

## Variable Capacitance Diodes

| Application     | Type No.         | $V_R$ (V) |          | $C_{D1}$ (pF)   | $C_{D2}$ (pF) |               | $r_D$ ( $\Omega$ ) | Package                 | No.     |
|-----------------|------------------|-----------|----------|-----------------|---------------|---------------|--------------------|-------------------------|---------|
|                 |                  | $V_{R1}$  | $V_{R2}$ |                 | $V_{R1}$      | $V_{R2}$      |                    |                         |         |
| UHF/VHF Tuning  | MA321            | 30        | 2        | 13.66 ~ 16.66   | 25            | 2.10 ~ 2.56   | < 0.5              | Mini (2 pins)           | D9      |
|                 | MA334            | 30        | 3        | 10.33 ~ 12.90   | 25            | 2.01 ~ 2.51   | < 0.66             | Mini (2 pins)           | D9      |
|                 | MA344            | 30        | 3        | 10.33 ~ 12.90   | 25            | 2.01 ~ 2.51   | < 0.66             | Mini (6 pins)           | D13     |
|                 | MA360            | 30        | 2        | 13.66 ~ 16.66   | 25            | 2.10 ~ 2.56   | < 0.5              | S Mini (2 pins)         | D4      |
|                 | MA339            | 30        | 2        | 14.000 ~ 15.940 | 25            | 2.1 ~ 2.391   | < 0.45             | Mini (2 pins)           | D9      |
|                 | MA363            | 30        | 3        | 11.233 ~        | 25            | 2.02 ~        | < 0.72             | S Mini (2 pins)         | D4      |
|                 | MA372            | 30        | 2        | 14.009 ~ 15.940 | 25            | 2.1 ~ 2.391   | < 0.45             | S Mini (2 pins)         | D4      |
|                 | $\Delta$ MA2S372 | 30        | 2        | 14.009 ~ 15.940 | 25            | 2.1 ~ 2.391   | < 0.45             | SS Mini (2 pins)        | D84     |
| All Band Tuning | MA372J           | 32        | 2        | 14.220 ~ 15.473 | 25            | 2.132 ~ 2.321 | < 0.45             | S Mini (Special 2 pins) | —       |
|                 | MA329            | 32        | 3        | 26.00 ~ 32.47   | 25            | 2.60 ~ 3.18   | < 1.2              | Mini (2 pins)           | D9      |
|                 | MA335            | 32        | 2        | 29.40 ~ 36.93   | 25            | 2.58 ~ 3.19   | < 0.8              | Mini 2 pins             | D9      |
|                 | MA338            | 34        | 2        | 27.13 ~ 32.15   | 25            | 2.60 ~ 3.15   | < 0.63             | Mini 2 pins             | D9      |
|                 | MA366            | 34        | 2        | 27.13 ~ 32.15   | 25            | 2.60 ~ 3.15   | < 0.63             | S Mini 2 pins           | D4      |
|                 | MA337            | 32        | 2        | 27.13 ~ 32.15   | 25            | 2.60 ~ 3.15   | < 0.7              | Mini 2 pins             | D9      |
| CATV Tuning     | MA365            | 32        | 2        | 27.13 ~ 32.15   | 25            | 2.60 ~ 3.15   | < 0.7              | S Mini 2 pins           | D4      |
|                 | MA353            | 32        | 2        | 34.00 ~ 37.92   | 25            | 2.7 ~ 3.133   | < 0.75             | Mini 2 pins             | D9      |
|                 | MA371            | 32        | 2        | 34.00 ~ 37.92   | 25            | 2.7 ~ 3.133   | < 0.75             | S Mini 2 pins           | D4      |
|                 | $\Delta$ MA374   | 32        | 2        | 41.00 ~ 49.49   | 25            | 2.7 ~ 3.391   | < 1.2              | S Mini 2 pins           | D4      |
