

## Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Surge Overload Rating to 35A Peak
- Ideally Suited for Automated Assembly
- **Lead Free Finish/RoHS Compliant (Note 1)**
- **Green Molding Compound (No Halogen and Antimony) (Note 2)**

## Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208 <sup>(3)</sup>
- Lead Free Plating (Matte Tin Finish).
- Polarity: Cathode Band or Cathode Notch
- Marking Information: See Page 3
- Ordering Information: See Page 3
- Weight: 0.093 grams (approximate)

Top View

Bottom View

## Maximum Ratings @T<sub>A</sub> = 25°C unless otherwise specified

Single phase, half wave, 60Hz, resistive or inductive load.  
For capacitance load, derate current by 20%.

Characteristic	Symbol	MURS140	MURS160	Unit
Peak Repetitive Reverse Voltage	V <sub>RRM</sub>	400	600	V
Working Peak Reverse Voltage	V <sub>RWM</sub>			
DC Blocking Voltage (Note 7)	V <sub>R</sub>			
RMS Reverse Voltage	V <sub>R(RMS)</sub>	283	424	V
Average Rectified Output Current @ T <sub>T</sub> = 135°C	I <sub>O</sub>	1.0		A
Non-Repetitive Peak Forward Surge Current 8.3ms Single Half Sine-Wave Superimposed on Rated Load	I <sub>FSM</sub>	35		A

