DIGITRON™ Semiconductors

High-reliability discrete products
and engineering services since 1977

# 1N1183-1N1190, 1N3765-1N3768

## STANDARD RECOVERY RECTIFIERS

### FEATURES

- Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.
- Available as non-RoHS (Sn/Pb plating), standard, and as RoHS by adding "-PBF" suffix.

### MAXIMUM RATINGS

| Characteristics | Symbol | | Conditions |
|---|---|---|---|
| **Average forward current** | $I_{F(AV)}$ | 40 Amps | $T_C$ = 146°C, half sine wave, $R_{\theta JC}$ = 1.25°C/W |
| **Maximum surge current** | $I_{FSM}$ | 800 Amps | 8.3ms, half sine, $T_J$ = 200°C |
| **Maximum $I^2t$ for fusing** | $I^2t$ | 2600 $A^2s$ | |
| **Maximum peak forward voltage** | $V_{FM}$ | 1.19 Volts | $I_{FM}$ = 90A: $T_J$ = 25°C |
| **Maximum peak reverse current** | $I_{RM}$ | 10 µA | $V_{RRM}$, $T_J$ = 25°C* |
| **Maximum peak reverse current** | $I_{RM}$ | 2.0 mA | $V_{RRM}$, $T_J$ = 150°C |
| **Maximum thermal resistance** | $R_{\theta JC}$ | 1.25°C/W | Junction to case |
| **Maximum recommended operating frequency** | | 10 kHz | |
| **Storage temperature range** | $T_{stg}$ | -65 to +200°C | |
| **Operating junction temperature range** | $T_J$ | -65 to +200°C | |

*Pulse test: Pulse width 300µsec. Duty cycle 2%

### VOLTAGE RATINGS

| Part numbers | Peak reverse voltage |
|---|---|
| **1N1183, 1N1183A** | 50V |
| **1N1184, 1N1184A** | 100V |
| **1N1185, 1N1185A** | 150V |
| **1N1186, 1N1186A** | 200V |
| **1N1187, 1N1187A** | 300V |
| **1N1188, 1N1188A** | 400V |
| **1N1189, 1N1189A** | 500V |
| **1N1190, 1N1190A** | 600V |
| **1N3765** | 700V |
| **1N3766** | 800V |
| **1N3767** | 900V |
| **1N3768** | 1000V |

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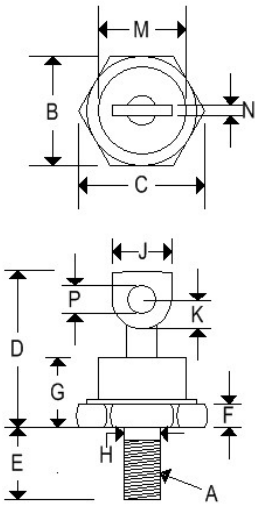
**MECHANICAL CHARACTERISTICS**

| | |
|---|---|
| **Case** | DO-5(R) |
| **Marking** | Alpha-numeric |
| **Normal polarity** | Cathode is stud |
| **Reverse polarity** | Anode is stud (add "R" suffix) |




| | DO-5(R) | | | |
|---|---|---|---|---|
| | Inches | | Millimeters | |
| | Min | Max | Min | Max |
| **A** | ¼-28 UNF2A threads | | | |
| **B** | 0.669 | 0.688 | 16.990 | 17.480 |
| **C** | - | 0.794 | - | 20.160 |
| **D** | - | 1.000 | - | 25.400 |
| **E** | 0.422 | 0.453 | 10.720 | 11.510 |
| **F** | 0115 | 0.200 | 2.920 | 5.080 |
| **G** | - | 0.450 | - | 11.430 |
| **H** | 0.220 | 0.249 | 5.580 | 6.320 |
| **J** | 0.250 | 0.375 | 6.350 | 9.530 |
| **K** | 0.156 | - | 3.960 | - |
| **M** | - | 0.667 | - | 16.940 |
| **N** | 0.030 | 0.080 | 0.760 | 2.030 |
| **P** | 0.140 | 0.175 | 3.560 | 4.450 |