|                 | MA357            | 34        | 2        | 29.00 ~ 33.00   | 25            | 2.53 ~ 2.92   | < 0.63             | S Mini 2 pins           | D4      |
| UHF/VHF Tuning  | $\Delta$ MA2S357 | 34        | 2        | 29.00 ~ 33.00   | 25            | 2.53 ~ 2.92   | < 0.63             | SS Mini 2 pins          | D84     |
|                 | MA370            | 30        | 1        | 3.6 ~ 5.6       | 30            | 0.5 ~ 0.9     | 2                  | Mini (3 pins)           | D10     |
| UHF/VHF AFC     | MA368            | 30        | 1        | 3.6 ~ 5.6       | 30            | 0.5 ~ 0.9     | 2                  | S Mini (2 pins)         | D4      |
|                 | MA341            | 30        | 2        | 10.5 ~ 16.0     | 10            | 3.3 ~ 5.7     | < 1.2              | Mini (2 pins)           | D9      |
| FM-AM AFC       | MA367            | 30        | 2        | 10.5 ~ 16.0     | 10            | 3.3 ~ 5.7     | < 1.2              | S Mini (2 pins)         | D4      |
|                 | $\Delta$ MA2S367 | 30        | 2        | 10.5 ~ 16.0     | 10            | 3.3 ~ 5.7     | < 1.2              | SS Mini (2 pins)        | D84     |
|                 | MA840            | 28        | 2        | 10.5 ~ 16.0     | 10            | 3.3 ~ 5.7     | < 1.2              | DO-34                   | D27     |
| VCO             | MA345            | 15        | 10       | 10 ~ 16         | —             | —             | —                  | DO-35                   | D30     |
|                 | MA346            | 15        | 10       | 10 ~ 16         | —             | —             | —                  | DO-34                   | D26     |
|                 | MA348            | 15        | 10       | 10 ~ 16         | —             | —             | —                  | Mini (4 pins)           | D11 (b) |
|                 | MA331            | 12        | 2        | 14.0            | 10            | 6.5           | 0.3                | S Mini (2 pins)         | D4      |
| VCO             | $\Delta$ MA2S331 | 12        | 2        | 14.0            | 10            | 6.5           | 0.3                | SS Mini (2 pins)        | D84     |
|                 | $\Delta$ MA377   | 12        | 1        | 3.7 ~ 4.1       | 2             | 2.9 ~ 3.3     | 0.25               | S Mini (2 pins)         | D4      |
|                 | $\Delta$ MA376   | 6         | 1        | 15.0            | 25            | 6.0           | < 0.2              | S Mini (2 pins)         | D4      |
|                 | $\Delta$ MA2S376 | 6         | 1        | 15.0            | 25            | 6.0           | < 0.2              | SS Mini (2 pins)        | D84     |
|                 | $\Delta$ MA304   | 15        | 1        | 24.8 ~ 29.8     | 4             | 6 ~ 8.3       | < 1.0              | S Mini (2 pins)         | D4      |
|                 | MA333 *          | 9         | 2        | 13.5 ~          | 6             | ~ 4.5         | < 0.35             | Mini (2 pins)           | D9      |
|                 | MA391 *          | 10        | 1        | ~ 5.0           | 4             | 1.0 ~         | < 0.5              | S Mini (2 pins)         | D4      |
|                 | MA392 *          | 10        | 1        | 3.5 ~ 6.5       | 4             | 1.0 ~ 2.6     | < 0.4              | S Mini (2 pins)         | D4      |
|                 | MA393 *          | 10        | 1        | 8 ~ 13          | 4             | 2.1 ~ 5.1     | < 0.4              | S Mini (2 pins)         | D4      |