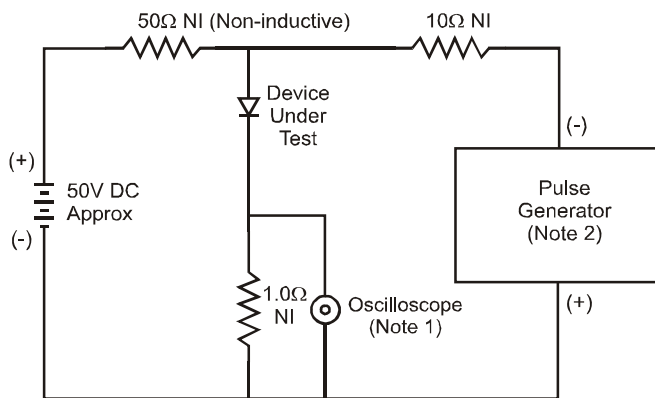
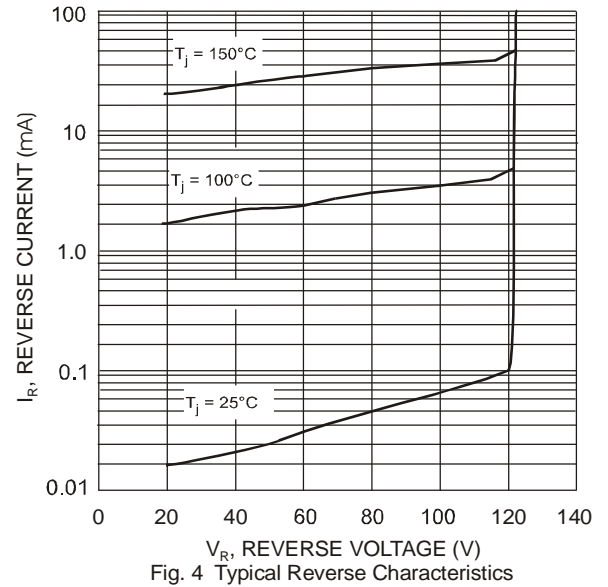
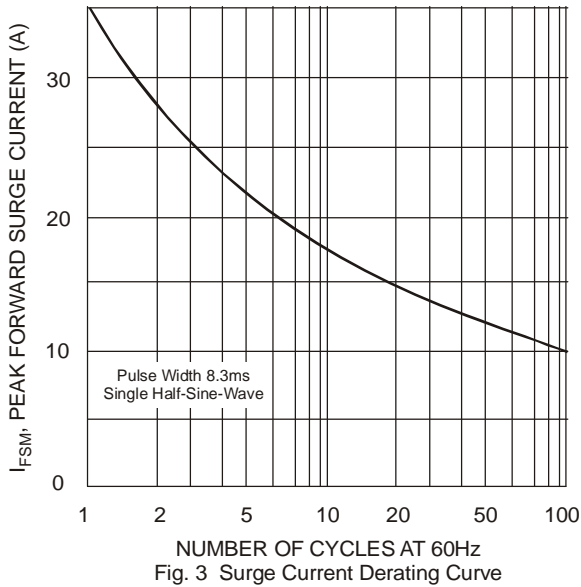
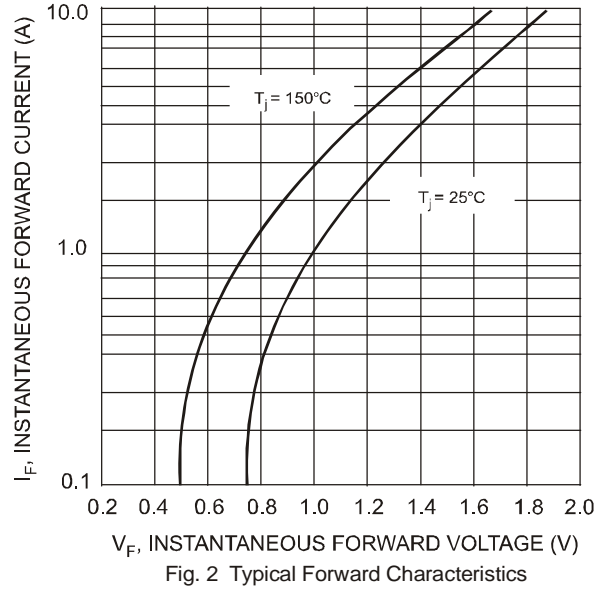
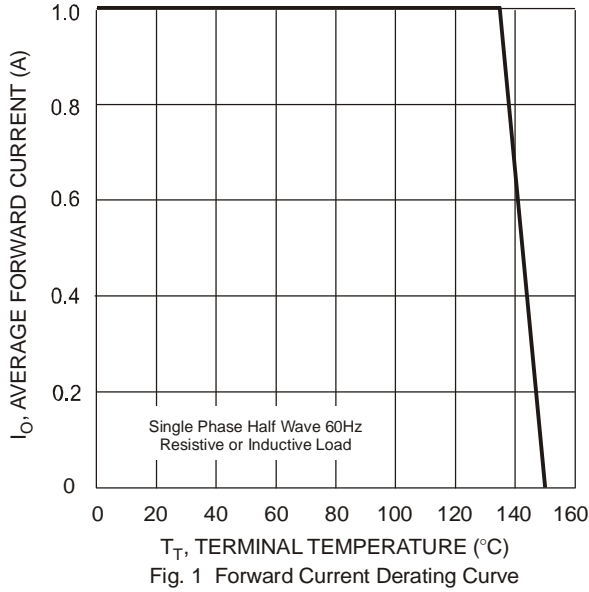
## Thermal Characteristics

Characteristic	Symbol	Value	Unit
Typical Thermal Resistance, Junction to Terminal (Note 3)	R <sub>θJT</sub>	15	°C/W
Operating Temperature Range	T <sub>J</sub>	-55 to +150	°C
Storage Temperature Range	T <sub>STG</sub>	-55 to +175	°C

## Electrical Characteristics @T<sub>A</sub> = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Forward Voltage @ I <sub>F</sub> = 1.0A, T <sub>J</sub> = 25°C @ I <sub>F</sub> = 1.0A, T <sub>J</sub> = 150°C	V <sub>FM</sub>	1.25 1.05	V
Peak Reverse Current @ T <sub>A</sub> = 25°C at Rated DC Blocking Voltage (Note 7) @ T <sub>A</sub> = 150°C	I <sub>RM</sub>	5.0 150	μA
Reverse Recovery Time (Note 5)	t <sub>rr</sub>	50	ns
Forward Recovery Time (Note 6)	t <sub>fr</sub>	50	ns
Typical Total Capacitance (Note 4)	C <sub>T</sub>	10	pF

