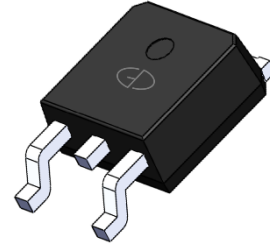


## 8A,1200V Ultrafast Recovery Rectifier

### Features

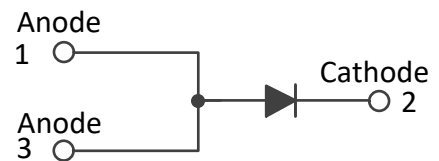
- FRED Wafer Construction
- Low forward drop voltage, low power loss
- High Surge Current Capability
- Plastic package has underwriters Laboratory Flammability Classification 94V-0
- Halogen-free according to IEC 61249-2-21



TO-252 (D-PAK)

### Applications

- SMPS
- Lighting
- 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 2500 units per reel

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

Parameter	Symbol	MURD8120S	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	$R_{\theta JC}$	3.5	$^{\circ}\text{C}/\text{W}$
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)

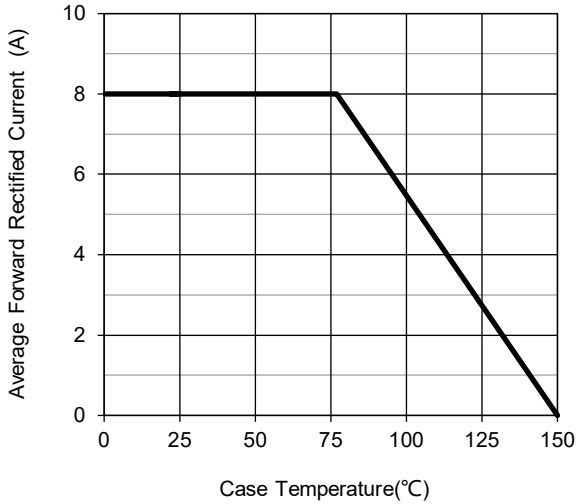


Fig.1 – Forward Current Derating Curve

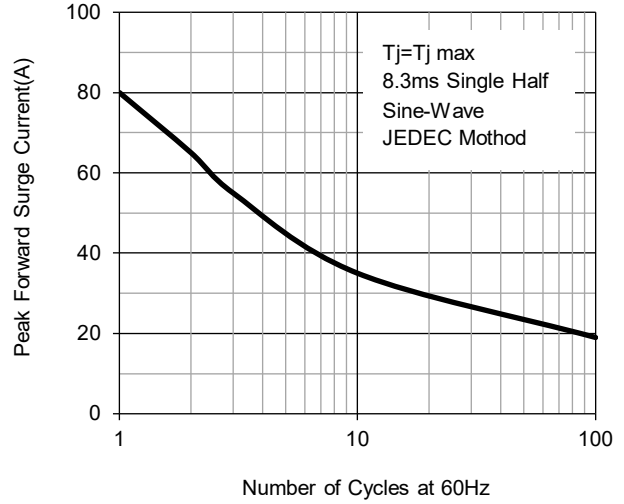


Fig.2 – Maximum Non-Repetitive Surge Current

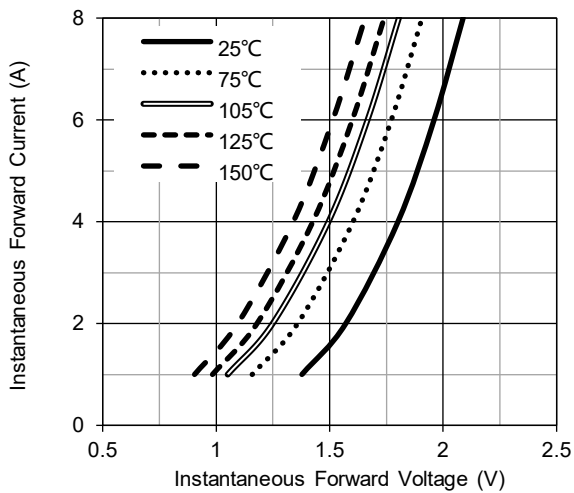


Fig.3 – Typical Forward Voltage Characteristics

