RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

HER101G THRU HER108G

HIGH EFFICIENCY GLASS PASSIVATED RECTIFIER
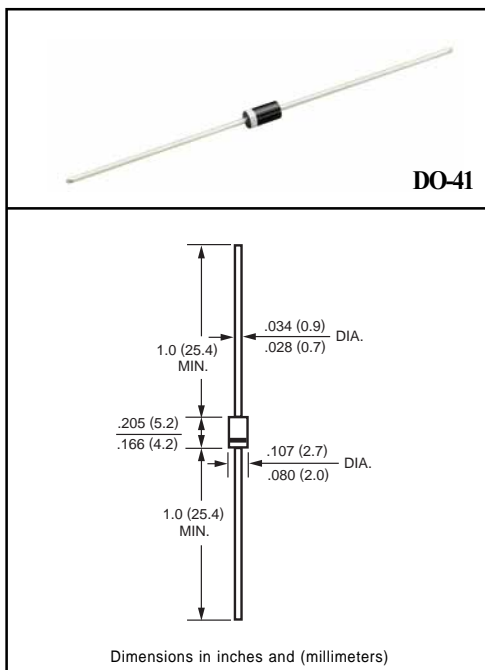
VOLTAGE RANGE 50 to 1000 Volts CURRENT 1.0 Ampere

FEATURES
* Low power loss, high efficiency
* Low leakage
* Low forward voltage
* High current capability
* High speed switching
* High surge capability
* High reliability

MECHANICAL DATA
* Case: Molded plastic
* Epoxy: UL 94V-O rate flame retardant
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 0.35 gram

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS
Ratings at 25 °C ambient temperature unless otherwise specified.
Single phase, half wave, 60 Hz, resistive or inductive load.
For capacitive load, derate current by 20%.

DO-41

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

1.0 (25.4) MIN.

.205 (5.2)
.166 (4.2)

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

1.0 (25.4) MIN.

Dimensions in inches and (millimeters)

MAXIMUM RATINGS (At TA = 25°C unless otherwise noted)

RATINGS	SYMBOL	HER101G	HER102G	HER103G	HER104G	HER105G	HER106G	HER107G	HER108G	UNITS
Maximum Recurrent Peak Reverse Voltage	V_{RRM}	50	100	200	300	400	600	800	1000	Volts
Maximum RMS Voltage	V_{RMS}	35	70	140	210	280	420	560	700	Volts
Maximum DC Blocking Voltage	V_{DC}	50	100	200	300	400	600	800	1000	Volts
Maximum Average Forward Rectified Current at TA= 50°C	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 Junction Capacitance (Note 2)	C_J	15						12		pF
Operating and Storage Temperature Range	T_J, T_{STG}	-55 to + 150								°C

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

CHARACTERISTICS	SYMBOL	HER101G	HER102G	HER103G	HER104G	HER105G	HER106G	HER107G	HER108G	UNITS
Maximum Instantaneous Forward Voltage at 1.0A DC	V_F	1.0		1.3			1.70			Volts
Maximum DC Reverse Current at Rated DC Blocking Voltage TA = 25°C	I_R	5.0								uAmps
Maximum Full Load Reverse Current Average, Full Cycle .375" (9.5mm) lead length at TL = 55°C		100								uAmps
Maximum Reverse Recovery Time (Note 1)	trr	50					75			nSec

NOTES : 1. 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 (HER101G THRU HER108G)

FIG. 1 - TEST CIRCUIT DIAGRAM AND REVERSE RECOVERY TIME CHARACTERISTIC

50 Ω NONINDUCTIVE

10 Ω NONINDUCTIVE

(+)

D.U.T

25 Vdc (approx)

(-)

1 Ω NON-INDUCTIVE

OSCILLOSCOPE (NOTE 1)

(-)

PULSE GENERATOR (NOTE 2)

(+)