- Notes:
1. EU Directive 2002/95/EC (RoHS). All applicable RoHS exemptions applied, see EU Directive 2002/95/EC Annex Notes.
  2. Product manufactured with Data Code 0924 (week 24, 2009) and newer are built with Green Molding Compound.
  3. Unit mounted on PC board with 5.0 mm<sup>2</sup> (0.013 mm thick) copper pads as heat sink.
  4. Measured at 1.0MHz and applied reverse voltage of 4V DC.
  5. Measured with I<sub>F</sub> = 0.5A, I<sub>R</sub> = 1.0A, I<sub>rr</sub> = 0.25A. See Figure 5.
  6. Measured with I<sub>F</sub> = 1.0A, di/dt = 100A/μs, Duty Cycle ≤ 2.0%.
  7. Short duration pulse test used to minimize self-heating effect.



- Notes:
1. Rise Time = 7.0ns max. Input Impedance = 1.0MΩ, 22pF.
  2. Rise Time = 10ns max. Input Impedance = 50Ω.

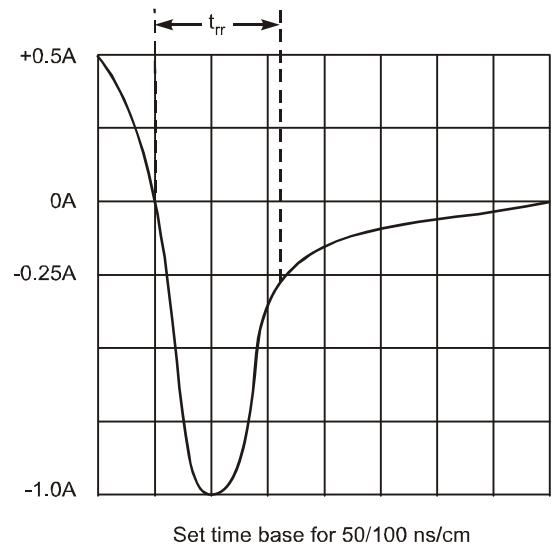


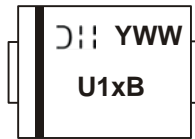
Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

### Ordering Information (Note 8)

Part Number	Case	Packaging
MURS140-13-F	SMB	3000/Tape & Reel
MURS160-13-F	SMB	3000/Tape & Reel

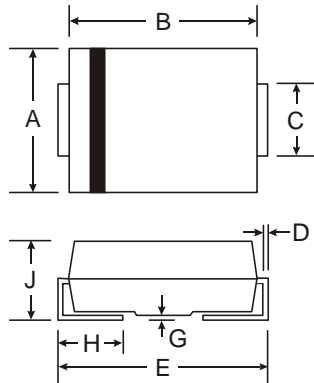
Notes: 8. For packaging details, go to our website at <http://www.diodes.com>.

### Marking Information



U1xB = Product type marking code  
 U1GB = MURS140  
 U1JB = MURS160  
 ☺ = Manufacturers' code marking  
 YWW = Date code marking  
 Y = Last digit of year (ex: 2 for 2002)  
 WW = Week code (01 to 53)

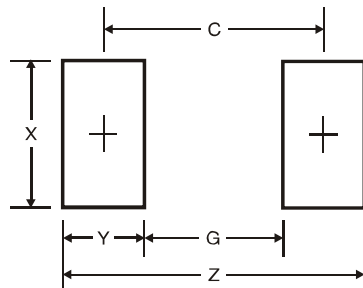
### Package Outline Dimensions



SMB		
Dim	Min	Max
A	3.30	3.94
B	4.06	4.57
C	1.96	2.21
D	0.15	0.31
E	5.00	5.59
G	0.05	0.20
H	0.76	1.52
J	2.00	2.50

All Dimensions in mm

### Suggested Pad Layout



SMB Dimensions	Value (in mm)
Z	6.7
G	1.8
X	2.3
Y	2.5
C	4.3

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