\* GaAs  $\Delta$ Preliminary

## Silicon Rectifiers

| Type No. | $V_{RM}$ (V) | $I_{F(AV)}$ (mA) | $I_{FRM}$ (mA) | $I_{FSM}$ (A) | $I_R$ max. ( $\mu$ A) | $V_F$ max. (V) | Package             | No. |
|----------|--------------|------------------|----------------|---------------|-----------------------|----------------|---------------------|-----|
| MA158    | 200          | 100              | 225            | 0.5           | 0.2                   | 1.3            | Mini Type (3 pins)  | D10 |
| MA291    | 200          | 200              | 300            | 6             | 1                     | 1.3            | Mini Power (2 pins) | D14 |

## Zener Diodes

### MA4000 Series Bidirectional

| Zener Voltage $V_Z$ (V) | Type No. | $I_Z$ (mA) |
|-------------------------|----------|------------|
| 8.2 ~ 10.0              | MA4091X  | 20         |

### MA1000 Series, MA4000 Series

| Zener Voltage $V_Z$ (V) | MA1000/4000 Series   |  | $V_Z$ Rank Classification |               |               |
|-------------------------|----------------------|--|---------------------------|---------------|---------------|
|                         | Package No.          | * $P_D = 500/370mW$<br>$P_{ZSM} = 30W$ | $I_Z$ (mA)                | L Rank        | M Rank        |
| 1.88 ~ 2.24             |                      |  |                           |               |               |
| 2.08 ~ 2.45             | MA1022/4022          | 5                                      | 2.08 ~ 2.33               | —             | 2.20 ~ 2.45   |
| 2.28 ~ 2.70             | MA1024/4024          | 5                                      | 2.28 ~ 2.56               | —             | 2.40 ~ 2.70   |
| 2.50 ~ 2.90             | MA1027/4027          | 5                                      | 2.50 ~ 2.75               | —             | 2.65 ~ 2.90   |
| 2.80 ~ 3.20             | MA1030/4030          | 5                                      | 2.83 ~ 2.97               | 2.93 ~ 3.08   | 3.02 ~ 3.18   |
| 3.10 ~ 3.50             | MA1033/4033          | 5                                      | 3.12 ~ 3.28               | 3.22 ~ 3.38   | 3.32 ~ 3.49   |
| 3.40 ~ 3.80             | MA1036/4036          | 5                                      | 3.41 ~ 3.59               | 3.51 ~ 3.69   | 3.61 ~ 3.79   |
| 3.70 ~ 4.10             | MA1039/4039          | 5                                      | 3.71 ~ 3.90               | 3.80 ~ 4.00   | 3.90 ~ 4.10   |
| 4.00 ~ 4.60             | MA1043/4043          | 5                                      | 4.03 ~ 4.26               | 4.17 ~ 4.40   | 4.31 ~ 4.54   |
| 4.40 ~ 5.00             | MA1047/4047          | 5                                      | 4.45 ~ 4.69               | 4.59 ~ 4.83   | 4.74 ~ 4.99   |
| 4.80 ~ 5.40             | MA1051/4051          | 5                                      | 4.87 ~ 5.12               | 5.00 ~ 5.26   | 5.14 ~ 5.40   |
| 5.30 ~ 6.00             | MA1056/4056          | 5                                      | 5.30 ~ 5.58               | 5.48 ~ 5.76   | 5.66 ~ 5.95   |
