RECTRON SEMICONDUCTOR
TECHNICAL SPECIFICATION

FM4001W THRU FM4007W

SURFACE MOUNT SILICON RECTIFIER
VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

FEATURES
* Ideal for surface mounted applications
* Low leakage current
* Metallurgically bonded construction
* Mounting position: Any
* Weight: 0.078 gram

MECHANICAL DATA
* Epoxy : Device has UL flammability classification 94V-0

SMX

.209 (5.31)
.185 (4.70)

.110 (2.79)
.086 (2.18)

.071 (1.80)
.051 (1.30)

.011 (0.28)
.007 (0.18)

.091 (2.31)
.067 (1.70)

.010 (0.25)
.008 (0.20)

.180 (4.57)
.160 (4.06)

.059 (1.50)
.035 (0.89)

Dimensions in inches and (millimeters)

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25°C ambient temperature unless otherwise specfied.
Resistive or inductive load.
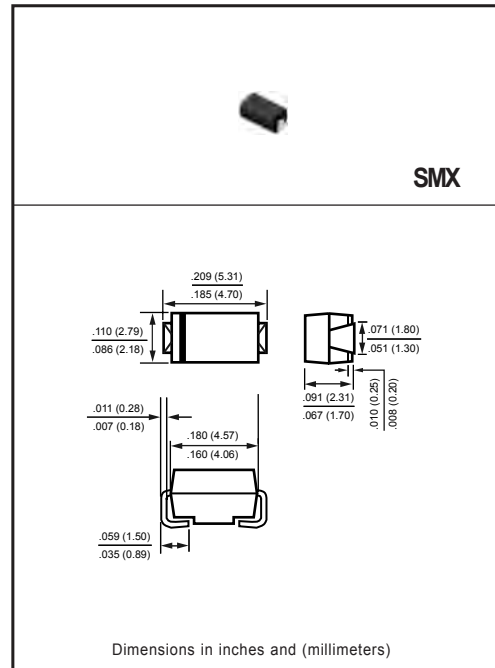
MAXIMUM RATINGS (@ T_A=25 °C unless otherwise noted)

RATINGS	SYMBOL	FM4001W	FM4002W	FM4003W	FM4004W	FM4005W	FM4006W	FM4007W	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at Ambient Temperature	I_O				1.0				Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}				30				Amps
Typical Current Square Time	I^2T				3.7				A^2S
Typical Thermal Resistance (Note 1)	$R_{\theta JA}$				80				°C/W
Typical Thermal Resistance (Note 1)	$R_{\theta JL}$				30				°C/W
Typical Junction Capacitance (Note 2)	C_J				15				pF
Operating Temperature Range	T_J				150				°C
Storage Temperature Range	T_{STG}				-55 to + 150				°C

ELECTRICAL CHARACTERISTICS (@T_A=25 °C unless otherwise noted)

CHARACTERISTICS		SYMBOL	FM4001W	FM4002W	FM4003W	FM4004W	FM4005W	FM4006W	FM4007W	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC		V_F				1.1				Volts
Maximum Full Load Reverse Current, Full cycle Average at T_A=75°C						30				uA
Maximum Average Reverse Current	@T_A = 25°C	I_R				5.0				uA
at Rated DC Blocking Voltage	@T_A = 100°C					100				uA

NOTES : 1. Thermal Resistance :Mounted on PCB.
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. "Fully ROHS compliant","100% Sn plating (Pb-free)".

