
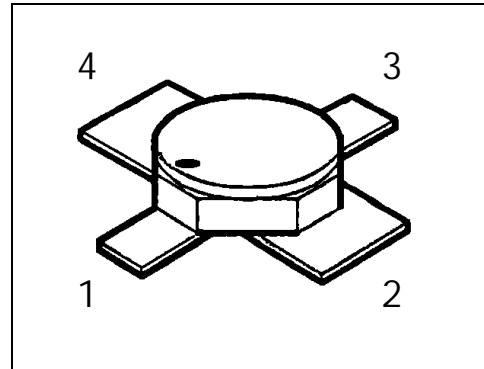


## HiRel Ku-Band GaAs General Purpose MESFET

- **HiRel Discrete and Microwave Semiconductor**
- For professional pre- and driver-amplifiers
- For frequencies from 500 MHz to 20 GHz
- Hermetically sealed microwave package
- High gain, medium power
- **Component Under Development**
-  **esa** Space Qualification Expected 1998  
ESA/SCC Detail Spec. No.: 5613/008,  
Type Variant No.s 06 and 07 foreseen (tbc.)



**ESD:** Electrostatic discharge sensitive device, observe handling precautions!

| Type          | Marking | Ordering Code | Pin Configuration |   |   |   | Package |
|---------------|---------|---------------|-------------------|---|---|---|---------|
|               |         |               | 1                 | 2 | 3 | 4 |         |
| CFY27-38 (ql) | -       | see below     | G                 | S | D | S | Micro-X |
| CFY27-P (ql)  |         |               |                   |   |   |   |         |

CFY27-nnl: specifies gain and output power levels (see electrical characteristics)

|                     |                          |                |            |
|---------------------|--------------------------|----------------|------------|
| (ql) Quality Level: | P: Professional Quality, | Ordering Code: | Q62703F121 |
|                     | H: High Rel Quality,     | Ordering Code: | on request |
|                     | S: Space Quality,        | Ordering Code: | on request |
|                     | ES: ESA Space Quality,   | Ordering Code: | on request |

(see order instructions for ordering example)

## Maximum Ratings

| Parameter                                   | Symbol      | Values        | Unit |
|---|-------------|---------------|------|
| Drain-source voltage                        | $V_{DS}$    | 9             | V    |
| Drain-gate voltage                          | $V_{DG}$    | 11            | V    |
| Gate-source voltage (reverse / forward)     | $V_{GS}$    | - 6... + 0.5  | V    |
| Drain current                               | $I_D$       | 420           | mA   |
| Gate forward current                        | $I_G$       | 5             | mA   |
| RF Input Power, C- and X-Band <sup>1)</sup> | $P_{RF,in}$ | + 20 (tbc.)   | dBm  |
| Junction temperature                        | $T_J$       | 175           | °C   |
| Storage temperature range                   | $T_{stg}$   | - 65... + 175 | °C   |
| Total power dissipation <sup>2)</sup>       | $P_{tot}$   | 900           | mW   |
| Soldering temperature <sup>3)</sup>         | $T_{sol}$   | 230           | °C   |

## Thermal Resistance

|                          |             |              |     |
|--------------------------|-------------|--------------|-----|
| Junction-soldering point | $R_{th,JS}$ | ≤ 150 (tbc.) | K/W |
|--------------------------|-------------|--------------|-----|

### Notes.:

- 1) For  $V_{DS} \leq 5$  V. For  $V_{DS} > 5$  V, derating is required.
- 2) At  $T_S = + 40$  °C. For  $T_S > + 40$  °C derating is required.
- 3) During 15 sec. maximum. The same terminal shall not be resoldered until 3 minutes have elapsed.

