

## 8A,1200V Ultrafast Recovery Rectifier

### Features

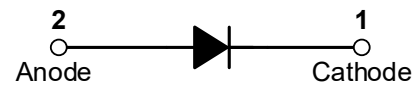
- FRED Wafer Construction
- Low forward drop voltage, low power loss
- High Surge Current Capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-220AC

### 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 50 units per plastic tube

### Maximum Ratings & Electrical Characteristics (T<sub>A</sub>=25°C unless otherwise noted)

Parameter	Symbol	MUR8120	Unit
Maximum repetitive peak reverse voltage	V <sub>RRM</sub>	1200	V
Working peak reverse voltage	V <sub>RWM</sub>	1200	V
Maximum DC blocking voltage	V <sub>DC</sub>	1200	V
Maximum average forward rectified current	I <sub>F(AV)</sub>	8	A
Peak forward surge current, 8.3ms single half sine-wave superimposed on rated load	I <sub>FSM</sub>	80	A
Voltage rate of change (rated V <sub>R</sub> )	dv/dt	10000	V/uS
Operating junction temperature range	T <sub>J</sub>	-55 to +150	°C
Storage temperature range	T <sub>STG</sub>	-55 to +150	°C

<b>Electrical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)					
Parameter	Symbol	Test Conditions	Typ	Max	Unit
Forward drop voltage <sup>(Note1)</sup>	$V_F$	$I_F=8\text{A}, T_J=25^{\circ}\text{C}$	2.00	2.60	V
		$I_F=8\text{A}, T_J=125^{\circ}\text{C}$	-	2.20	
Reverse leakage current @ $V_R$ <sup>(Note2)</sup>	$I_R$	$T_J=25^{\circ}\text{C}$	-	10	$\mu\text{A}$
		$T_J=100^{\circ}\text{C}$	-	500	
Reverse recovery time	$t_{rr}$	$I_F=0.5\text{A},$ $I_R=1.0\text{A}, I_{RR}=0.25\text{A}$	-	50	ns

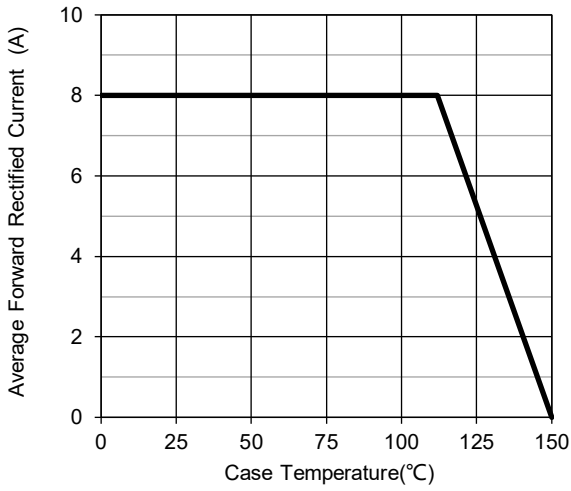
<b>Thermal-Mechanical Specifications</b> ( $T_A=25^{\circ}\text{C}$ unless otherwise noted)			
Parameter	Symbol	Typ	Unit
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.0	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Ambient	$R_{\theta JA}$	62.5	$^{\circ}\text{C}/\text{W}$

Note:

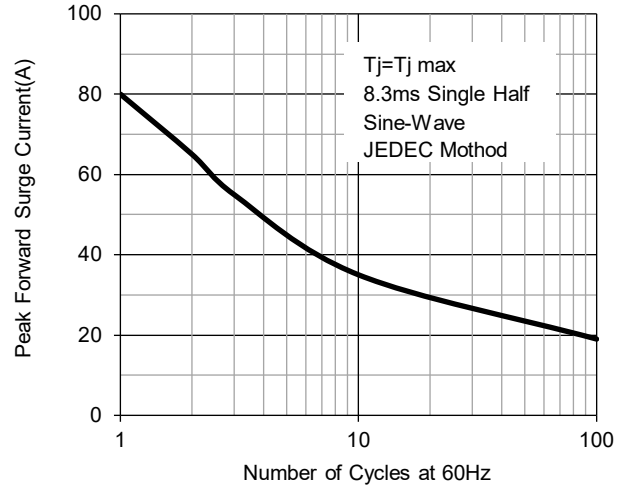
1. Pulse test with  $PW=0.3\text{ms}$ , duty cycle=2%
2. Pulse test with  $PW=30\text{ms}$

