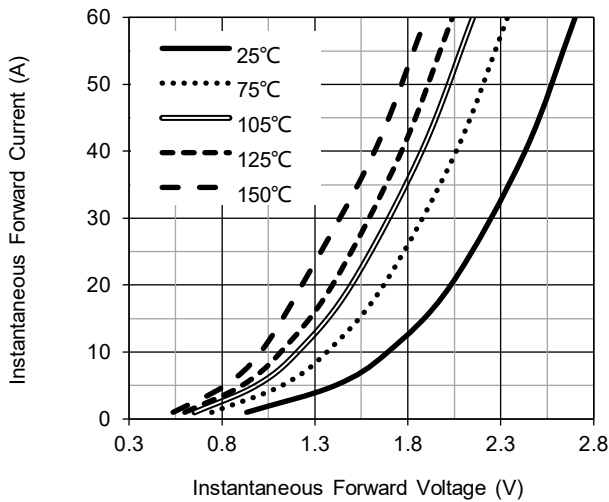


Fig.3 – Typical Forward Voltage Characteristics

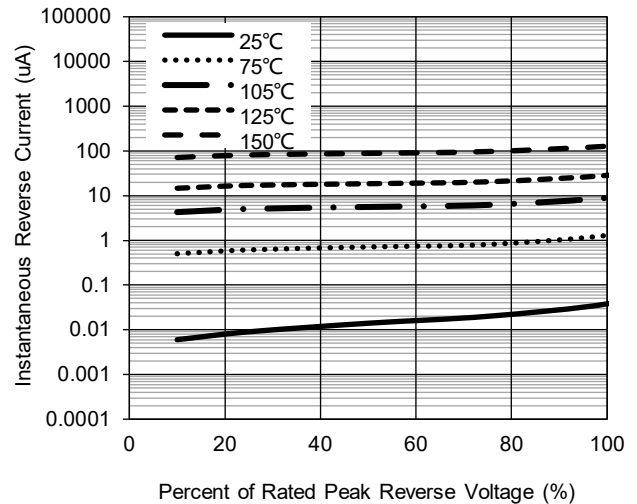


Fig.4 – Typical Reverse Current Characteristics

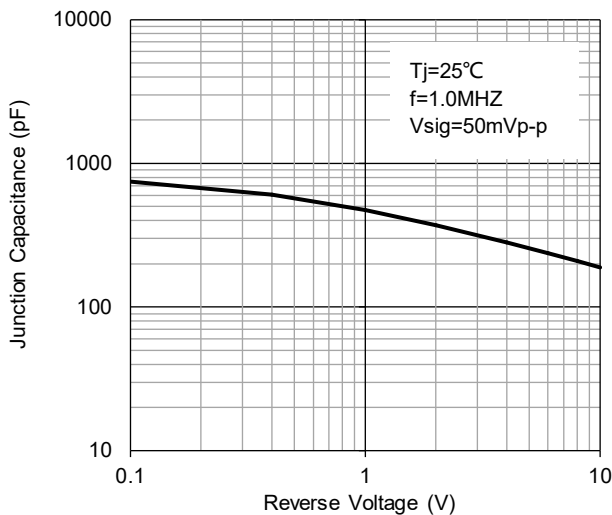
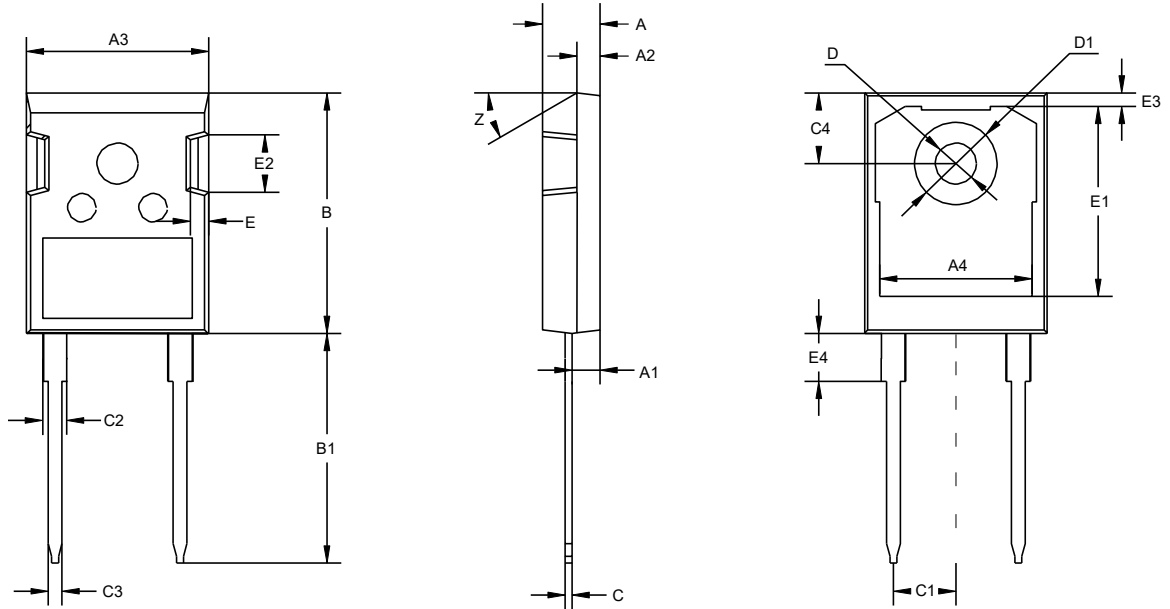


Fig.5 – Typical Junction Capacitance

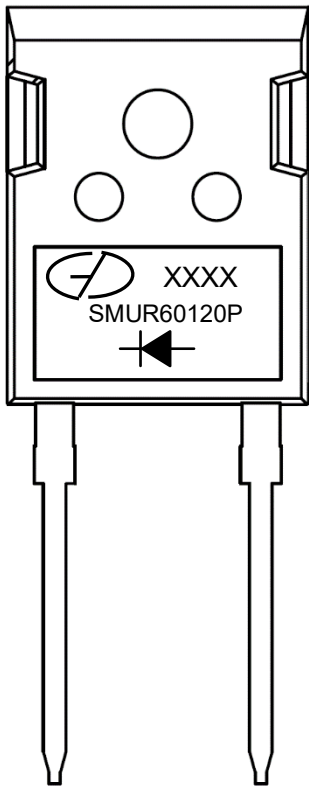
**Package Outline Dimensions** (Unit: millimeters)



**TO-247AC**



TO-247AC							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	4.7	5	5.2	C3	1.1	1.2	1.3
A1	2.3		2.5	C4	6.04	6.15	6.30
A2	1.9	2	2.1	D	3.5	3.6	3.7
A3	15.48	15.88	16.28	D1	7	7.19	7.4
A4	13.06	13.26	13.56	E	1.5	1.6	1.7
B	20.8	20.95	21.1	E1		16.55	
B1	19.8	20	20.32	E2	4.9	5.0	5.1
C	0.5	0.6	0.7	E3	0.95	1.17	1.35
C1	5.34	5.44	5.54	E4		4.17	4.5
C2		2		Z		30°	

## Marking Outline



1. Logo Mark: 
2. Date code: XXXX
3. Part Name: SMUR60120P
4. Polarity : 

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2019.02.10	Released Datasheet
Rev.B	2021.01.19	Modify document format
Rev.C	2022.10.23	Update ratings and characteristics curves

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