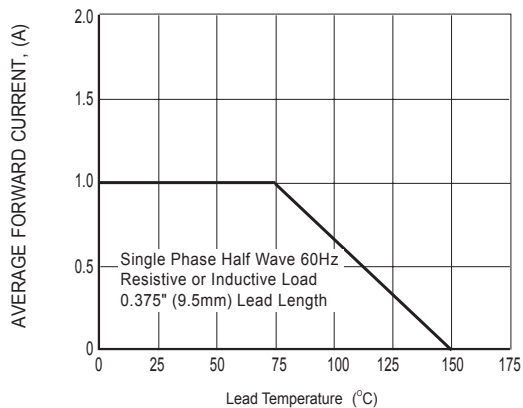2009-08
REV: B

RATING AND CHARACTERISTICS CURVES (FM4001W THRU FM4007W)
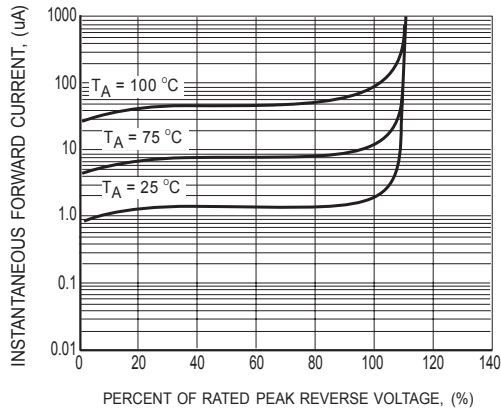

FIG.1 TYPICAL FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT, (A) vs Lead Temperature (°C)

Single Phase Half Wave 60Hz
Resistive or Inductive Load
0.375" (9.5mm) Lead Length

FIG.2 TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT, (uA) vs PERCENT OF RATED PEAK REVERSE VOLTAGE, (%)

$T_A = 100\,^{\circ}C$
$T_A = 75\,^{\circ}C$
$T_A = 25\,^{\circ}C$
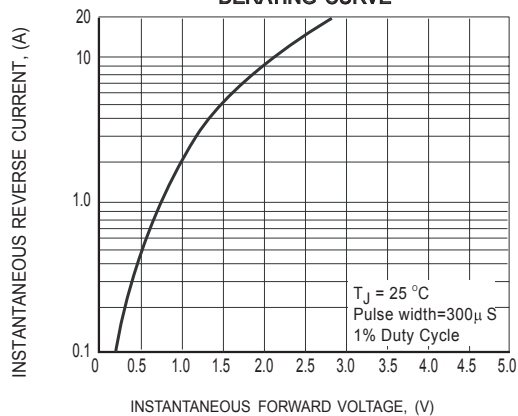
FIG.3 TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, (A) vs INSTANTANEOUS FORWARD VOLTAGE, (V)

$T_J = 25\,^{\circ}C$
Pulse width=300μ S
1% Duty Cycle

FIG.4 TYPICAL JUNCTION CAPACITANCE

C_J, JUNCTION CAPACITANCE, (pF) vs REVERSE VOLTAGE, (V)

$T_J = 25\,^{\circ}C$
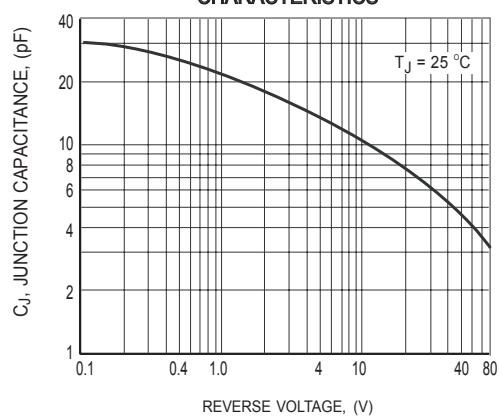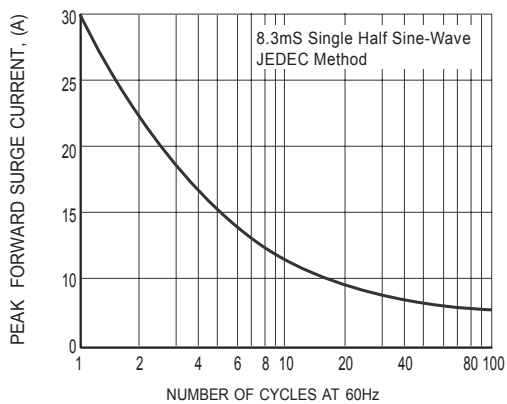
FIG.5 MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A) vs NUMBER OF CYCLES AT 60Hz

8.3mS Single Half Sine-Wave
JEDEC Method

RECTRON

Mounting Pad Layout

0.074 MAX.
(1.88 MAX.)

0.066 MIN.
(1.68 MIN.)

0.060 MIN.
(1.52 MIN.)

0.208
(5.28) REF

Dimensions in inches and (millimeters)

RECTRON

Marking Description

A X ← Part No.

