



**RoHS**  
COMPLIANCE



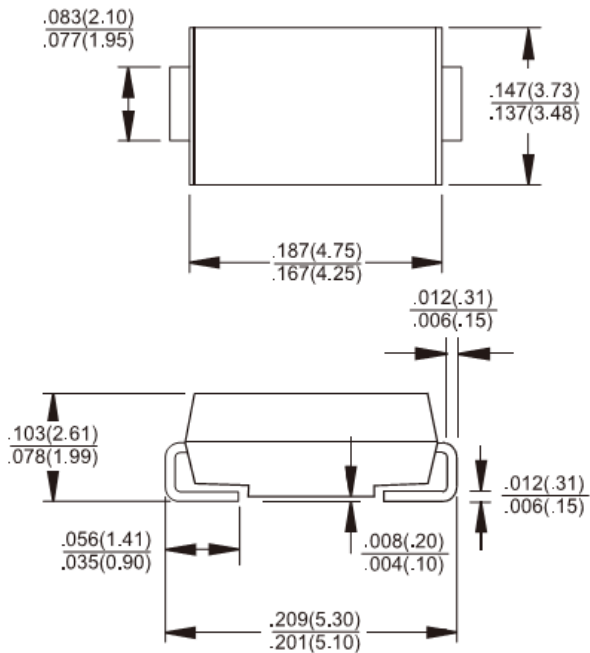
## MUR105S - MUR160S

### 1.0 AMP. Surface Mount Ultrafast Power Rectifiers

#### SMB/DO-214AA

### Features

- ✧ For surface mounted application
- ✧ Easy pick and place
- ✧ Glass passivated junction chip
- ✧ Low profile package
- ✧ Built-in strain relief
- ✧ Qualified as per AEC-Q101
- ✧ Hideal for automated placement
- ✧ Ultrafast recovery time for high efficiency
- ✧ Low forward voltage, low power loss
- ✧ High temperature soldering guaranteed:  
260°C/10 seconds on terminals
- ✧ Plastic material used carriers Underwriters  
Laboratory Classification 94V-0
- ✧ Epitaxial construction
- ✧ Green compound with suffix "G" on packing  
code & prefix "G" on datecode



### Mechanical Data

- ✧ Case: SMB/DO-214AA
- ✧ Molding Compound meet UL 94V-0 flammability rating
- ✧ Terminals: Pure tin plated, leads free, solderable  
per MIL-STD-750, Method 2026
- ✧ Polarity: Indicated by cathode band
- ✧ Weight:0.097 grams

### Dimensions in inches and (millimeters)

#### Marking Diagram



- MUR1XXS = Specific Device Code
- G = Green Compound
- Y = Year
- M = Work Month

### Maximum Ratings and Electrical Characteristics

Rating at 25 °C ambient temperature unless otherwise specified.

Single phase, half wave, 60 Hz, resistive or inductive load.

For capacitive load, derate current by 20%

| Type Number  | Symbol          | MUR 105S       | MUR 110S | MUR 115S | MUR 120S | MUR 140S     | MUR 160S | Units                          |
|--|-----------------|----------------|----------|----------|----------|--------------|----------|--------------------------------|
| Maximum Repetitive Peak Reverse Voltage  | $V_{RRM}$       | 50             | 100      | 150      | 200      | 400          | 600      | V                              |
| Maximum RMS Voltage  | $V_{RMS}$       | 35             | 70       | 105      | 140      | 280          | 420      | V                              |
| Maximum DC Blocking Voltage  | $V_{DC}$        | 50             | 100      | 150      | 200      | 400          | 600      | V                              |
| Maximum Average Forward Rectified Current  | $I_{F(AV)}$     | 1.0            |          |          |          |              |          | A                              |
| Peak Forward Surge Current, 8.3 ms Single Half Sine-wave Superimposed on Rated Load (JEDEC method )              | $I_{FSM}$       | 40             |          |          |          | 35           |          | A                              |
| Maximum Instantaneous Forward Voltage (Note 1) @ 1.0A<br>@ $T_A=25^\circ\text{C}$<br>@ $T_A=150^\circ\text{C}$   | $V_F$           | 0.875<br>0.710 |          |          |          | 1.25<br>1.05 |          | V                              |
| Maximum DC Reverse Current at Rated DC Blocking Voltage<br>@ $T_A=25^\circ\text{C}$<br>@ $T_A=150^\circ\text{C}$ | $I_R$           | 2<br>50        |          |          |          | 5<br>150     |          | $\mu\text{A}$<br>$\mu\text{A}$ |
| Maximum Reverse Recovery Time (Note 2)   | $T_{rr}$        | 25             |          |          |          | 50           |          | ns                             |
| Maximum Reverse Recovery Time (Note 3)   | $T_{rr}$        | 35             |          |          |          | 75           |          | ns                             |
| Typical Thermal Resistance (Note 4)  | $R_{\theta JL}$ | 17             |          |          |          |              |          | $^\circ\text{C/W}$             |
| Operating Temperature Range  | $T_J$           | -65 to + 175   |          |          |          |              |          | $^\circ\text{C}$               |
| Storage Temperature Range  | $T_{STG}$       | -65 to + 175   |          |          |          |              |          | $^\circ\text{C}$               |

Note 1: Pulse Test with PW=300usec, 1% Duty Cycle

Note 2: Reverse Recovery Test Condition: $I_F=0.5\text{A}$ ,  $I_R=1.0\text{A}$ ,  $I_{RR}=0.25\text{A}$

Note 3: Reverse Recovery Test Condition: $I_F=1\text{A}$ ,  $di/dt=50\text{A/us}$ ,  $V_R=30\text{V}$ ,  $I_{RR}=10\%$  IRM

Note 4: Mount on Cu-Pad Size 10mm x 10mm x 1.6mm on P.C.B.

