

# Microwave Oscillators, Low-Power Klystrons

| Mfr       | Model            | Operating Frequency Range (GHz) | Electronic Tuning Range (MHz) | Output Power Min-Max (mW) | FM Modulation Sensitivity (MHz/V) | Notes    | Price (\$) | Mfr       | Model           | Operating Frequency Range (GHz) | Electronic Tuning Range (MHz) | Output Power Min-Max (mW) | FM Modulation Sensitivity (MHz/V) | Notes  | Price (\$) |
|-----------|------------------|---------------------------------|-------------------------------|---------------------------|-----------------------------------|----------|------------|-----------|-----------------|---------------------------------|-------------------------------|---------------------------|-----------------------------------|--------|------------|
| Sperry    | SRU-4194         | 15.0-17.5                       | 50 min                        | 80 min                    | ina                               | ab       | req        | EEV/CEI   | K038            | 33.5-36.0                       | 60                            | 250 typ                   | ina                               |        | req        |
| Sperry    | SRU-419          | 15.5-17.5                       | 30 min                        | 150 min                   | ina                               | ab       | req        | EEV/CEI   | K039            | 33.5-36.0                       | 60                            | 30 typ                    | ina                               |        | req        |
| Sperry    | SRU-4191         | 15.5-17.5                       | 40 min                        | 150 min                   | ina                               | ab       | req        | Sperry    | SRU-4401        | 35.9-36.1                       | 75 min                        | 50 min                    | ina                               | ab (2) | req        |
| Sperry    | SRU-2163         | 16.5-17.5                       | 100 min                       | 500 min                   | ina                               | ab       | req        | Beam Tube | 358T/A          | 32-37                           | ina                           | 200-600                   | ina                               | ab     | 1144       |
| Sperry    | SRU-4438         | 16.5-17.5                       | 50 min                        | 30 min                    | ina                               | ab (2)   | req        | OKI       | 35V10           | 32-37                           | 100                           | 75 typ                    | 1.7                               | ab     | 695        |
| Sperry    | SRU-4196         | 17.1-17.5                       | 40 min                        | 300 min                   | ina                               | ab       | req        | OKI       | 35V11           | 32-37                           | 90                            | 220 typ                   | 2.0                               | ab     | 1075       |
| Gencam    | R9676            | 12.4-18.0                       | 60                            | 300 typ                   | ina                               | ab       | req        | OKI       | 35V12           | 32-37                           | 90                            | 650 typ                   | 1.9                               | ab     | 1310       |
| Varian    | VA-308 (series)  | 14.0-18.0                       | 50                            | 800 min                   | 0.4                               | a        | req        | Gencam    | R9674           | 26.5-37.5                       | 70                            | 200 typ                   | ina                               | ab     | req        |
| Varian    | VA-309 (series)  | 14.0-18.0                       | 40                            | 250 min                   | 1.0                               | a        | req        | Gencam    | R9546           | 32.3-37.5                       | 77                            | 60 typ                    | ina                               | ab     | req        |
| Gencam    | R9626            | 15.0-18.0                       | 60                            | 100 typ                   | ina                               | ab       | req        | OKI       | 36V12           | 33-38                           | 90                            | 650 typ                   | 1.9                               | ab     | 1325       |
|           |                  |                                 |                               |                           |                                   |          |            | Sperry    | SRV-4406        | 38.4-38.6                       | 50 min                        | 20 min                    | ina                               | ab (2) | req        |
| Varian    | VA-311 (series)  | 15.0-18.0                       | 50                            | 20 min                    | 1.5                               | a        | req        | Varian    | VA-322 (series) | 26.5-40.0                       | 90                            | 300 min                   | ina                               | a      | req        |
| OKI       | 17V10            | 15.5-18.5                       | 45                            | 100 typ                   | 0.5                               | ab       | 485        | Gencam    | R9521           | 35.0-40.0                       | 85                            | 60 typ                    | ina                               | ab     | req        |
| Sperry    | SRK-4650         | 18.45-18.55                     | 80 min                        | 500 min                   | ina                               | ab       | req        | Beam Tube | 408T/A          | 37-42                           | ina                           | 200-700                   | ina                               | ab     | 1144       |
| Sperry    | SRK-4660         | 18.3-18.7                       | 80 min                        | 500 min                   | ina                               | ab       | req        | OKI       | 40V10           | 37-42                           | 90                            | 90 typ                    | 2.3                               | ab     | 885        |
| Varian    | V-408, 40C       | 15.0-21.0                       | ina                           | 20 min                    | ina                               | a        | req        | OKI       | 40V12           | 37-42                           | 100                           | 500 typ                   | 2.5                               | ab     | 1350       |
| Sperry    | SOK-2922         | 21.6                            | 10 min                        | 500 min                   | ina                               | k (3)    | req        | Varian    | VA-302 (series) | 40.0-45.0                       | 50                            | 100 min                   | ina                               | a      | req        |
| Varian    | V-253 (series)   | 15.0-22.0                       | 40                            | 150 min                   | 2.0                               | a        | req        | OKI       | 45V10           | 42-48                           | 100                           | 85 typ                    | 3.0                               | ab     | 925        |
