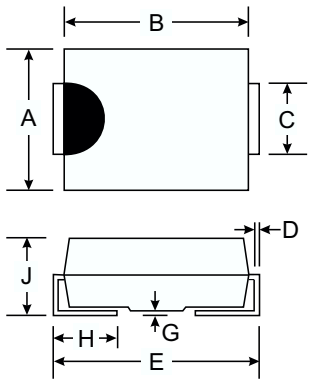
MURS120

1.0A SURFACE MOUNT SUPER-FAST RECTIFIER

NEW PRODUCT

Features

- Glass Passivated Die Construction
- Super-Fast Recovery Time For High Efficiency
- Low Forward Voltage Drop and High Current Capability
- Surge Overload Rating to 40A Peak
- Ideally Suited for Automated Assembly
- Plastic Material: UL Flammability Classification Rating 94V-0



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		

Mechanical Data

- Case: Molded Plastic
- Terminals: Solder Plated Terminal - Solderable per MIL-STD-202, Method 208
- Marking: U1DB
- Polarity: Cathode Band or Cathode Notch
- Weight: 0.093 grams (approx.)
- Mounting Position: Any
- Ordering Information: See Page 3

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	MURS120	Unit
Peak Repetitive Reverse Voltage Working Peak Reverse Voltage DC Blocking Voltage @ I_R = 5uA	V_{RRM} V_{RWM} V_R	200	V
RMS Reverse Voltage	$V_{R(RMS)}$	141	V
Average Rectified Output Current @ T_T = 155°C @ T_T = 145°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}	40	A
Forward Voltage @ I_F = 1.0A, T_J = 25°C @ I_F = 1.0A, T_J = 150°C	V_{FM}	0.875 0.710	V
Peak Reverse Current @ T_A = 25°C at Rated DC Blocking Voltage @ T_A = 150°C	I_{RM}	2.0 50	μA
Reverse Recovery Time (Note 3)	t_{rr}	25	ns
Forward Recovery Time (Note 4)	t_{fr}	25	ns
Typical Junction Capacitance (Note 2)	C_j	60	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%.

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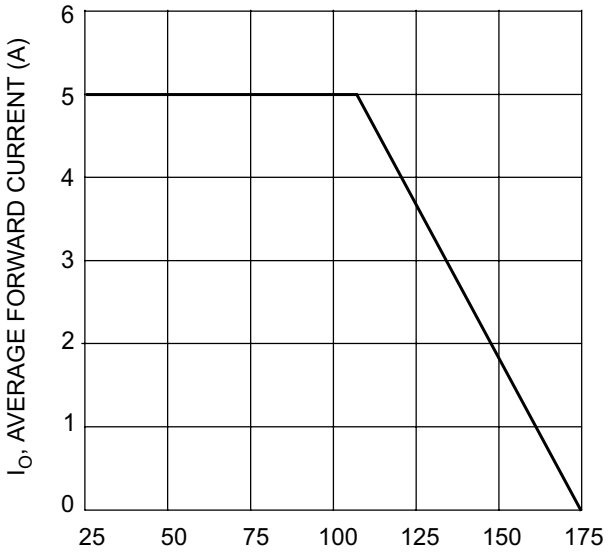