Electrical Characteristics (at  $T_A=25^\circ\text{C}$ ; unless otherwise specified)

| Parameter  | Symbol      | Values |      |      | Unit          |
|--|-------------|--------|------|------|---------------|
|  |             | min.   | typ. | max. |               |
| <b>DC Characteristics</b>  |             |        |      |      |               |
| Drain-source saturation current<br>$V_{DS} = 2\text{ V}, V_{GS} = 0\text{ V}$    | $I_{DSS}$   | 150    | 270  | 420  | mA            |
| Gate threshold voltage<br>$V_{DS} = 3\text{ V}, I_D = 1\text{ mA}$               | $-V_{Gth}$  | 1.0    | 2.0  | 3.2  | V             |
| Drain current at pinch-off<br>$V_{DS} = 3\text{ V}, V_{GS} = -4\text{ V}$        | $I_{Dp}$    | -      | < 12 | 60   | $\mu\text{A}$ |
| Gate leakage current at pinch-off<br>$V_{DS} = 3\text{ V}, V_{GS} = -4\text{ V}$ | $-I_{Gp}$   | -      | < 12 | 30   | $\mu\text{A}$ |
| Transconductance<br>$V_{DS} = 3\text{ V}, I_D = 120\text{ mA}$                   | $g_{m120}$  | 130    | 160  | -    | mS            |
| Gate leakage current at operation<br>$V_{DS} = 3\text{ V}, I_D = 120\text{ mA}$  | $-I_{G120}$ | -      | < 3  | -    | $\mu\text{A}$ |
| Thermal resistance<br>junction to soldering point                                | $R_{thJS}$  | -      | 125  | -    | K/W           |

Electrical Characteristics (continued)

| Parameter  | Symbol    | Values |       |      | Unit |
|--|-----------|--------|-------|------|------|
|  |           | min.   | typ.  | max. |      |
| <b>AC Characteristics</b>  |           |        |       |      |      |
| Noise figure <sup>1)</sup><br>$V_{DS} = 3\text{ V}, I_D = 120\text{ mA}, f = 12\text{ GHz}$                                      | NF        |        |       |      | dB   |
| CFY27-P  |           | -      | < 3.6 | -    |      |
| CFY27-38   |           | -      | 3.5   | 3.8  |      |
| Associated gain. <sup>1)</sup><br>$V_{DS} = 3\text{ V}, I_D = 120\text{ mA}, f = 12\text{ GHz}$                                  | $G_a$     |        |       |      | dB   |
| CFY27-P  |           | -      | > 7.8 | -    |      |
| CFY27-38   |           | 7.5    | 8.0   | -    |      |
| Output power at 1 dB gain compression <sup>2)</sup><br>$V_{DS} = 5\text{ V}, I_{D(RF\ off)} = 120\text{ mA}, f = 2.3\text{ GHz}$ | $P_{1dB}$ |        |       |      | dBm  |
| CFY27-P  |           | 24.5   | 26    | -    |      |
| CFY27-38   |           | -      | > 25  | -    |      |
| Linear power gain <sup>2)</sup><br>$V_{DS} = 5\text{ V}, I_D = 120\text{ mA}, f = 2.3\text{ GHz},$<br>$P_{in} = 0\text{ dBm}$    | $G_{lp}$  |        |       |      | dB   |
| CFY27-P  |           | 17.5   | 19    | -    |      |
| CFY27-38   |           | -      | > 18  | -    |      |

**Notes.:**

1) Noise figure / associated gain characteristics given for minimum noise figure matching conditions (fixed generic matching, no fine-tuning).

2) Output power / linear power gain characteristics given for optimum output power matching conditions (fixed generic matching, no fine-tuning).

