RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

FFM1000W THRU FFM1800W

FAST RECOVERY RECTIFIER

### VOLTAGE RANGE 1000 to 1800 Volts   CURRENT 0.5 Ampere

FEATURES
* Fast switching
* Low leakage
* Low forward voltage drop
* High current capability
* High currenf surge
* High reliability

MECHANICAL DATA
* Case: Molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any

SMX

.209 (5.31)
.185 (4.70)
.110 (2.79)
.086 (2.18)
.067 (1.70)
.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 $^{\circ}$C ambient temperature unless otherwise specified.

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

For capacitive load, derate current by 20%.
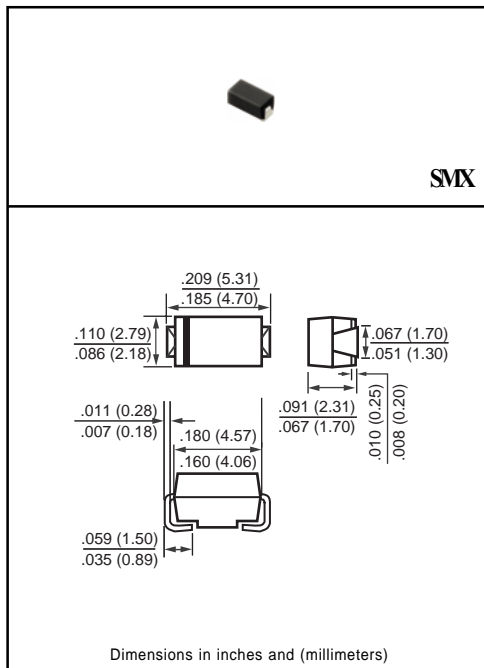
MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	FFM1000W	FFM1200W	FFM1400W	FFM1500W	FFM1600W	FFM1800W	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1000	1200	1400	1500	1600	1800	Volts
Maximum RMS Voltage	V_{RMS}	700	840	980	1050	1120	1260	Volts
Maximum DC Blocking Voltage	V_{DC}	1000	1200	1400	1500	1600	1800	Volts
Maximum Average Forward Rectified Current at T_A = 25°C	I_O	0.5						Amps
Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	25						Amps
Typical Junction Capacitance (Note 2)	C_J	15						pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150						^{0}C

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

CHARACTERISTICS	SYMBOL	FFM1000W	FFM1200W	FFM1400W	FFM1500W	FFM1600W	FFM1800W	UNITS
Maximum Instantaneous Forward Voltage at 0.5A DC	V_F	1.8						Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	5.0						uAmps
Maximum Full Load Reverse Current Full Cycle Average, .375" (9.5mm) lead length at T_L = 55°C		100						uAmps
Maximum Reverse Recovery Time (Note 1)	trr	300						nSec

NOTES :   1. Reverse Recovery Test Conditions: IF = 0.5A, IR = -1.0A, IRR =- 0.25A

2. Measured at 1 MHz and applied reverse voltage of 4.0 volts

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RATING AND CHARACTERISTIC CURVES (FFM1000W THRU FFM1800W)

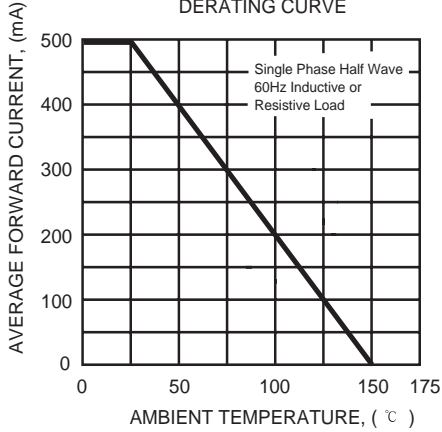## FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT, (mA)

AMBIENT TEMPERATURE, (℃)

Single Phase Half Wave
60Hz Inductive or
Resistive Load

FIG. 2 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A)

NUMBER OF CYCLES AT 60Hz

8.3ms Single Half Sine-Wave
(JEDEC Method)
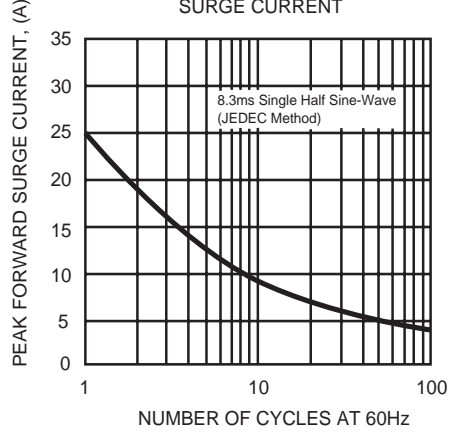
FIG. 3 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

50 Ω
NONINDUCTIVE

10 Ω
NONINDUCTIVE

(+)
25 Vdc
(approx)
(-)

D.U.T

1Ω
NON-
INDUCTIVE

OSCILLOSCOPE
(NOTE 1)

PULSE
GENERATOR
(NOTE 2)

(-)

(+)
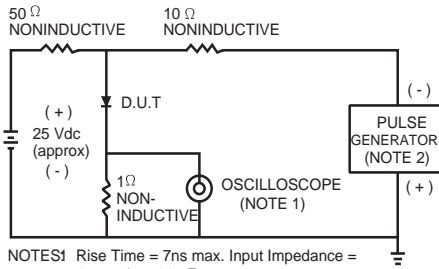
NOTES 1 Rise Time = 7ns max. Input Impedance =
           1 megohm. 22 pF.
       2. Rise Time = 10ns max. Source Impedance =
           50 ohms.

+0.5A

0

-0.25A

-1.0A

trr

1cm

SET TIME BASE FOR
50/100 ns/cm

RECTRON