## RATINGS AND CHARACTERISTIC CURVES (MUR105S THRU MUR160S)

FIG. 1 MAXIMUM FORWARD CURRENT DERATING CURVE

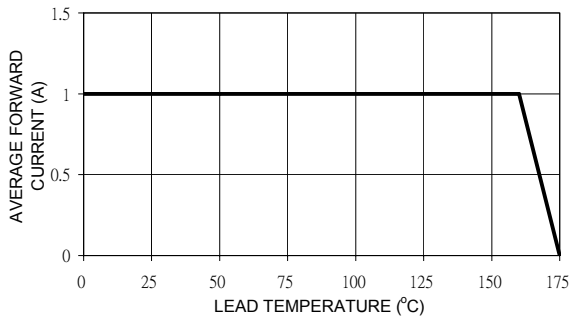


FIG. 2 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

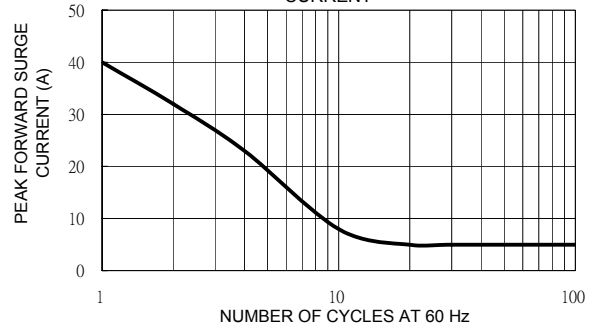


FIG. 3 TYPICAL FORWARD CHARACTERISTICS

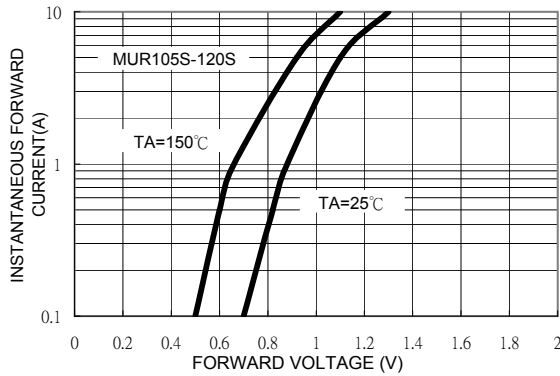


FIG. 4 TYPICAL FORWARD CHARACTERISTICS

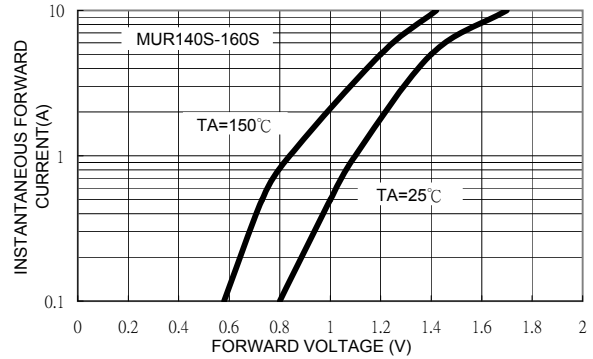


FIG. 5 TYPICAL REVERSE CHARACTERISTICS

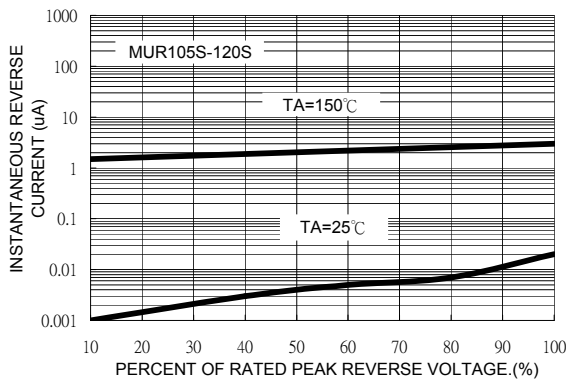


FIG. 6 TYPICAL REVERSE CHARACTERISTICS

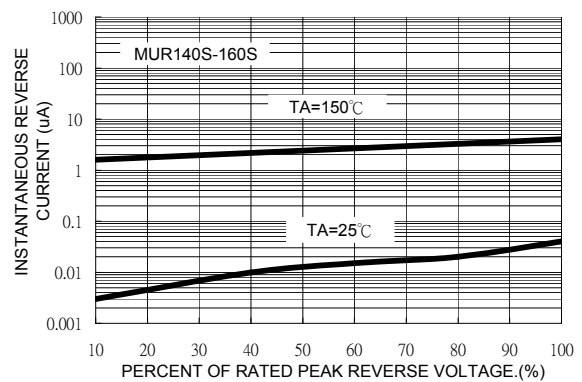


FIG. 7 TYPICAL JUNCTION CAPACITANCE