## Ratings and Characteristics Curves

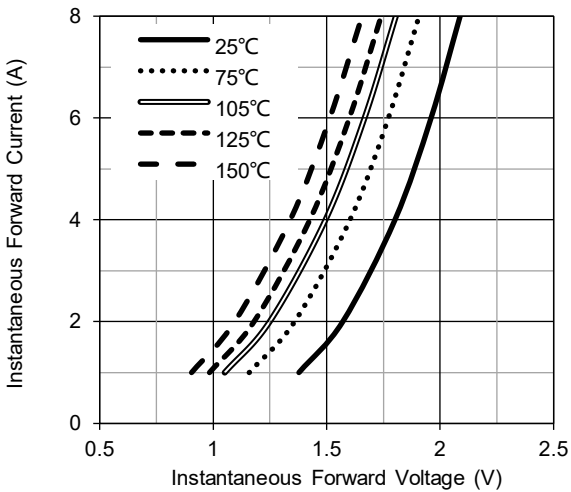
( $T_A = 25^\circ\text{C}$  unless otherwise noted)



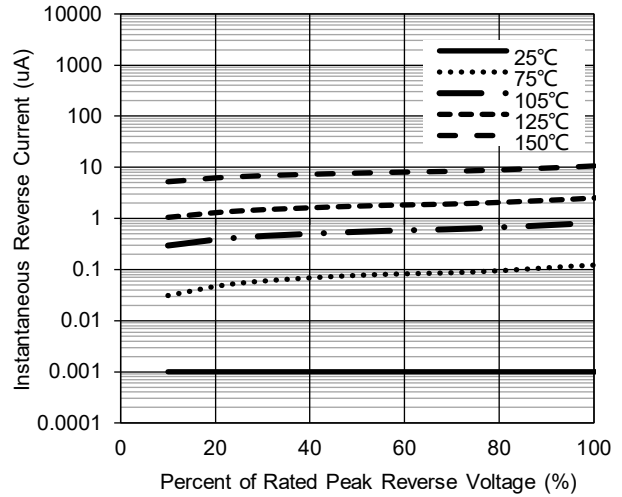
**Fig.1 – Forward Current Derating Curve**



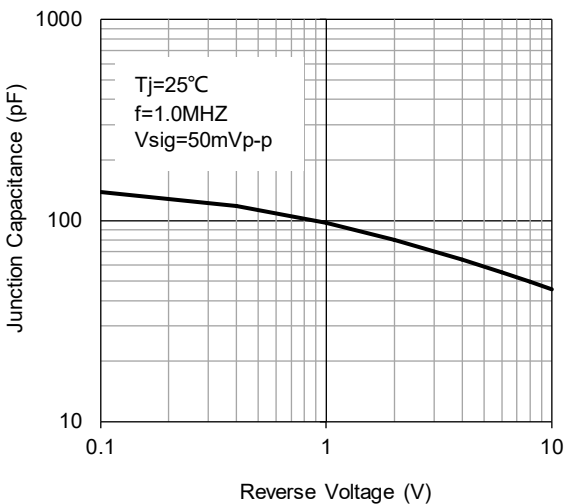
**Fig.2 – Maximum Non-Repetitive Surge Current**