Fig. 1 Forward Current Derating Curve

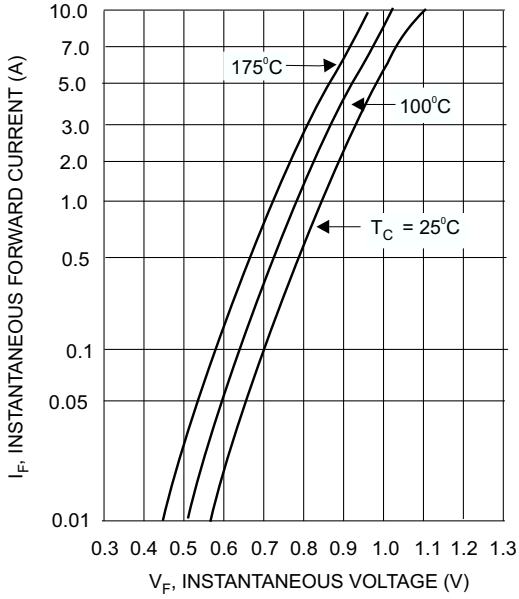


Fig. 2 Typical Forward Current

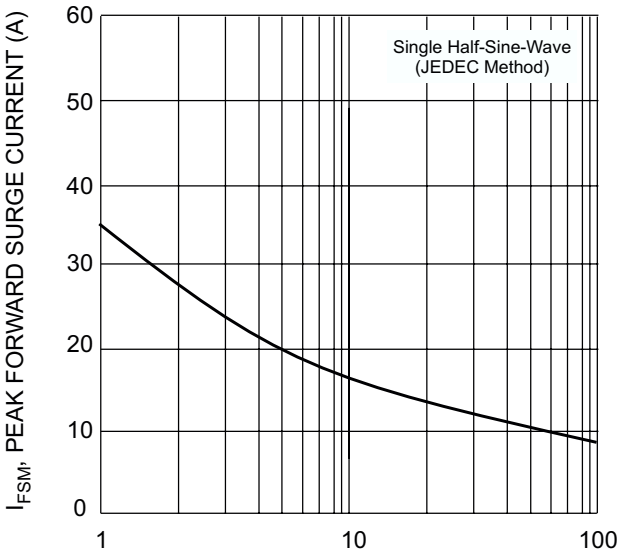


Fig. 3 Surge Current Derating Curve

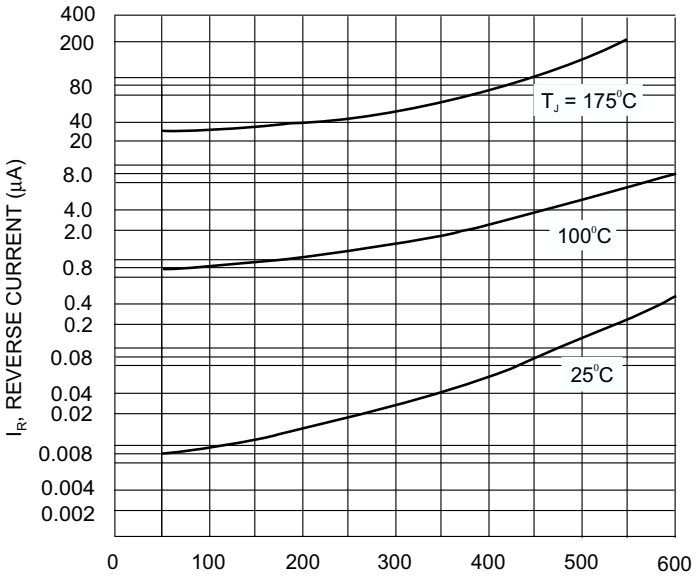
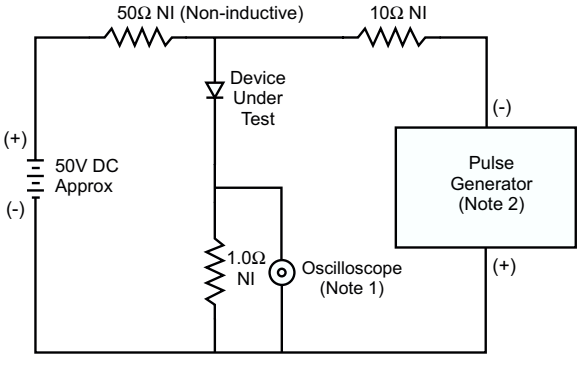
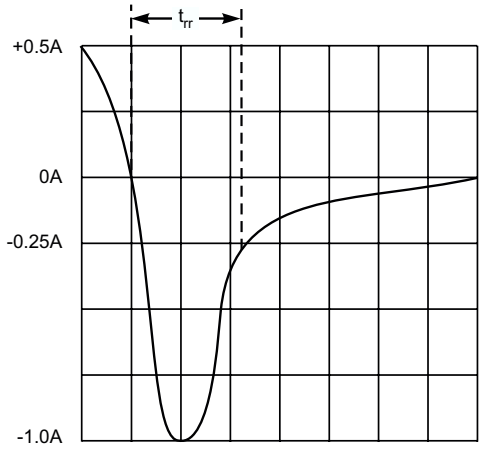


Fig. 4 Typical Reverse Current



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



Set time base for 50/100 ns/cm

Fig. 5 Reverse Recovery Time Characteristic and Test Circuit

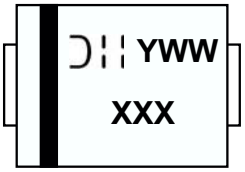
NEW PRODUCT

Ordering Information (Note 5)

Device	Packaging	Shipping
MURS120-13	SMB	5000/Tape & Reel

Notes: 5. For Packaging Details, go to our website at http://www.diodes.com/datasheets/ap02007.pdf.

Marking Information



XXX = 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