RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

R1200F THRU R2000F

HIGH VOLTAGE FAST RECOVERY RECTIFIER

### VOLTAGE RANGE 1200 to 2000 Volts   CURRENT 0.2 to 0.5 Ampere

FEATURES
*Fast switching
*Low leakage
*High current capability
*High surge capability
*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
* Weight: 0.35 gram

DO-41

.034 (0.9)
.028 (0.7) DIA.

1.0 (25.4) MIN.

.205 (5.2)
.166 (4.2)

.107 (2.7) DIA.
.080 (2.0)

1.0 (25.4) MIN.

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%.
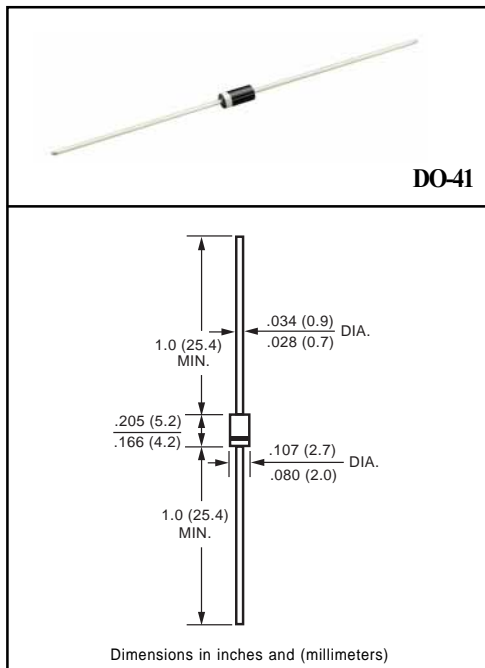
MAXIMUM RATINGS (At T_A = 25°C unless otherwise noted)

RATINGS	SYMBOL	R1200F	R1500F	R1800F	R2000F	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	1200	1500	1800	2000	Volts
Maximum RMS Volts	V_{RMS}	840	1050	1260	1400	Volts
Maximum DC Blocking Voltage	V_{DC}	1200	1500	1800	2000	Volts
Maximum Average Forward Rectified Current at T_A = 50°C	I_O	500			200	mAmps
Peak Forward Surge Current, 8.3 ms single half sine-wave superimposed on rated load (JEDEC method)	I_{FSM}	30				Amps
Operating and Storage Temperature Range	T_J, T_{STG}	-65 to + 175				^{0}C

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

CHARACTERISTICS	SYMBOL	R1200F	R1500F	R1800F	R2000F	UNITS
Maximum Instantaneous Forward Voltage at 0.5A/0.2A DC	V_F	2.5			4.0	Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage T_A = 25°C	I_R	5.0				uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375", (9.5mm) lead length at T_L = 55°C		100				uAmps
Maximum Reverse Recovery Time (Note)	trr	500				nSec

NOTES :   Test Conditions: I_F = 0.5A, I_R = -1.0A, I_{RR} = -0.25A

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RATING AND CHARACTERISTIC CURVES (R1200F THRU R2000F)
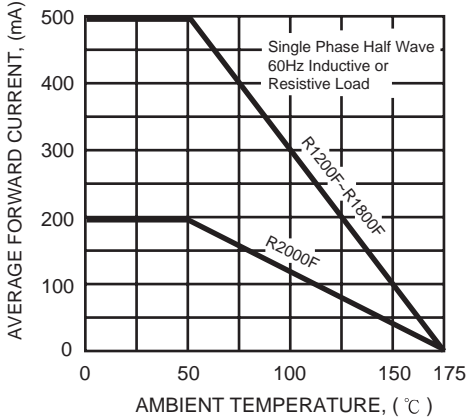
FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

AVERAGE FORWARD CURRENT, (mA) vs AMBIENT TEMPERATURE, (℃)

Single Phase Half Wave 60Hz Inductive or Resistive Load

R1200F–R1800F

R2000F

FIG. 2 - 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)
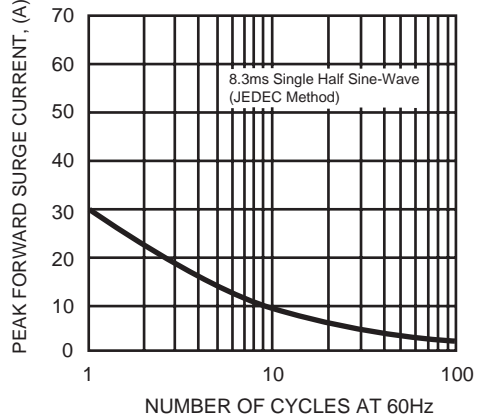
FIG. 3 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

50 Ω NONINDUCTIVE

10 Ω NONINDUCTIVE

(+) 25 Vdc (approx) (-)

D.U.T

(-)

PULSE GENERATOR (NOTE 2)

1 Ω NON-INDUCTIVE

OSCILLOSCOPE (NOTE 1)

(+)
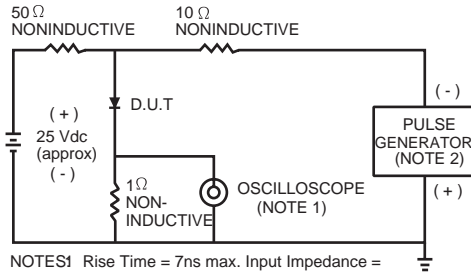
NOTES1 Rise Time = 7ns max. Input Impedance = 1 megohm. 22 pF.
       2. Rise Time = 10ns max. Source Impedance = 50 ohms.

+0.5A

0

-0.25A

-1.0A

trr

1cm

SET TIME BASE FOR 50/100 ns/cm

RECTRON