MURS140 - MURS160

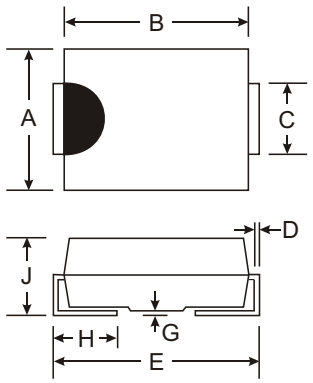
1.0A SURFACE MOUNT SUPER-FAST RECTIFIER

Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 35A Peak
- Ideally Suited for Automated Assembly
- **Available in Lead Free Finish/RoHS Compliant Version (Note 5)**

Mechanical Data

- Case: SMB
- Case Material: Molded Plastic. UL Flammability Classification Rating 94V-0
- Moisture Sensitivity: Level 1 per J-STD-020C
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Also available in Lead Free Plating (Matte Tin Finish). Please see Ordering Information, Note 7, on Page 3
- Marking: MURS140: U1GB
  MURS160: U1JB
- Polarity: Cathode Band or Cathode Notch
- Ordering Information: See Page 3
- Weight: 0.093 grams (approximate)



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	0.10	0.20
H	0.76	1.52
J	2.00	2.62
All Dimensions in mm		

Maximum Ratings and Electrical Characteristics @ T_A = 25°C unless otherwise specified

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

Characteristic	Symbol	MURS140	MURS160	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage	V_{RRM} V_{RWM} V_R	400	600	V
RMS Reverse Voltage	$V_{R(RMS)}$	283	424	V
Average Rectified Output Current @ T_T = 150°C @ T_T = 125°C	I_O	1.0 2.0		A
Non-Repetitive Peak Forward Surge Current 8.3ms Single half sine-wave Superimposed on Rated Load (JEDEC Method)	I_{FSM}	35		A
Forward Voltage @ I_F = 1.0A, T_J = 25°C @ I_F = 1.0A, T_J = 150°C	V_{FM}	1.25 1.05		V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 150°C	I_{RM}	5.0 150		μA
Reverse Recovery Time (Note 3)	t_{rr}	50		ns
Forward Recovery Time (Note 4)	t_{fr}	50		ns
Typical Junction Capacitance (Note 2)	C_j	45		pF
Typical Thermal Resistance, Junction to Terminal (Note 1)	$R_{\theta JT}$	13		K/W
Operating and Storage Temperature Range	T_j, T_{STG}	-65 to +175		°C

Notes:
1. Unit mounted on PC board with 5.0 mm^2 (0.013 mm thick) copper pads as heat sink.
2. Measured at 1.0MHz and applied reverse voltage of 0V DC.
3. Measured with I_F = 0.5A, I_R = 1.0A, I_{rr} = 0.25A. See Figure 5.
4. Measured with I_F = 1.0A, di/dt = 100A/μs, Duty Cycle ≤ 2.0%.
5. RoHS revision 13.2.2003. Glass and High Temperature Solder Exemptions Applied, see *EU Directive Annex Notes 5 and 7.*

