

DIGITRON SEMICONDUCTORS

MUR7005-MUR7060

70A ULTRA FAST RECOVERY RECTIFIER

MAXIMUM RATINGS

| Rating | Symbol | MUR | | | | | Unit |
|--|----------------|--------------------------------|------|------|------|------|------------------|
| | | 7005 | 7010 | 7020 | 7040 | 7060 | |
| Peak repetitive reverse voltage | V_{RRM} | 50 | 100 | 200 | 400 | 600 | V |
| Maximum RMS voltage | V_{RMS} | 35 | 70 | 140 | 280 | 420 | |
| DC blocking voltage | V_R | 50 | 100 | 200 | 400 | 600 | |
| Average rectified forward current (Rated V_R) | $I_{F(AV)}$ | 70 @ $T_C = 135^\circ\text{C}$ | | | | | A |
| Peak forward surge current (8.3ms, half sine) | I_{FSM} | 1000 | | | | | A |
| Operating and storage junction temperature range | T_J, T_{stg} | -55 to +175 | | | | | $^\circ\text{C}$ |

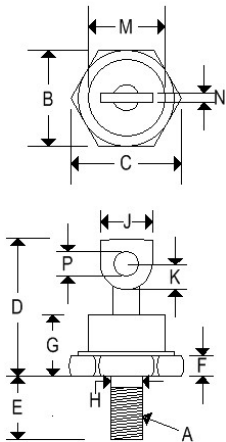
ELECTRICAL CHARACTERISTICS (@ 25°C unless otherwise noted)

| Parameter | Symbol | MUR | | | | | Unit |
|--|----------|---------|------|------|------|------|---------------------|
| | | 7005 | 7010 | 7020 | 7040 | 7060 | |
| Maximum instantaneous forward voltage ⁽¹⁾ ($I_F = 70\text{A}, T_J = 25^\circ\text{C}$) | V_F | 0.975 | | | 1.25 | 1.35 | V |
| Maximum DC reverse current ⁽¹⁾ (Rated dc voltage, $T_J = 25^\circ\text{C}$) (Rated dc voltage, $T_J = 125^\circ\text{C}$) | I_R | 50 6 | | | | | μA mA |
| Maximum reverse recovery time ($I_F = 0.5\text{A}, I_R = 1.0\text{A}, I_{RR} = 0.25\text{A}$) | t_{rr} | 60 | | | 75 | 90 | ns |
| Typical junction capacitance @ 1.0MHz, $V_R = 10\text{V}$ | C_J | 575 | | | 300 | 275 | pF |

Note 1: Pulse test: Pulse width = 300 μs , duty cycle = 2.0%.

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 | 0.115 | 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 |

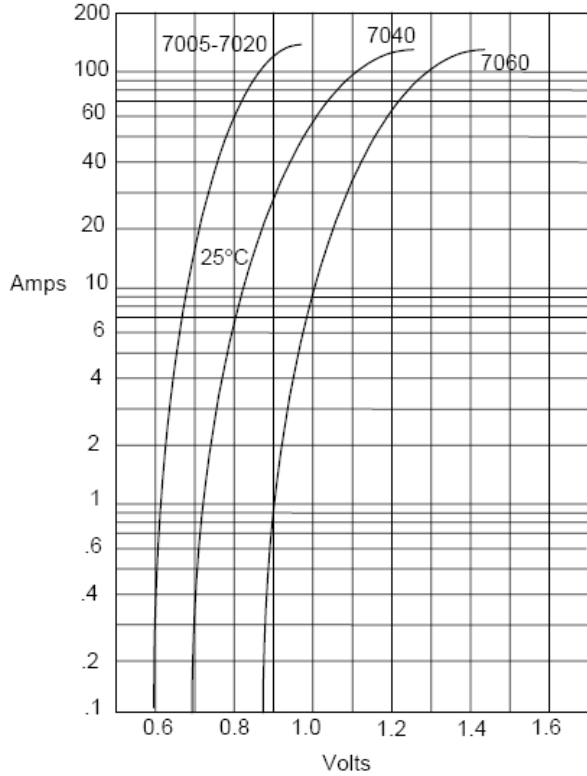
Available Non-RoHS (standard) or RoHS compliant (add PBF suffix).

Available as "HR" (high reliability) screened per MIL-PRF-19500, JANTX level. Add "HR" suffix to base part number.

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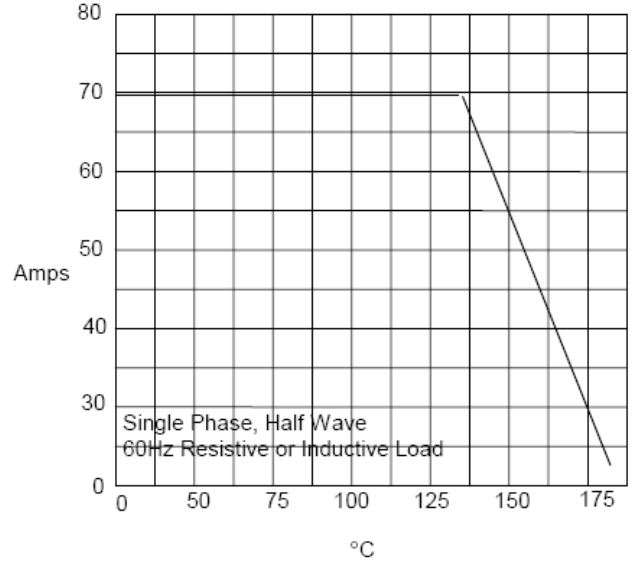
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Figure 1
Typical Forward Characteristics