**Fig.3 – Typical Forward Voltage Characteristics**



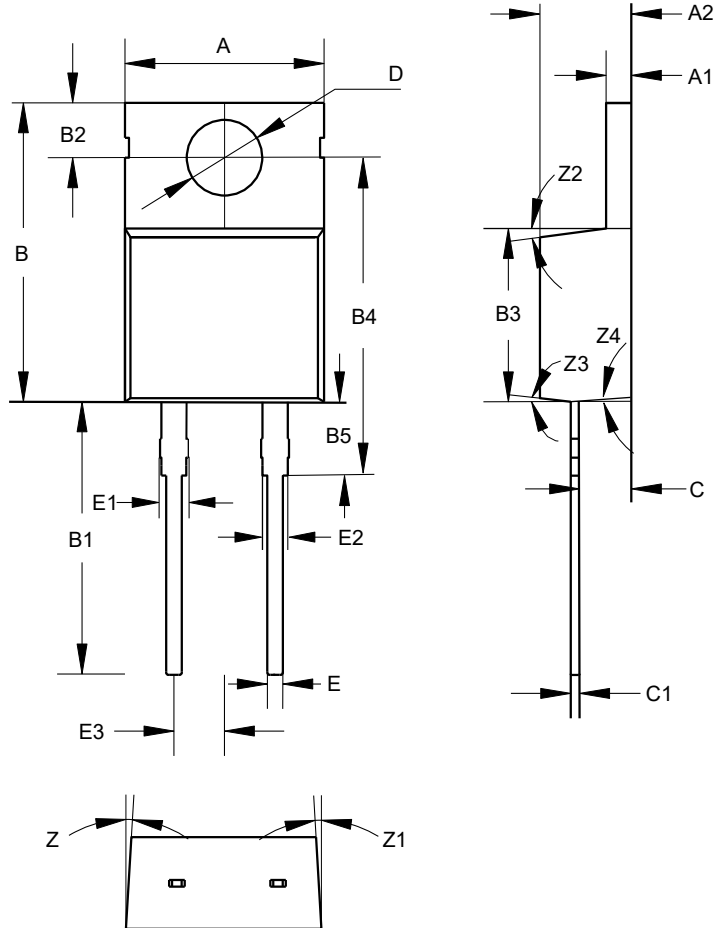
**Fig.4 – Typical Reverse Current Characteristics**



**Fig.5 – Typical Junction Capacitance**

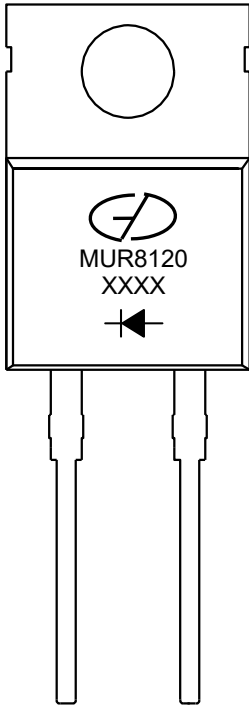
**Package Outline Dimensions** (Unit: millimeters)

**TO-220AC**



TO-220AC							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	9.8	10	10.2	D	3.7	3.8	3.9
A1	1.17	1.27	1.37	E	0.68	0.78	0.88
A2	4.5	4.6	4.7	E1	1.2	1.4	1.6
B	14.5	15	15.5	E2	1.17	1.27	1.37
B1	13.2	13.7	14.2	E3	2.44	2.54	2.64
B2	2.65	2.75	2.85	Z		3°	
B3	8.5	8.7	8.9	Z1		3°	
B4	15.5	16	16.5	Z2		7°	
B5	3.4	3.7	4.0	Z3		7°	
C	2.3	2.6	2.9	Z4		1.5°	
C1	0.28	0.38	0.48				

## Marking Outline



- |    |  |
|----|--|
| 1. | Logo Mark:  |
| 2. | Part Name: MUR8120   |
| 3. | Date Code: XXXX  |
| 4. | Polarity :  |

## Revision History

Document Version	Date of release	Description of changes
Rev.A	2013.12.15	Released Datasheet
Rev.B	2021.01.22	Modify document format
Rev.C	2022.04.28	Update ratings and characteristics curves

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