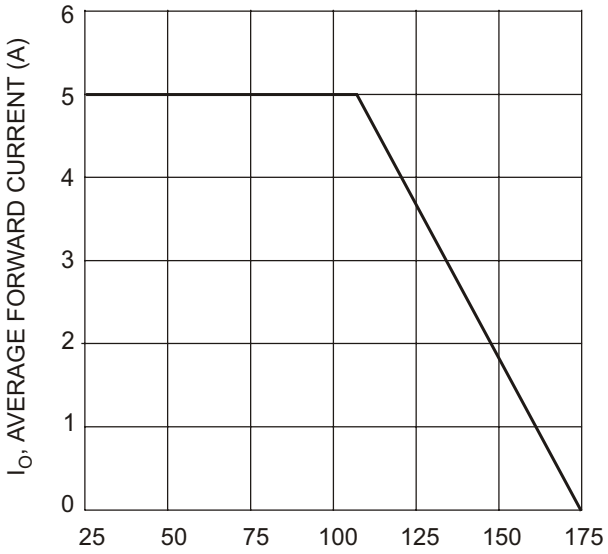


Fig. 1 Forward Current Derating Curve

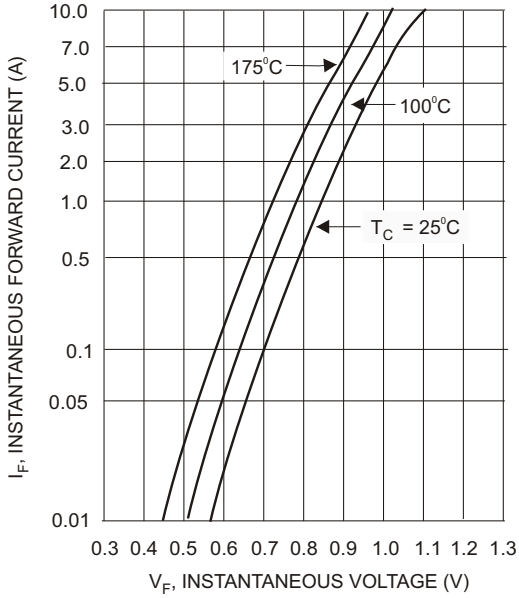


Fig. 2 Typical Forward Current

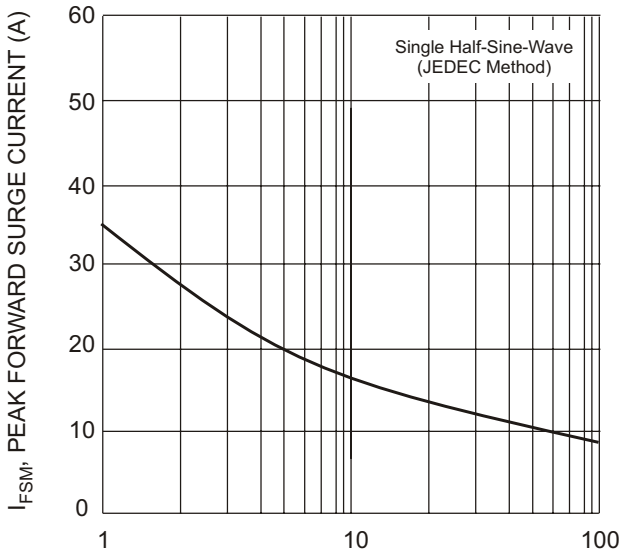


Fig. 3 Surge Current Derating Curve

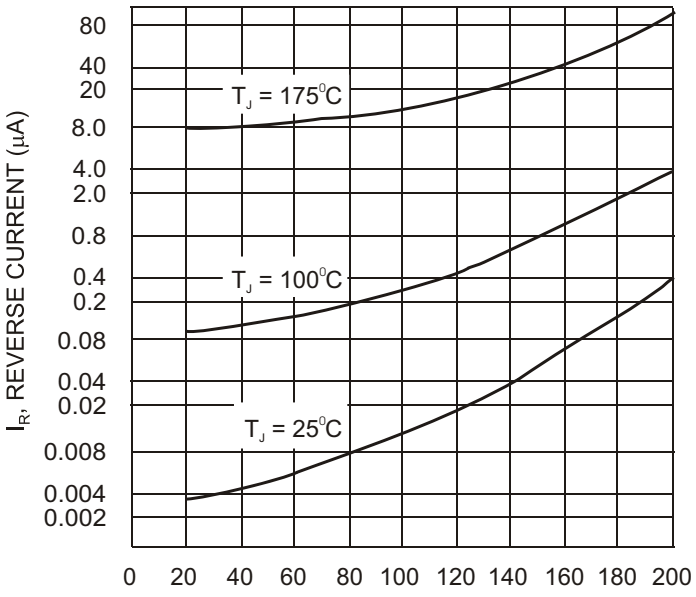
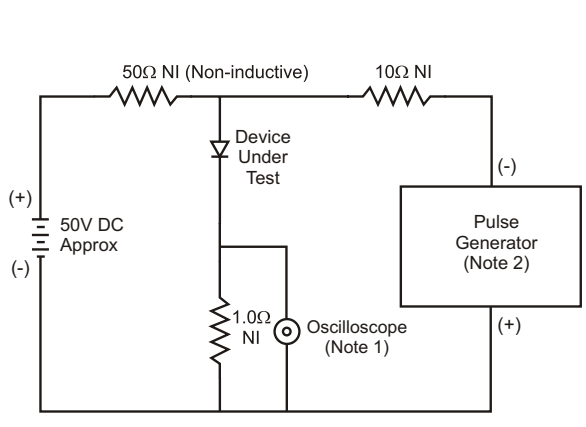


Fig. 4 Typical Reverse Current



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

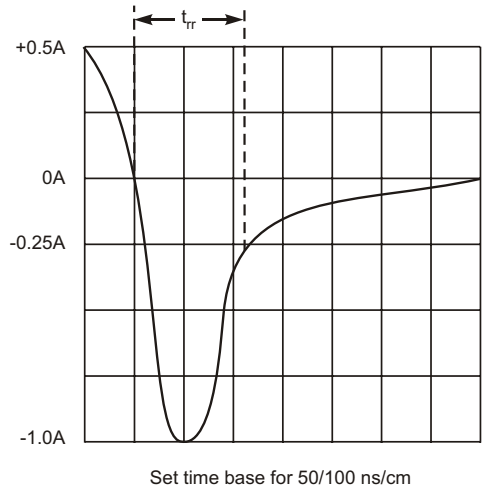


Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

Ordering Information (Note 6)

Device	Packaging	Shipping
MURS140-13 MURS160-13	SMB SMB	5000/Tape & Reel

Notes: 6. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.
7. For Lead Free Finish/RoHS Compliant version part numbers, please add "-F" suffix to the part numbers above. Example: MURS140-13-F

Marking Information

XXXX = Product type marking code (See Page 1)
= Manufacturers' code marking
YWW = Date code marking
Y = Last digit of year ex: 2 for 2002
WW = Week code 01 to 52