+0.5A

0

-0.25A

-1.0A

trr

1cm

SET TIME BASE FOR 10/20 ns/cm
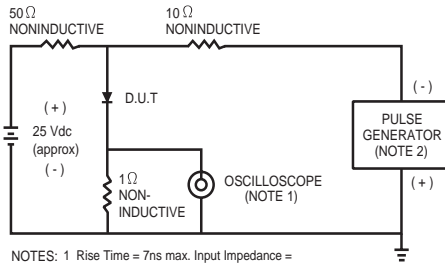
NOTES: 1 Rise Time = 7ns max. Input Impedance =
            1 megohm. 22pF.
         2. Rise Time = 10ns max. Source Impedance =
            50 ohms.
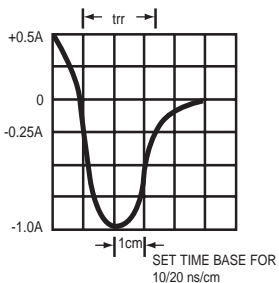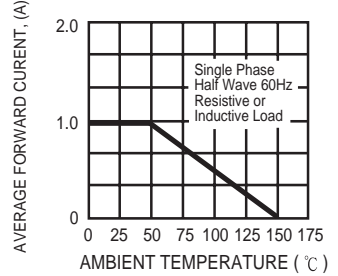
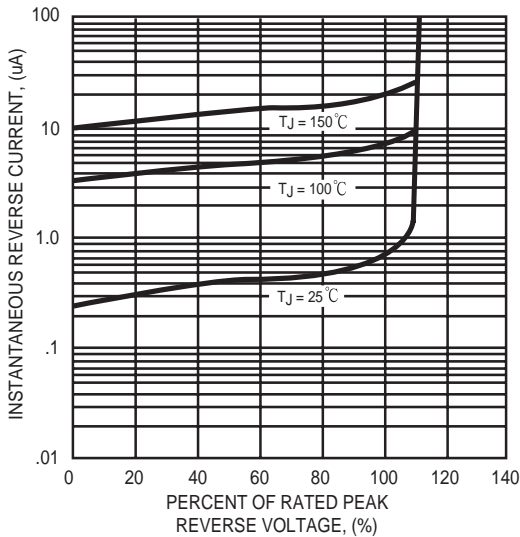FIG. 2 - TYPICAL FORWARD CURRENT DERATING CURVE

Single Phase
Half Wave 60Hz
Resistive or
Inductive Load

AVERAGE FORWARD CURRENT, (A)

2.0

1.0

0

0 25 50 75 100 125 150 175

AMBIENT TEMPERATURE (℃)

FIG. 3 - TYPICAL REVERSE CHARACTERISTICS

INSTANTANEOUS REVERSE CURRENT, (uA)

100

10

1.0

.1

.01

T J = 150 ℃

T J = 100 ℃

T J = 25 ℃

0   20   40   60   80   100 120 140

PERCENT OF RATED PEAK
REVERSE VOLTAGE, (%)

FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

INSTANTANEOUS FORWARD CURRENT, (A)

10

1.0

.1

.01

.001

50 / 100 / 200V

300 / 400V

600 / 800 / 1000V

T J = 25 ℃

Pulse Width = 300uS
1% Duty Cycle

0 .2 .4 .6 .8 1.0 1.2 1.4 1.6 1.8

INSTANTANEOUS FORWARD VOLTAGE, (V)
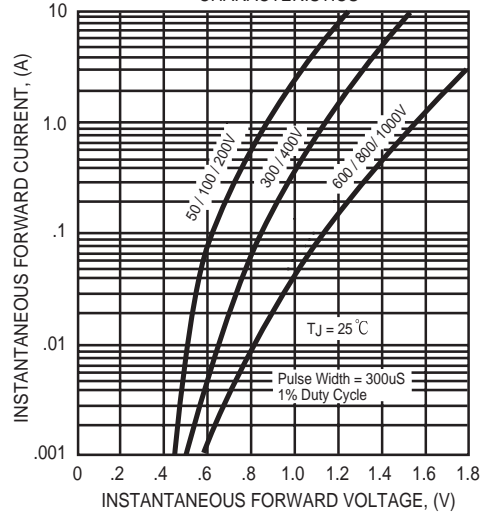
FIG. 5 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

PEAK FORWARD SURGE CURRENT, (A)

50

40

30

20

10

0

8.3ms Single Half Sine-Wave
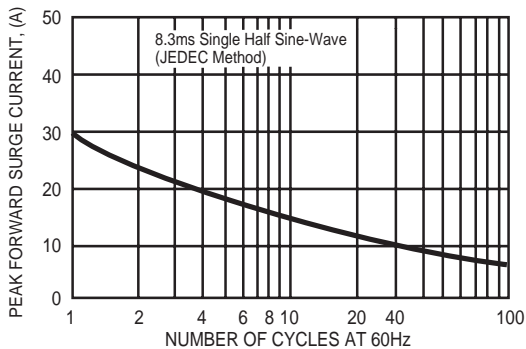(JEDEC Method)

1   2   4   6 8 10   20 40   100

NUMBER OF CYCLES AT 60Hz

FIG. 6 - TYPICAL JUNCTION CAPACITANCE

JUNCTION CAPACITANCE, (pF)

200

100

60
40

20

10
6
4

2

1

T J = 25 ℃

HER101G~HER105G

HER106G~HER108G

.1 .2 .4 1.0 2 4 10 20 40 100

REVERSE VOLTAGE, (V)

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