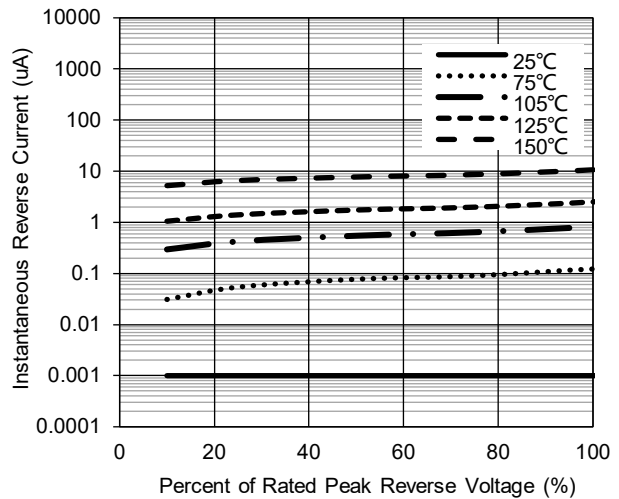


Fig.4 – Typical Reverse Current Characteristics

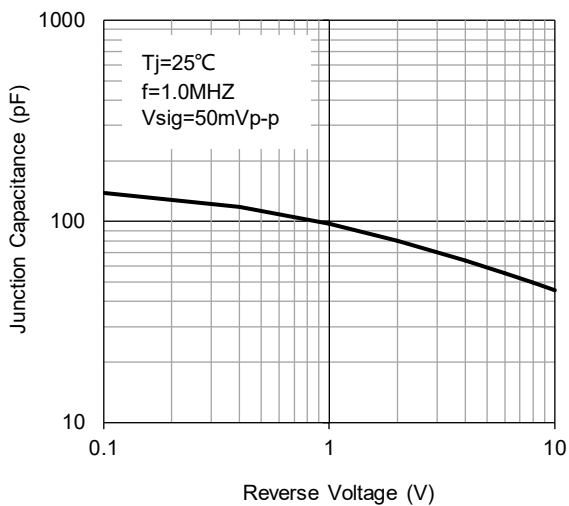
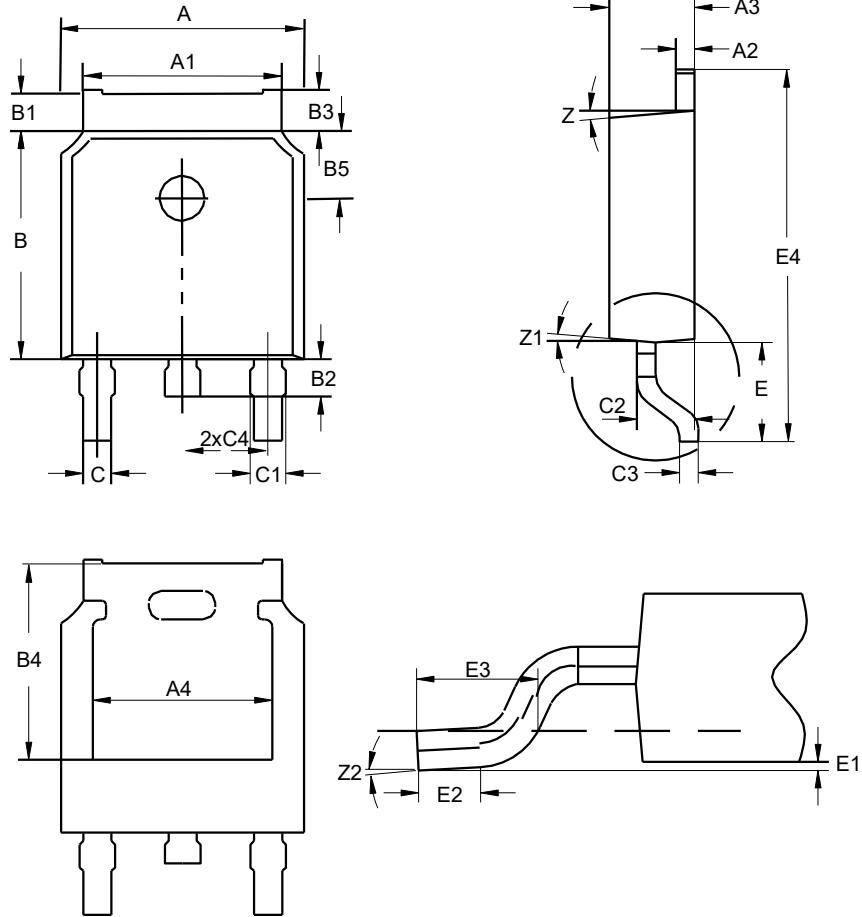


Fig.5 – Typical Junction Capacitance

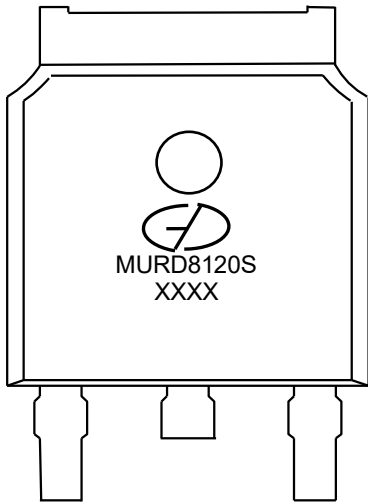
## Package Outline Dimensions (Unit: millimeters)


### TO-252 (D-PAK)



TO-252							
	Min.	Nom.	Max.		Min.	Nom.	Max.
A	6.34	6.54	6.74	C1	0.65	0.85	1.05
A1	5.1	5.3	5.5	C2	1.34	1.54	1.74
A2	0.4	0.5	0.6	C3	0.4	0.5	0.6
A3	2.08	2.28	2.48	C4	2.09	2.29	2.49
A4	4.6	4.8	5.0	E	2.6	2.9	3.2
B	5.8	6.1	6.4	E1	0		0.15
B1	0.82	1.02	1.22	E2	0.7		
B2	0.8	1	1.2	E3	1.3	1.6	1.9
B3	0.9	1.1	1.3	E4	9.8	10.1	10.4
B4	5.05	5.25	5.45	Z		7°	
B5	7.83	8.03	8.23	Z1		7°	
C	0.56	0.76	0.96	Z2	0°		10°

**Marking Outline**



1. Logo Mark: 
2. Part Name: MURD8120S
3. Date Code: XXXX

**Revision History**

Document Version	Date of release	Description of changes
Rev.A	2022.12.28	Released Datasheet

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