| OKI       | 20V10            | 18-22                           | 45                            | 150 typ                   | 0.6                               | ab       | 515        | OKI       | 45V12           | 42-48                           | 100                           | 250 typ                   | 3.0                               | ab     | 1385       |
| Sperry    | SRK-4642         | 21.9-22.1                       | 70 min                        | 30 min                    | ina                               | ab (2)   | req        | Beam Tube | 458T/A          | 42-49                           | ina                           | 150-600                   | ina                               | ab     | 1199       |
| Gencam    | R9622            | 18.0-22.5                       | 60                            | 100 typ                   | ina                               | ab       | req        | Beam Tube | 478T/A          | 43-51                           | ina                           | 200-800                   | ina                               | ab     | 1199       |
|           |                  |                                 |                               |                           |                                   |          |            | OKI       | 47V10           | 43-51                           | 150                           | 80 typ                    | 4.5                               | ab     | 975        |
| Sperry    | SOK-2921         | 23.8                            | 10 min                        | 500 min                   | ina                               | k (3)    | req        | OKI       | 47V11           | 43-51                           | 120                           | 160 typ                   | 3.5                               | ab     | 1190       |
| OKI       | 22V10            | 20-24                           | 35                            | 165 typ                   | 0.5                               | ab       | 525        | OKI       | 47V12           | 43-51                           | 120                           | 220 typ                   | 3.5                               | ab     | 1425       |
| Gencam    | R9621            | 22.0-24.0                       | 60                            | 100 typ                   | ina                               | ab       | req        | Beam Tube | 508T/A          | 46-54                           | ina                           | 200-800                   | ina                               | ab     | 1144       |
| Sperry    | SRK-4640         | 23.95-24.05                     | 100 min                       | 100 min                   | ina                               | ab (2)   | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Varian    | VA-98 (series)   | 23.6-24.4                       | 50                            | 100 min                   | ina                               | a        | req        | OKI       | 50V10           | 46-54                           | 140                           | 60 typ                    | 4.5                               | ab     | 1030       |
| Klystrons | TK50             | 23.5-24.5                       | 70                            | 15 min                    | ina                               |          | req        | OKI       | 50V11           | 46-54                           | 145                           | 160 typ                   | 4.5                               | ab     | 1350       |
| Sperry    | SRK-4780         | 23.5-24.5                       | 60 min                        | 400 min                   | ina                               | ab       | req        | OKI       | 55V10           | 52-58                           | 140                           | 65 typ                    | 5.2                               | ab     | 1085       |
| Sperry    | SRK-4641         | 24.55-24.65                     | 60 min                        | 225 min                   | ina                               | ab (2)   | req        | OKI       | 55V11           | 52-58                           | 190                           | 150 typ                   | 5.0                               | ab     | 1390       |
| Sperry    | SRK-4781         | 24.0-25.0                       | 60 min                        | 400 min                   | ina                               | ab       | req        | Beam Tube | 558T/A          | 51-59                           | ina                           | 150-400                   | ina                               | ab     | 1320       |
| Sperry    | SRK-4762         | 25.7                            | n/a                           | 75 min                    | ina                               | abkz     | req        | OKI       | 60V10           | 57-63                           | 140                           | 65 typ                    | 5.0                               | ab     | 1595       |
| Sperry    | SRV-5270         | 30.4-30.6                       | 75 min                        | 100 min                   | ina                               | ab (2)   | req        | OKI       | 60V12           | 57-63                           | 150                           | 200 typ                   | 5.2                               | ab     | 1860       |
| OKI       | 24V10A           | 22-26                           | 50                            | 250 typ                   | 0.8                               | ab       | 525        | Beam Tube | 608T/A          | 55-65                           | ina                           | 80-200                    | ina                               | ab     | 1760       |
| OKI       | 24V11            | 22-26                           | 50                            | 600 typ                   | 0.5                               | ab       | 950        |           |                 |                                 |                               |                           |                                   |        |            |
| Gencam    | R9602            | 22.5-26.0                       | 60                            | 100 typ                   | ina                               | ab       | req        | Beam Tube | 658T/A          | 60-70                           | ina                           | 60-130                    | ina                               | ab     | 2310       |
| Gencam    | R9675            | 18.0-26.5                       | 60                            | 250 typ                   | ina                               | ab       | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Varian    | EM-1138 (series) | 18.0-26.5                       | 50                            | 200 min                   | ina                               | a        | req        | MET/IEC   | YK1010          | 67-73                           | 100                           | 100 typ                   | ina                               | u      | req        |
| Varian    | EM-1188 (series) | 18.0-26.5                       | 70                            | 500 min                   | ina                               | a        | req        | Beam Tube | 708T/A          | 65-75                           | ina                           | 60-130                    | ina                               | ab     | 2387       |
| Varian    | VA-282 (series)  | 18.0-26.5                       | 40                            | 450 min                   | ina                               | a        | req        | OKI       | 70V10           | 65-75                           | 140                           | 65 typ                    | 4.0                               | ab     | 1995       |