| 5.80 ~ 6.60             | MA1062/4062          | 5                                      | 5.85 ~ 6.15               | 6.05 ~ 6.36   | 6.24 ~ 6.56   |
| 6.40 ~ 7.20             | MA1068/4068          | 5                                      | 6.44 ~ 6.77               | 6.64 ~ 6.98   | 6.85 ~ 7.20   |
| 7.00 ~ 7.90             | MA1075/4075          | 5                                      | 7.07 ~ 7.43               | 7.29 ~ 7.67   | 7.51 ~ 7.89   |
| 8.70 ~ 8.70             | MA1082/4082          | 5                                      | 7.77 ~ 8.17               | 8.03 ~ 8.43   | 8.29 ~ 8.70   |
| 8.50 ~ 9.60             | MA1091/4091          | 5                                      | 8.58 ~ 9.02               | 8.87 ~ 9.33   | 9.14 ~ 9.60   |
| 9.40 ~ 10.60            | MA1100/4100          | 5                                      | 9.44 ~ 9.92               | 9.75 ~ 10.25  | 10.07 ~ 10.59 |
| 10.40 ~ 11.60           | MA1110/4110          | 5                                      | 10.40 ~ 10.94             | 10.73 ~ 11.28 | 11.05 ~ 11.60 |
| 11.40 ~ 12.70           | MA1120/4120          | 5                                      | 11.40 ~ 11.96             | 11.73 ~ 12.33 | 12.06 ~ 12.68 |
| 12.40 ~ 14.10           | MA1130/4130          | 5                                      | 12.40 ~ 12.99             | 12.73 ~ 13.40 | 13.25 ~ 14.08 |
| —                       | MA1140-M/4140-M      | 5                                      | —                         | 13.65 ~ 14.35 | —             |
| 13.90 ~ 15.60           | MA1150/4150          | 5                                      | 13.90 ~ 14.76             | 14.60 ~ 15.35 | 14.95 ~ 15.60 |
| 15.30 ~ 17.10           | MA1160/4160          | 5                                      | 15.30 ~ 16.09             | 15.70 ~ 16.50 | 16.26 ~ 17.10 |
| 16.90 ~ 19.10           | MA1180/4180          | 5                                      | 16.90 ~ 17.76             | 17.55 ~ 18.45 | 18.20 ~ 19.10 |
| 18.80 ~ 21.20           | MA1200/4200          | 5                                      | 18.85 ~ 19.81             | 19.50 ~ 20.50 | 20.15 ~ 21.19 |
| 20.80 ~ 23.30           | MA1220/4220          | 5                                      | 20.80 ~ 21.86             | 21.45 ~ 22.55 | 22.10 ~ 23.24 |
| 22.80 ~ 25.60           | MA1240/4240          | 5                                      | 22.80 ~ 23.97             | 23.50 ~ 24.70 | 24.35 ~ 25.60 |
| 25.10 ~ 28.90           | MA1270/4270          | 2                                      | 25.30 ~ 26.70             | 26.30 ~ 27.70 | 27.30 ~ 28.70 |
| 28.00 ~ 32.00           | MA1300/4300          | 2                                      | 28.30 ~ 29.70             | 29.30 ~ 30.80 | 30.20 ~ 31.80 |
| 31.00 ~ 35.00           | MA1330/4330          | 2                                      | 31.20 ~ 32.80             | 32.20 ~ 33.80 | 33.20 ~ 34.90 |
| 34.00 ~ 38.00           | MA1360/4360          | 2                                      | 34.10 ~ 35.90             | 35.10 ~ 36.90 | 36.10 ~ 37.90 |
| 37.00 ~ 41.00           | $\Delta$ MA1390/4390 | 2                                      | 37.10 ~ 39.00             | 38.00 ~ 40.00 | 39.00 ~ 41.00 |