Typical Common Source S-Parameters CFY27

| V <sub>DS</sub> = 3 V, I <sub>D</sub> = 1.20 mA, Z <sub>0</sub> = 50 Ω |        |         |        |         |        |         |        |         |         |                                  |      |
|--|--------|---------|--------|---------|--------|---------|--------|---------|---------|----------------------------------|------|
| f  | S11    | <S11    | S21    | <S21    | S12    | <S12    | S22    | <S22    | k-Fact. | S <sub>21</sub> /S <sub>12</sub> | MAG  |
| [GHz]  | [magn] | [angle] | [magn] | [angle] | [magn] | [angle] | [magn] | [angle] | [magn]  | [dB]                             | [dB] |
| 0,5  | 0,936  | -43     | 8,720  | 153     | 0,0203 | 68      | 0,149  | -55     | 0,33    | 26,3                             |      |
| 0,6  | 0,921  | -50     | 8,470  | 148     | 0,0245 | 65      | 0,151  | -64     | 0,35    | 25,4                             |      |
| 0,7  | 0,904  | -55     | 8,200  | 143     | 0,0280 | 61      | 0,153  | -72     | 0,38    | 24,7                             |      |
| 0,8  | 0,890  | -62     | 7,943  | 138     | 0,0311 | 57      | 0,156  | -81     | 0,41    | 24,1                             |      |
| 0,9  | 0,876  | -68     | 7,698  | 135     | 0,0333 | 54      | 0,161  | -87     | 0,43    | 23,6                             |      |
| 1,0  | 0,864  | -74     | 7,449  | 130     | 0,0357 | 51      | 0,164  | -94     | 0,46    | 23,2                             |      |
| 1,1  | 0,854  | -80     | 7,198  | 126     | 0,0383 | 49      | 0,169  | -100    | 0,47    | 22,7                             |      |
| 1,2  | 0,846  | -86     | 6,948  | 122     | 0,0407 | 46      | 0,173  | -105    | 0,48    | 22,3                             |      |
| 1,3  | 0,837  | -91     | 6,702  | 119     | 0,0419 | 44      | 0,179  | -110    | 0,51    | 22,0                             |      |
| 1,4  | 0,830  | -96     | 6,465  | 115     | 0,0435 | 43      | 0,186  | -114    | 0,52    | 21,7                             |      |
| 1,5  | 0,823  | -101    | 6,240  | 112     | 0,0448 | 41      | 0,190  | -118    | 0,54    | 21,4                             |      |
| 1,6  | 0,816  | -106    | 5,990  | 109     | 0,0461 | 39      | 0,194  | -122    | 0,57    | 21,1                             |      |
| 1,7  | 0,810  | -110    | 5,805  | 106     | 0,0475 | 38      | 0,199  | -125    | 0,58    | 20,9                             |      |
| 1,8  | 0,804  | -114    | 5,603  | 103     | 0,0486 | 36      | 0,203  | -128    | 0,61    | 20,6                             |      |
| 1,9  | 0,799  | -118    | 5,410  | 100     | 0,0494 | 34      | 0,208  | -131    | 0,63    | 20,4                             |      |
| 2,0  | 0,795  | -122    | 5,225  | 97      | 0,0502 | 33      | 0,212  | -134    | 0,65    | 20,2                             |      |
| 2,1  | 0,791  | -126    | 5,030  | 94      | 0,0508 | 32      | 0,216  | -137    | 0,68    | 20,0                             |      |
