# DIGITRON SEMICONDUCTORS

## USD520-USD550 SCHOTTKY RECTIFIERS

### MAXIMUM RATINGS

| Parameter | Symbol | Value |
|---|---|---|
| **Peak repetitive forward current @ $T_C$ = 115°C** (Rated $V_R$, square wave, 20 kHz, 50% duty cycle) | $I_{FRM}$ | 150A |
| **Average forward current @ $T_C$ = 115°C** | $I_{F(AV)}$ | 75A |
| **Non-repetitive peak surge current (8.3ms)** | $I_{FSM}$ | 1000A |
| **Peak reverse transient current** | $I_{RM}$ | 2A |
| **Thermal resistance, junction to case** | $R_{\Theta JC}$ | 0.8°C/W |
| **Storage temperature range** | $T_{stg}$ | -55° to 200°C |
| **Operating junction temperature** | $T_{J(pk)}$ | 175°C |

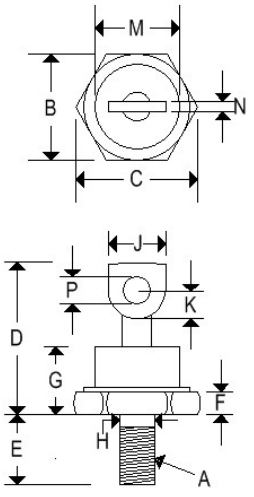
### ELECTRICAL CHARACTERISTICS ($T_{Case}$ = 25°C)

| Part number | Working peak reverse voltage | Non-repetitive peak reverse voltage @ $I_{RM}$ | Maximum forward voltage | | | Maximum reverse current (pulsed)* | | Maximum capacitance @ $V_R$ = 5.0V |
|---|---|---|---|---|---|---|---|---|
| | $V_{RWM}$ | $V_{RSM}$ | $V_F$ | | | $I_R$ @ $V_{RWM}$ | | |
| | Volts | Volts | Volts @10A, 25°C | Volts @60A, 25°C | Volts @60A, 125°C | mA @ $T_C$ = 25°C | mA @ $T_C$ = 125°C | pF |
| **USD520** | 20 | 24 | 0.50 | 0.68 | 0.60 | 20 | 50 | 4000 |
| **USD535** | 35 | 42 | 0.50 | 0.68 | 0.60 | 20 | 50 | 4000 |
| **USD545** | 45 | 54 | 0.50 | 0.68 | 0.60 | 20 | 50 | 4000 |
| **USD550** | 50 | 60 | 0.50 | 0.68 | 0.60 | 20 | 75 | 4000 |

*Duty cycle = 1%.

### 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 |

Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).
Available as “HR” (high reliability) screened per MIL-PRF-19500, JANTX level. Add “HR” suffix to base part number.

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Rev. 20121128

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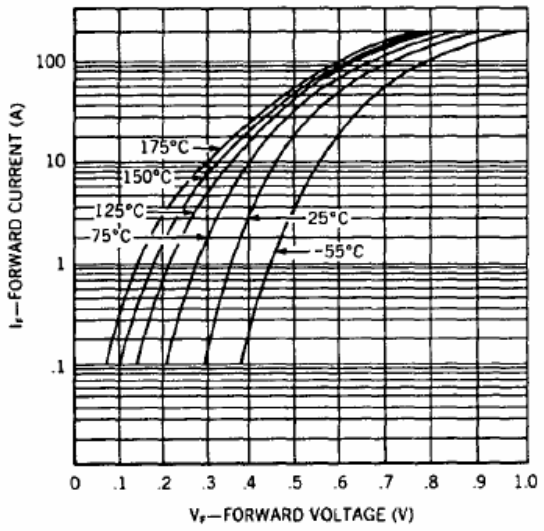
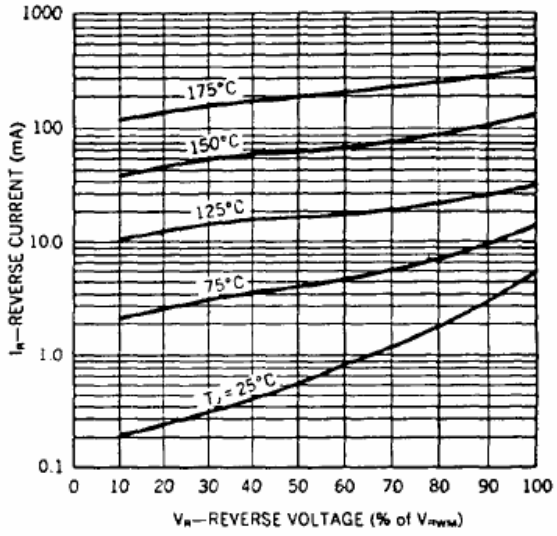
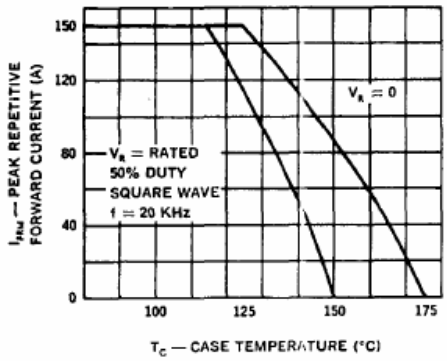
**Typical Forward Current vs Forward Voltage**



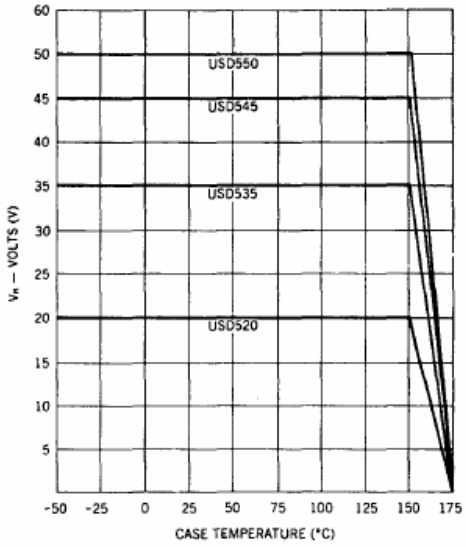

**Typical Reverse Current vs Reverse Voltage**




**Maximum Current vs Case Temperature**




**$V_{R(MAX)}$ Rating vs Case Temperature**

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