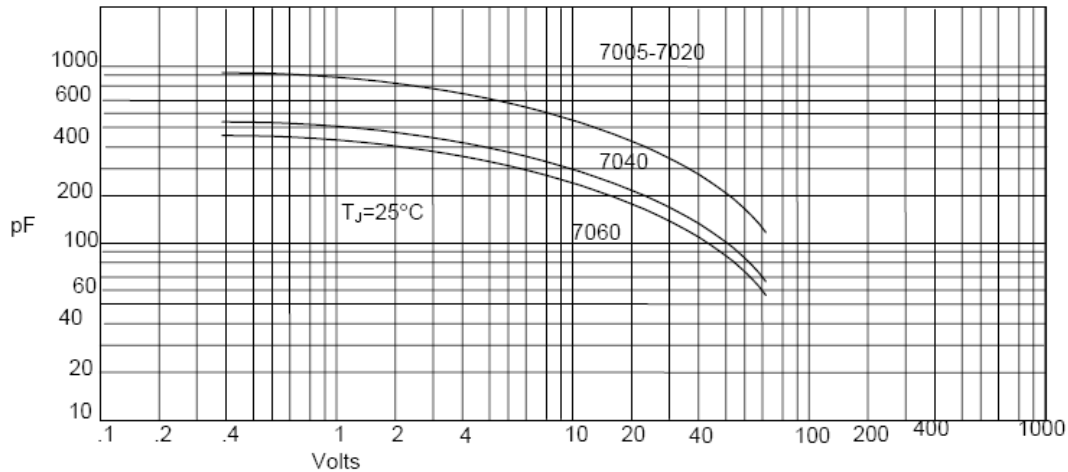
Instantaneous Forward Current - Amperes versus
Instantaneous Forward Voltage - Volts

Figure 2
Forward Derating Curve



Average Forward Rectified Current - Amperes versus
Case Temperature - °C

Figure 3
Junction Capacitance

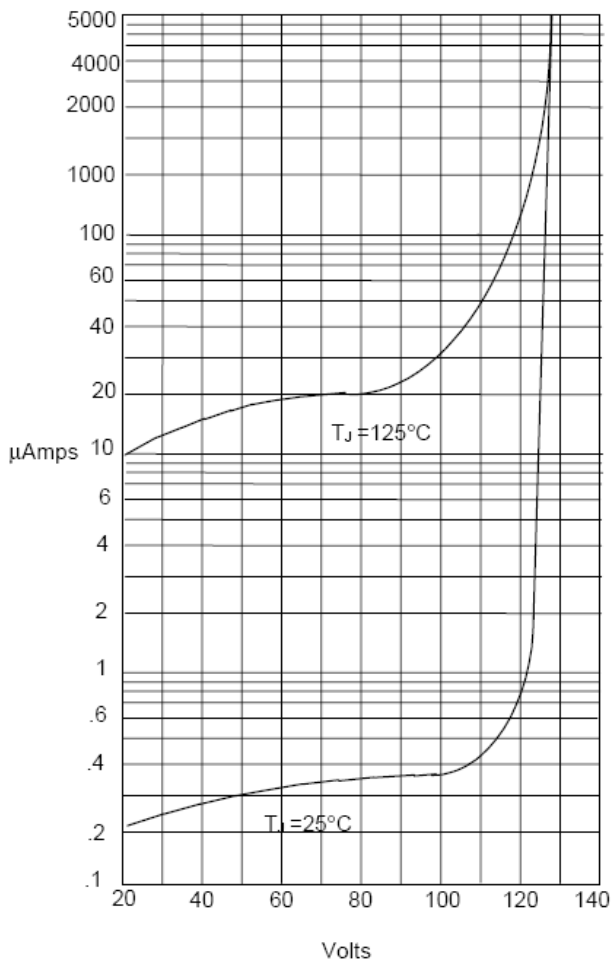


Junction Capacitance - pF versus
Reverse Voltage - Volts

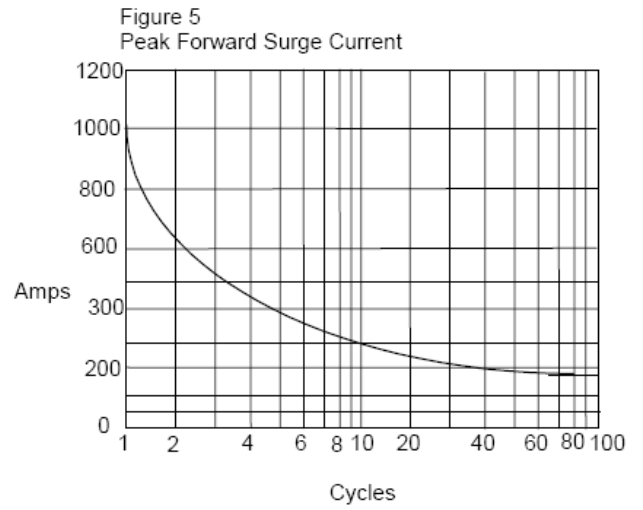
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Figure 4
Typical Reverse Characteristics



Instantaneous Reverse Leakage Current - MicroAmperes versus
Percent Of Rated Peak Reverse Voltage - Volts



Peak Forward Surge Current - Amperes versus
Number Of Cycles At 60Hz - Cycles