| 2,2  | 0,788  | -130    | 4,877  | 92      | 0,0513 | 31      | 0,219  | -139    | 0,70    | 19,8                             |      |
| 2,3  | 0,784  | -133    | 4,718  | 89      | 0,0519 | 30      | 0,222  | -142    | 0,73    | 19,6                             |      |
| 2,4  | 0,781  | -136    | 4,569  | 87      | 0,0524 | 29      | 0,225  | -144    | 0,75    | 19,4                             |      |
| 2,5  | 0,779  | -139    | 4,429  | 84      | 0,0528 | 28      | 0,227  | -147    | 0,78    | 19,2                             |      |
| 2,6  | 0,776  | -142    | 4,296  | 82      | 0,0532 | 27      | 0,229  | -149    | 0,80    | 19,1                             |      |
| 2,7  | 0,773  | -145    | 4,170  | 80      | 0,0537 | 26      | 0,232  | -150    | 0,83    | 18,9                             |      |
| 2,8  | 0,771  | -148    | 4,047  | 78      | 0,0540 | 25      | 0,235  | -152    | 0,85    | 18,7                             |      |
| 2,9  | 0,769  | -150    | 3,936  | 76      | 0,0543 | 25      | 0,237  | -154    | 0,88    | 18,6                             |      |
| 3,0  | 0,767  | -153    | 3,829  | 74      | 0,0545 | 24      | 0,240  | -155    | 0,91    | 18,5                             |      |
| 3,1  | 0,765  | -155    | 3,729  | 72      | 0,0547 | 24      | 0,242  | -157    | 0,93    | 18,3                             |      |
| 3,2  | 0,764  | -157    | 3,633  | 70      | 0,0550 | 23      | 0,244  | -159    | 0,96    | 18,2                             |      |
| 3,3  | 0,763  | -160    | 3,539  | 68      | 0,0554 | 23      | 0,246  | -160    | 0,98    | 18,1                             |      |
| 3,4  | 0,762  | -162    | 3,450  | 66      | 0,0556 | 22      | 0,249  | -162    | 1,01    | 17,9                             | 17,5 |
| 3,5  | 0,761  | -164    | 3,367  | 64      | 0,0559 | 22      | 0,251  | -164    | 1,03    | 17,8                             | 16,8 |
| 4,0  | 0,758  | -174    | 3,014  | 54      | 0,0574 | 21      | 0,266  | -171    | 1,13    | 17,2                             | 15,0 |
| 4,5  | 0,757  | 177     | 2,713  | 46      | 0,0594 | 20      | 0,283  | -178    | 1,21    | 16,6                             | 13,8 |
| 5,0  | 0,759  | 169     | 2,513  | 38      | 0,0620 | 20      | 0,300  | 177     | 1,25    | 16,1                             | 13,1 |
| 5,5  | 0,761  | 161     | 2,310  | 30      | 0,0644 | 19      | 0,316  | 171     | 1,30    | 15,5                             | 12,3 |
| 6,0  | 0,763  | 154     | 2,133  | 22      | 0,0676 | 18      | 0,332  | 166     | 1,32    | 15,0                             | 11,6 |
| 6,5  | 0,764  | 147     | 1,983  | 15      | 0,0709 | 17      | 0,349  | 160     | 1,35    | 14,5                             | 10,9 |
| 7,0  | 0,766  | 140     | 1,856  | 8       | 0,0751 | 15      | 0,366  | 154     | 1,35    | 13,9                             | 10,4 |
| 7,5  | 0,768  | 133     | 1,747  | 0       | 0,0801 | 14      | 0,381  | 149     | 1,33    | 13,4                             | 9,9  |
