



AMERICAN MICROSEMICONDUCTOR INC

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TUNNEL DIODES GENERAL PURPOSE

| + 100° C Operation TD-1 | I_p | I_v | C | V_p | V_v | V_{fp} | R_s | --G | f_{RO} |
|-------------------------------|--------------------------|----------------------------|-----------------------------|--------------------------|---------------------------|------------------------------------|-------------------------------------|---|---|
| | Peak Point Current | Valley Point Current | Capacitance Max. (pF) | Peak Point Voltage | Valley Voltage Typ. | Forward Peak Voltage Typ. | Series Resist. Max. (ohms) | Negative Conductive (mhos X 10 ⁹) | Resistive Cutoff Frequency Typ. (GHz) |
| | (mA) | Max. (mA) | | Typ. (mV) | (mV) | (mV) | | | |
| 1N3712 | 1.0 ± 10% | 0.18 | 10 | 65 | 350 | 500 | 4.0 | 8 Typ. | 2.3 |
| 1N3713* | 1.0 ± 2.5% | 0.14 | 5 | 65 | 350 | 510 | 4.0 | 8.5 ± 1 | 3.2 |
| 1N3714 | 2.2 ± 10% | 0.48 | 25 | 65 | 350 | 500 | 3.0 | 18 Typ. | 2.2 |
| 1N3715* | 2.2 ± 2.5% | 0.32 | 10 | 65 | 350 | 510 | 3.0 | 19 ± 3 | 3.0 |
| 1N3716 | 4.7 ± 10% | 1.04 | 50 | 65 | 350 | 500 | 2.0 | 40 Typ. | 1.8 |
| 1N3717* | 4.7 ± 2.5% | 0.60 | 25 | 65 | 350 | 510 | 2.0 | 41 ± 5 | 3.4 |
| 1N3718 | 10.0 ± 10% | 2.20 | 90 | 65 | 350 | 500 | 1.5 | 80 Typ. | 1.8 |
| 1N3719* | 10.0 ± 2.5% | 1.40 | 50 | 65 | 350 | 510 | 1.5 | 85 ± 10 | 2.8 |
| 1N3720 | 22.0 ± 10% | 4.80 | 150 | 65 | 350 | 500 | 1.0 | 180 Typ. | 1.6 |
| 1N3721* | 22.0 ± 2.5% | 3.10 | 100 | 65 | 350 | 510 | 1.0 | 190 ± 30 | 2.6 |
| TD-9 | 0.5 ± 10% | 0.10 | 5 | 60 | -- | -- | 6.0 | 4.0 Typ. | 1.3 |

ULTRA HIGH-SPEED SWITCHING

| + 100° C Operation TD-260* | I_p | I_v | C | V_p | V_v | V_{fp} | R_s | t_r |
|----------------------------------|--------------------------|----------------------------|-----------------------------|--------------------------|------------------------------|--|--|------------------------------------|
| | Peak Point Current | Valley Point Current | Capacitance Max. (pF) | Peak Point Voltage | Valley Voltage Typical | Forward Voltage @ $I_f = I_p$ Typical | Series Resist. Typical (ohms) | Rise Time Typical (psec.) |
| | (mA) | Max. (mA) | | Typical (mV) | (mV) | (mV) | | |
| TD-261 | 2.2 ± 10% | 0.31 | 3.0 | 70 | 390 | 500 - 700 | 5.0 | 430 |
| TD-261A | 2.2 ± 10% | 0.31 | 1.0 | 80 | 390 | 500 - 700 | 7.0 | 160 |
| TD-262 | 4.7 ± 10% | 0.60 | 6.0 | 80 | 390 | 500 - 700 | 3.5 | 320 |
| TD-262A | 4.7 ± 10% | 0.60 | 1.0 | 90 | 400 | 500 - 700 | 4.0 | 74 |
| TD-263 | 10.0 ± 10% | 1.40 | 9.0 | 75 | 400 | 500 - 700 | 1.7 | 350 |
| TD-263A | 10.0 ± 10% | 1.40 | 5.0 | 80 | 410 | 520 - 700 | 2.0 | 190 |
| TD-263B | 10.0 ± 10% | 1.40 | 2.0 | 90 | 420 | 550 - 700 | 2.5 | 68 |
| TD-264 | 22.0 ± 10% | 3.80 | 18.0 | 90 | 425 | 600 Typ. | 1.8 | 185 |
| TD-264A | 22.0 ± 10% | 3.80 | 4.0 | 100 | 425 | 550 - 700 | 2.0 | 64 |
| TD-265 | 50.0 ± 10% | 8.50 | 25.0 | 110 | 425 | 625 Typ. | 1.4 | 100 |
| TD-265A | 50.0 ± 10% | 8.50 | 5.0 | 130 | 425 | 640 Typ. | 1.5 | 35 |
| TD-266 | 100 ± 10% | 17.50 | 35.0 | 150 | 450 | 650 Typ. | 1.1 | 57 |
| TD-266A | 100 ± 10% | 17.50 | 6.0 | 180 | 450 | 660 Typ. | 1.2 | 22 |

BACK DIODES GENERAL PURPOSE

| GE Type | I_p | C | Reverse Voltage | | I_{F1} | V_{F2} | t_r |
|---------|---------------------------------------|--------------------------------------|-----------------|----------|--|--|------------------------------------|
| | Peak Point Current Max. (mA) | Total Capacitance Max. (pF) | Min | | Forward Current @ $V_{R1} = 00$ ± 10 mV (mA) | Forward Voltage @ $I_{F2} = 3 I_{F1}$ Typical (mV) | Rise Time Typical (psec.) |
| | | | V_{R1} | V_{R2} | | | |
| BD-1 | 1.0 | 20 | 440 | 440 | 10.0 | 120 | 1.0 |
| BD-2 | 0.5 | 10 | 420 | 465 | 5.0 | 130 | 0.7 |
| BD-3 | 0.2 | 10 | 400 | 465 | 2.0 | 170 | 0.5 |
| BD-4 | 0.1 | 10 | 380 | 465 | 1.0 | 170 | 0.4 |
| BD-5 | 0.05 | 10 | 350 | 465 | 0.5 | 160 | 0.4 |
| BD-6 | 0.02 | 10 | 330 | 465 | 0.2 | 160 | 0.4 |
| BD-7 | 0.01 | 10 | 300 | 465 | 0.1 | 160 | 0.4 |

* Military version available