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## STANDARD RECOVERY RECTIFIERS

Figure 1
Typical Forward Characteristics

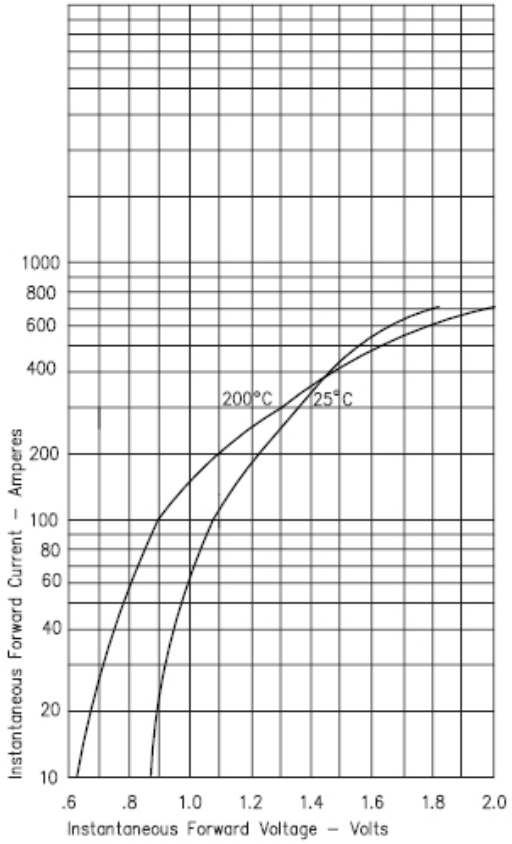


Figure 2
Typical Reverse Characteristics

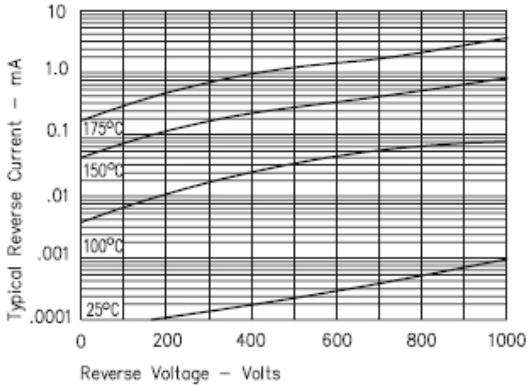


Figure 3
Forward Current Derating

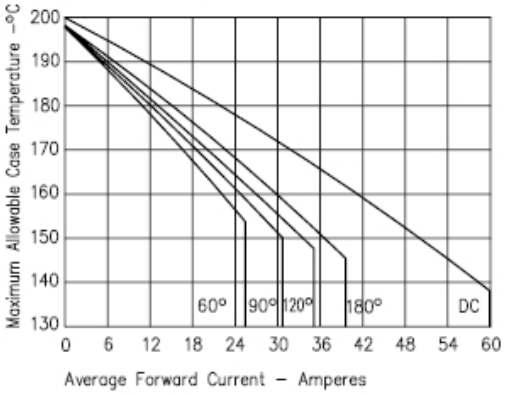


Figure 4
Maximum Forward Power Dissipation

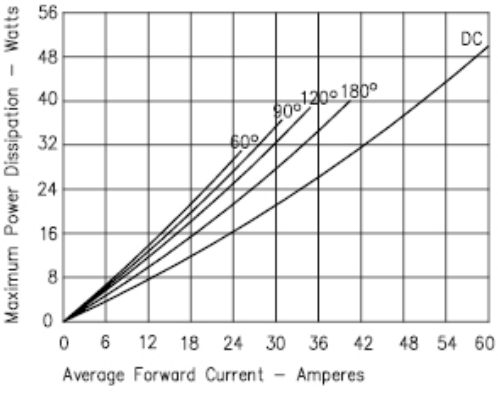


Figure 5
Transient Thermal Impedance