| 8,0  | 0,771  | 126     | 1,649  | -8      | 0,0849 | 11      | 0,398  | 142     | 1,32    | 12,9                             | 9,5  |
| 8,5  | 0,775  | 119     | 1,561  | -16     | 0,0891 | 8       | 0,414  | 137     | 1,30    | 12,4                             | 9,1  |
| 9,0  | 0,780  | 111     | 1,478  | -23     | 0,0937 | 5       | 0,431  | 131     | 1,28    | 12,0                             | 8,8  |
| 9,5  | 0,787  | 104     | 1,401  | -31     | 0,0981 | 2       | 0,450  | 125     | 1,24    | 11,5                             | 8,6  |
| 10,0   | 0,794  | 97      | 1,329  | -39     | 0,1022 | -2      | 0,469  | 119     | 1,21    | 11,1                             | 8,4  |
| 10,5   | 0,802  | 90      | 1,262  | -47     | 0,1057 | -7      | 0,488  | 112     | 1,18    | 10,8                             | 8,2  |
| 11,0   | 0,810  | 83      | 1,198  | -55     | 0,1083 | -11     | 0,505  | 106     | 1,16    | 10,4                             | 8,0  |
| 11,5   | 0,816  | 77      | 1,138  | -62     | 0,1106 | -16     | 0,525  | 99      | 1,14    | 10,1                             | 7,8  |
| 12,0   | 0,823  | 70      | 1,081  | -70     | 0,1126 | -20     | 0,547  | 93      | 1,13    | 9,8                              | 7,7  |
| 12,5   | 0,829  | 63      | 1,026  | -78     | 0,1138 | -26     | 0,566  | 86      | 1,11    | 9,5                              | 7,5  |
| 13,0   | 0,835  | 56      | 0,974  | -86     | 0,1144 | -31     | 0,584  | 80      | 1,10    | 9,3                              | 7,4  |
| 13,5   | 0,841  | 49      | 0,925  | -94     | 0,1137 | -37     | 0,601  | 73      | 1,10    | 9,1                              | 7,2  |
| 14,0   | 0,846  | 41      | 0,881  | -102    | 0,1128 | -42     | 0,616  | 67      | 1,10    | 8,9                              | 7,0  |
| 14,5   | 0,851  | 34      | 0,839  | -110    | 0,1110 | -48     | 0,631  | 59      | 1,11    | 8,8                              | 6,8  |
| 15,0   | 0,857  | 27      | 0,793  | -119    | 0,1084 | -54     | 0,648  | 52      | 1,12    | 8,6                              | 6,6  |
| 15,5   | 0,863  | 20      | 0,748  | -127    | 0,1047 | -60     | 0,666  | 44      | 1,13    | 8,5                              | 6,4  |
| 16,0   | 0,869  | 12      | 0,702  | -137    | 0,0997 | -67     | 0,688  | 36      | 1,14    | 8,5                              | 6,2  |
| 16,5   | 0,874  | 5       | 0,652  | -147    | 0,0943 | -73     | 0,713  | 27      | 1,17    | 8,4                              | 5,9  |
| 17,0   | 0,881  | -1      | 0,602  | -157    | 0,0892 | -78     | 0,741  | 20      | 1,16    | 8,3                              | 5,9  |
| 17,5   | 0,887  | -7      | 0,555  | -166    | 0,0845 | -83     | 0,772  | 13      | 1,12    | 8,2                              | 6,1  |
| 18,0   | 0,895  | -12     | 0,514  | -176    | 0,0805 | -87     | 0,805  | 6       | 1,04    | 8,1                              | 6,9  |

