RECTRON
SEMICONDUCTOR
TECHNICAL SPECIFICATION

# HER1601C THRU HER1605C

## HIGH EFFICIENCY RECTIFIER

### VOLTAGE RANGE 50 to 400 Volts CURRENT 16.0 Amperes

### FEATURES

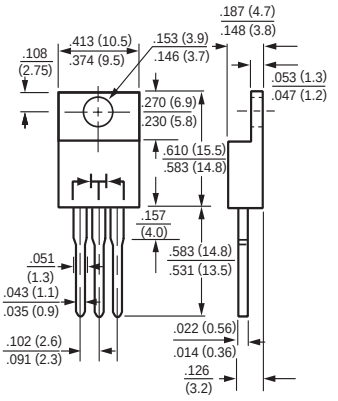
* Low power loss, high efficiency
* Low forward voltage drop
* Low thermal resistance
* High current capability
* High speed switching
* High surge capability
* High reliability

### MECHANICAL DATA

* Case: TO-220 molded plastic
* Epoxy: Device has UL flammability classification 94V-O
* Lead: MIL-STD-202E method 208C guaranteed
* Mounting position: Any
* Weight: 2.24 grams
* Polarity: As marked



TO-220




Dimensions in inches and (millimeters)

### 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%.

**MAXIMUM RATINGS** (At $T_A$ = 25°C unless otherwise noted)

| RATINGS | SYMBOL | HER1601C | HER1602C | HER1603C | HER1604C | HER1605C | HER1605PC | UNITS |
|---|---|---|---|---|---|---|---|---|
| Maximum Recurrent Peak Reverse Voltage | $V_{RRM}$ | 50 | 100 | 200 | 300 | 400 | 400 | Volts |
| Maximum RMS Voltage | $V_{RMS}$ | 35 | 70 | 140 | 210 | 280 | 280 | Volts |
| Maximum DC Blocking Voltage | $V_{DC}$ | 50 | 100 | 200 | 300 | 400 | 400 | Volts |
| Maximum Average Forward Rectified Current at $T_C$ = 75°C | $I_O$ | 16.0 | | | | | | Amps |
| Peak Forward Surge Current 8.3 ms single half sine-wave superimposed on rated load (JEDEC method) | $I_{FSM}$ | 200 | | | | | | Amps |
| Typical Thermal Resistance | $R_{\theta JC}$ | 2.5 | | | | | | °C/W |
| Typical Junction Capacitance (Note 2) | $C_J$ | 40 | | | | | | pF |
| Operating and Storage Temperature Range | $T_J$, $T_{STG}$ | -65 to + 150 | | | | | | °C |

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

| CHARACTERISTICS | | SYMBOL | HER1601C | HER1602C | HER1603C | HER1604C | HER1605C | HER1605PC | UNITS |
|---|---|---|---|---|---|---|---|---|---|
| Maximum Instantaneous Forward Voltage at 8.0A DC | | $V_F$ | 1.0 | | | 1.3 | | 1.0 | Volts |
| Maximum DC Reverse Current | @$T_C$ = 25°C | $I_R$ | 10 | | | | | | uAmps |
| at Rated DC Blocking Voltage | @$T_C$ = 100°C | | 150 | | | | | | |
| Maximum Reverse Recovery Time (Note 1) | | trr | 50 | | | | | | nSec |

NOTES : 1. Test Conditions: $I_F$ = 0.5A, $I_R$ = -1.0A, $I_{RR}$ = -0.25A
2. Measured at 1 MHz and applied reverse voltage of 4.0 volts.
3. Suffix "A" = Common Anode.

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# RATING AND CHARACTERISTIC CURVES ( HER1601C THRU HER1605C )

FIG. 1 - TYPICAL FORWARD CURRENT DERATING CURVE

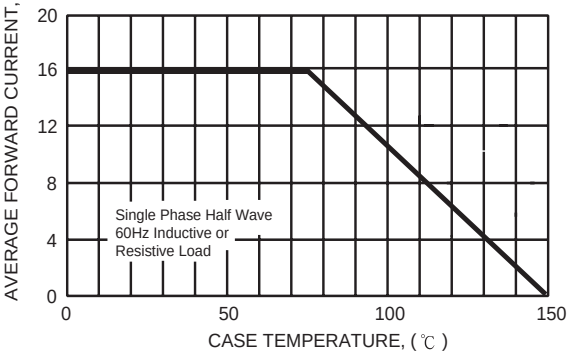



FIG. 2 - TYPICAL REVERSE CHARACTERISTICS

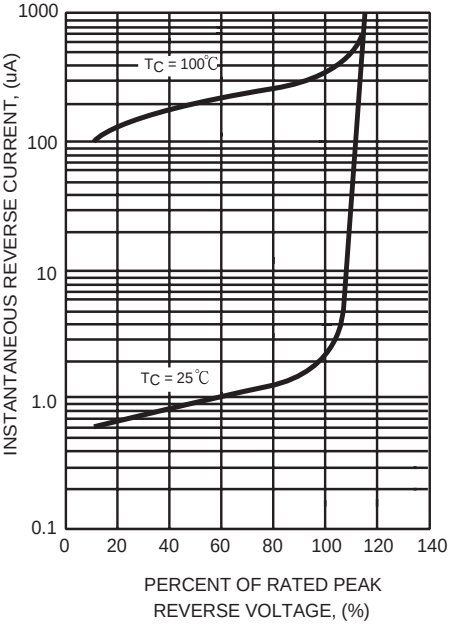



FIG. 3 - MAXIMUM NON-REPETITIVE FORWARD SURGE CURRENT

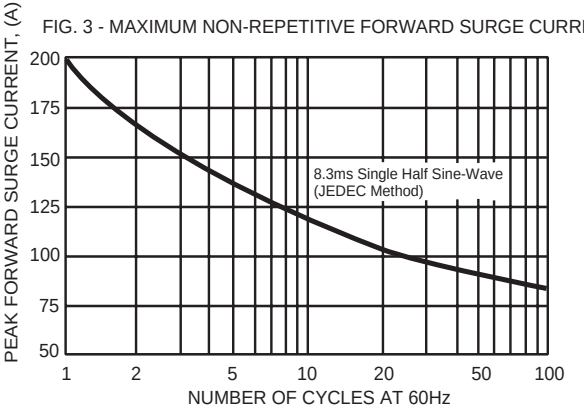



FIG. 4 - TYPICAL INSTANTANEOUS FORWARD CHARACTERISTICS

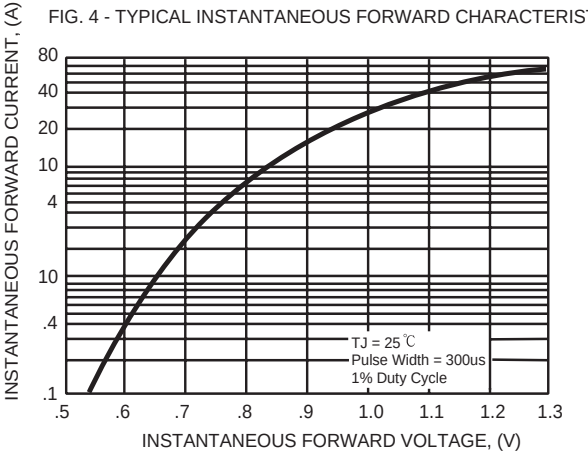



FIG. 5 - TYPICAL JUNCTION CAPACITANCE