\* with PCB  $\Delta$ Preliminary

### MA3000 Series (Mini Type (D10))

| Zener Voltage $V_Z$ (V) | Type No. | $I_Z$ (mA) | L Rank        | M Rank        | H Rank        |
|-------------------------|----------|------------|---------------|---------------|---------------|
| 2.28 ~ 2.60             | MA3024   | 5          | —             | —             | —             |
| 2.50 ~ 2.90             | MA3027   | 5          | 2.50 ~ 2.75   | —             | 2.65 ~ 2.90   |
| 2.80 ~ 3.20             | MA3030   | 5          | 2.80 ~ 3.05   | —             | 2.95 ~ 3.20   |
| 3.10 ~ 3.50             | MA3033   | 5          | 3.10 ~ 3.35   | —             | 3.25 ~ 3.50   |
| 3.40 ~ 3.80             | MA3036   | 5          | 3.40 ~ 3.65   | —             | 3.55 ~ 3.80   |
| 3.70 ~ 4.10             | MA3039   | 5          | 3.70 ~ 3.97   | —             | 3.87 ~ 4.10   |
| 4.00 ~ 4.60             | MA3043   | 5          | 4.03 ~ 4.26   | 4.17 ~ 4.40   | 4.31 ~ 4.54   |
| 4.40 ~ 5.00             | MA3047   | 5          | 4.45 ~ 4.69   | 4.59 ~ 4.83   | 4.74 ~ 4.99   |
| 4.80 ~ 5.40             | MA3051   | 5          | 4.87 ~ 5.12   | 5.00 ~ 5.26   | 5.14 ~ 5.40   |
| 5.30 ~ 6.00             | MA3056   | 5          | 5.30 ~ 5.58   | 5.48 ~ 5.76   | 5.66 ~ 5.95   |
| 5.80 ~ 6.60             | MA3062   | 5          | 5.85 ~ 6.15   | 6.05 ~ 6.36   | 6.24 ~ 6.56   |
| 6.40 ~ 7.20             | MA3068   | 5          | 6.44 ~ 6.77   | 6.64 ~ 6.98   | 6.85 ~ 7.20   |
| 7.00 ~ 7.90             | MA3075   | 5          | 7.07 ~ 7.43   | 7.29 ~ 7.67   | 7.51 ~ 7.89   |
| 7.70 ~ 8.70             | MA3082   | 5          | 7.77 ~ 8.17   | 8.03 ~ 8.43   | 8.29 ~ 8.70   |
| 8.50 ~ 9.60             | MA3091   | 5          | 8.58 ~ 9.02   | 8.87 ~ 9.33   | 9.14 ~ 9.60   |
| 9.40 ~ 10.60            | MA3100   | 5          | 9.44 ~ 9.92   | 9.75 ~ 10.25  | 10.07 ~ 10.59 |
| 10.4 ~ 11.6             | MA3110   | 5          | 10.40 ~ 10.94 | 10.73 ~ 11.28 | 11.05 ~ 11.60 |
| 11.4 ~ 12.7             | MA3120   | 5          | 11.40 ~ 11.96 | 11.73 ~ 12.33 | 12.06 ~ 12.68 |
| 12.4 ~ 14.1             | MA3130   | 5          | 12.40 ~ 12.99 | 12.73 ~ 13.40 | 13.25 ~ 14.08 |
| —                       | MA3140-M | 5          | —             | 13.65 ~ 14.35 | —             |
| 13.9 ~ 15.6             | MA3150   | 5          | 13.90 ~ 14.76 | 14.60 ~ 15.35 | 14.95 ~ 15.60 |
| 15.3 ~ 17.1             | MA3160   | 5          | 15.30 ~ 16.09 | 15.70 ~ 16.50 | 16.26 ~ 17.10 |
| 16.9 ~ 19.1             | MA3180   | 5          | 16.90 ~ 17.76 | 17.55 ~ 18.45 | 18.20 ~ 19.10 |
| 18.8 ~ 21.2             | MA3200   | 5          | 18.85 ~ 19.81 | 19.50 ~ 20.50 | 20.15 ~ 21.19 |
| 20.8 ~ 23.3             | MA3220   | 5          | 20.80 ~ 21.86 | 21.45 ~ 22.55 | 22.10 ~ 23.24 |
| 22.8 ~ 25.6             | MA3240   | 5          | 22.80 ~ 23.97 | 23.50 ~ 24.70 | 24.35 ~ 25.60 |
| 25.1 ~ 28.9             | MA3270   | 5          | 25.30 ~ 26.70 | 26.30 ~ 27.70 | 27.30 ~ 28.70 |
| 28.0 ~ 32.0             | MA3300   | 5          | 28.30 ~ 29.70 | 29.30 ~ 30.80 | 30.20 ~ 31.80 |
| 31.0 ~ 35.0             | MA3330   | 5          | 31.20 ~ 32.80 | 32.20 ~ 33.80 | 33.20 ~ 34.90 |
| 34.0 ~ 38.0             | MA3360   | 5          | 34.10 ~ 35.90 | 35.10 ~ 36.90 | 36.10 ~ 37.90 |

\* with PCB