| Gencam    | R9729            | 26.0-29.0                       | 68                            | 70 typ                    | ina                               | ab       | req        | OKI       | 70V11A          | 65-75                           | 165                           | 180 typ                   | 5.5                               | ab     | 2450       |
| OKI       | 28V12            | 26-30                           | 75                            | 600 typ                   | 0.6                               | ab       | 1175       | Varian    | VRE-2101A       | 43-80                           | 100                           | 500 min                   | ina                               | a      | req        |
| Beam Tube | 308T/A           | 27-32                           | ina                           | 200-600                   | ina                               | ab       | 1144       | Varian    | VRE-2102A       | 43-80                           | 100                           | 350 min                   | ina                               | a      | req        |
| OKI       | 30V10            | 27-32                           | 70                            | 75 typ                    | 0.7                               | ab       | 585        | Varian    | VRE-2103A       | 43-80                           | 100                           | 150 min                   | ina                               | a      | req        |
| OKI       | 30V11            | 27-32                           | 75                            | 225 typ                   | 0.65                              | ab       | 995        | Varian    | VRE-2103B       | 43-80                           | 100                           | 150 min                   | ina                               | a      | req        |
| OKI       | 30V12            | 27-32                           | 70                            | 600 typ                   | 0.65                              | ab       | 1240       | Varian    | VRE-2104A       | 43-80                           | 100                           | 50 min                    | ina                               | a      | req        |
| Sperry    | SRV-4400         | 31.9-32.1                       | 50 min                        | 75 min                    | ina                               | ab(2)    | req        | Varian    | VRE-2105A       | 43-80                           | 100                           | 10 min                    | ina                               | a      | req        |
| Gencam    | R9518            | 27.8-32.2                       | 68                            | 80 typ                    | ina                               | ab       | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Sperry    | SRV-4405         | 32.9-33.1                       | 50 min                        | 20 min                    | ina                               | ab (2)   | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Gencam    | R9651            | 31.2-33.7                       | 70                            | 60 typ                    | ina                               | ab       | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Varian    | VA-978           | 32.6-34.0                       | 60                            | 10 min                    | 1.0                               | a        | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Varian    | V-283 (series)   | 26.5-35.0                       | 50                            | 300 min                   | ina                               | a        | req        |           |                 |                                 |                               |                           |                                   |        |            |
| Varian    | VA-312 (series)  | 26.5-35.0                       | 50                            | 100 min                   | ina                               | a        | req        | Beam Tube | 758T/A          | 70-80                           | ina                           | 40-120                    | ina                               | ab     | 2420       |
| Sperry    | SRU-5250         | 34.0-35.0                       | 90 min                        | 10 min                    | ina                               | ab (2)   | req        | OKI       | 80V10A          | 75-85                           | 140                           | 40 typ                    | 4.0                               | ab     | 2350       |
| Sperry    | SRU-5130         | 35.0                            | n/a                           | 10 min                    | ina                               | abkz (2) | req        | OKI       | 80V11           | 75-85                           | 180                           | 150 typ                   | 5.0                               | ab     | 2900       |
| Gencam    | R5146            | 34.2-35.5                       | 70                            | 90 typ                    | ina                               | ab       | req        | OKI       | 90V10           | 85-95                           | 180                           | 30 typ                    | 6.0                               | ab     | 2495       |
| Varian    | VA-97            | 34.0-35.6                       | 60                            | 10 min                    | 1.0                               | a        | req        | OKI       | 90V11           | 85-95                           | 280                           | 90 typ                    | 20.0                              | ab     | 2900       |
| EEV/CEI   | K035             | 34.1-35.6                       | 60                            | 30 typ                    | ina                               |          | req        | Varian    | VRB-            | 90-100                          | 100                           | 50 min                    | ina                               | a      | req        |
| EEV/CEI   | K065             | 34.1-35.6                       | 60                            | 30 typ                    | ina                               |          | req        |           | 2114A           |                                 |                               |                           |                                   |        |            |
| MET/IEC   | K535-50          | 31-36                           | 60                            | 100 typ                   | ina                               | u        | req        | OKI       | 100V10A         | 95-105                          | 250                           | 25 typ                    | 8.0                               | ab     | 2675       |
| OKI       | 33V10            | 31-36                           | 100                           | 75 typ                    | 1.6                               | ab       | 650        | OKI       | 100V11          | 95-105                          | 300                           | 80 typ                    | 20.0                              | ab     | 4450       |
| OKI       | 34V12            | 31-36                           | 95                            | 600 typ                   | 1.8                               | ab       | 1285       | Varian    | VRB-2111A       | 80-110                          | 150                           | 400 min                   | ina                               | a      | req        |