Voltage-code

V Y W W

Code	Voltage	Code	Voltage
1	50V	5	600V
2	100V	6	800V
3	200V	7	1000V
4	400V		

Cathode Band

Plant - code

Year – code
(Y, Last digit of year)

Week – code
(ww,01~52)
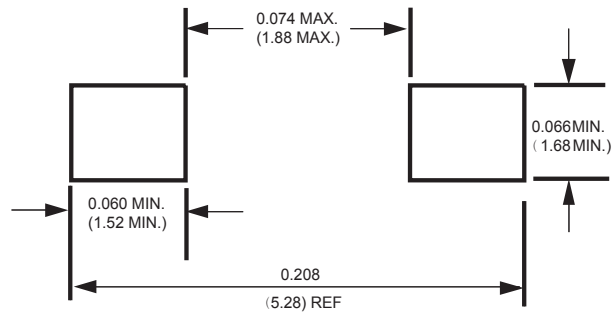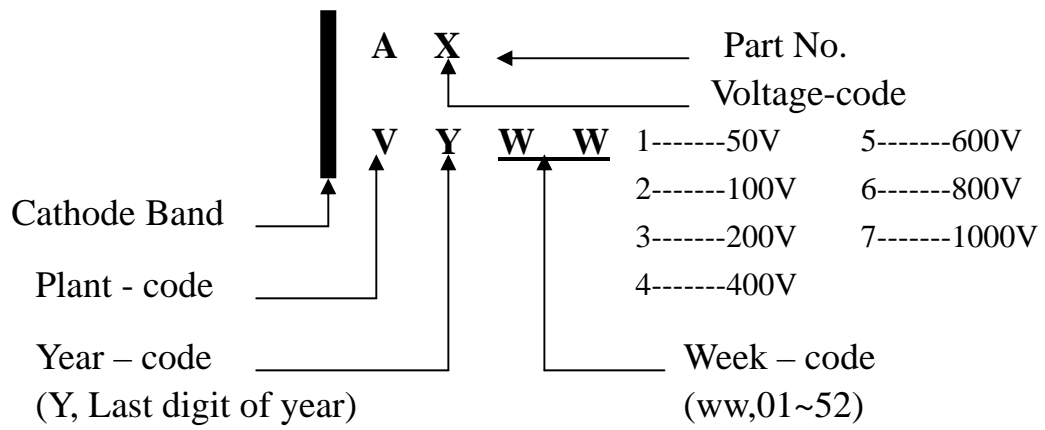
PACKAGING OF DIODE AND BRIDGE RECTIFIERS

REEL PACK

PACKAGE	PACKING CODE	EA PER REEL	COMPONENT SPACE(mm)	TAPE SPACE (mm)	REEL DIA (mm)	CARTON SIZE (mm)	EA PER CARTON	GROSS WEIGHT(Kg)
SMX	-T	1,500	---	---	180	390*205*310	48,000	---
SMX	-W	5,000	---	---	330	355*360*350	80,000	15.20

DISCLAIMER NOTICE

Rectron Inc reserves the right to make changes without notice to any product specification herein, to make corrections, modifications, enhancements or other changes. Rectron Inc or anyone on its behalf assumes no responsibility or liability for any errors or inaccuracies. Data sheet specifications and its information contained are intended to provide a product description only. "Typical" parameters which may be included on RECTRON data sheets and/ or specifications can and do vary in different applications and actual performance may vary over time. Rectron Inc does not assume any liability arising out of the application or use of any product or circuit.

Rectron products are not designed, intended or authorized for use in medical, life-saving implant or other applications intended for life-sustaining or other related applications where a failure or malfunction of component or circuitry may directly or indirectly cause injury or threaten a life without expressed written approval of Rectron Inc. Customers using or selling Rectron components for use in such applications do so at their own risk and shall agree to fully indemnify Rectron Inc and its subsidiaries harmless against all claims, damages and expenditures.

RECTRON

Mouser Electronics

Authorized Distributor

Click to View Pricing, Inventory, Delivery & Lifecycle Information:

[Rectron](#):

[FM4001W-W](#) [FM4001-W](#) [FM4004-W](#) [FM4002-W](#) [FM4005-W](#) [FM4006-W](#) [FM4007-W](#) [FM4003-W](#) [FM4002W-W](#)
[FM4004W-W](#) [FM4007W-W](#) [FM4001L-W](#) [FM4006W-W-S-R01](#) [FM4007-W-S-NT](#) [FM4004-W-S-NT](#) [FM4004W-W-S-R01](#) [FM4006-W-S-NT](#) [FM4002-W-S-NT](#)