**Typical Common Source S-Parameters CFY25-20 (continued)**

| $V_{DS} = 5\text{ V}, I_D = 1.20\text{ mA}, Z_o = 50\ \Omega$ |       |       |       |       |        |       |       |       |         |                                  |      |
|---|-------|-------|-------|-------|--------|-------|-------|-------|---------|----------------------------------|------|
| f   | S11   | <S11  | S21   | <S21  | S12    | <S12  | S22   | <S22  | k-Fact. | S <sub>21</sub> /S <sub>12</sub> | MAG  |
| [GHz]   | [mag] | [ang] | [mag] | [ang] | [mag]  | [ang] | [mag] | [ang] | [mag]   | [dB]                             | [dB] |
| 0,5   | 0,937 | -44   | 9,390 | 149   | 0,0152 | 65    | 0,319 | -27   | 0,38    | 27,9                             |      |
| 0,6   | 0,922 | -50   | 9,010 | 146   | 0,0183 | 63    | 0,314 | -30   | 0,40    | 26,9                             |      |
| 0,7   | 0,905 | -56   | 8,720 | 141   | 0,0207 | 61    | 0,309 | -34   | 0,44    | 26,2                             |      |
| 0,8   | 0,889 | -61   | 8,370 | 138   | 0,0231 | 58    | 0,303 | -37   | 0,48    | 25,6                             |      |
| 0,9   | 0,876 | -67   | 8,083 | 134   | 0,0255 | 55    | 0,298 | -41   | 0,50    | 25,0                             |      |
| 1,0   | 0,866 | -73   | 7,823 | 130   | 0,0273 | 52    | 0,292 | -45   | 0,51    | 24,6                             |      |
| 1,1   | 0,857 | -79   | 7,560 | 126   | 0,0289 | 50    | 0,287 | -49   | 0,53    | 24,2                             |      |
| 1,2   | 0,848 | -85   | 7,305 | 122   | 0,0304 | 48    | 0,282 | -52   | 0,55    | 23,8                             |      |
| 1,3   | 0,839 | -90   | 7,046 | 118   | 0,0315 | 45    | 0,278 | -55   | 0,58    | 23,5                             |      |
| 1,4   | 0,832 | -96   | 6,798 | 114   | 0,0326 | 43    | 0,275 | -59   | 0,60    | 23,2                             |      |
| 1,5   | 0,826 | -100  | 6,561 | 111   | 0,0335 | 42    | 0,272 | -62   | 0,62    | 22,9                             |      |
| 1,6   | 0,819 | -105  | 6,327 | 108   | 0,0343 | 40    | 0,269 | -64   | 0,65    | 22,7                             |      |
| 1,7   | 0,813 | -109  | 6,100 | 104   | 0,0348 | 39    | 0,268 | -67   | 0,68    | 22,4                             |      |
| 1,8   | 0,807 | -114  | 5,886 | 101   | 0,0355 | 38    | 0,266 | -70   | 0,71    | 22,2                             |      |
| 1,9   | 0,804 | -118  | 5,681 | 98    | 0,0360 | 37    | 0,265 | -73   | 0,73    | 22,0                             |      |
| 2,0   | 0,800 | -121  | 5,485 | 95    | 0,0364 | 35    | 0,264 | -76   | 0,76    | 21,8                             |      |
| 2,1   | 0,796 | -125  | 5,298 | 93    | 0,0368 | 34    | 0,263 | -79   | 0,79    | 21,6                             |      |
| 2,2   | 0,793 | -129  | 5,122 | 90    | 0,0371 | 34    | 0,263 | -81   | 0,82    | 21,4                             |      |
| 2,3   | 0,790 | -132  | 4,957 | 87    | 0,0375 | 33    | 0,263 | -84   | 0,84    | 21,2                             |      |
| 2,4   | 0,788 | -135  | 4,800 | 85    | 0,0379 | 32    | 0,263 | -86   | 0,87    | 21,0                             |      |
| 2,5   | 0,785 | -138  | 4,654 | 82    | 0,0381 | 32    | 0,263 | -88   | 0,90    | 20,9                             |      |
| 2,6   | 0,784 | -141  | 4,515 | 80    | 0,0384 | 31    | 0,264 | -90   | 0,93    | 20,7                             |      |
| 2,7   | 0,782 | -144  | 4,381 | 78    | 0,0386 | 31    | 0,265 | -92   | 0,95    | 20,6                             |      |
| 2,8   | 0,780 | -147  | 4,253 | 75    | 0,0390 | 31    | 0,266 | -94   | 0,98    | 20,4                             |      |
| 2,9   | 0,778 | -149  | 4,136 | 73    | 0,0392 | 31    | 0,266 | -96   | 1,01    | 20,2                             | 19,6 |
| 3,0   | 0,776 | -152  | 4,020 | 71    | 0,0394 | 31    | 0,267 | -98   | 1,04    | 20,1                             | 18,9 |
| 3,1   | 0,775 | -154  | 3,912 | 69    | 0,0396 | 30    | 0,269 | -100  | 1,07    | 19,9                             | 18,4 |
| 3,2   | 0,774 | -156  | 3,811 | 67    | 0,0398 | 30    | 0,270 | -102  | 1,09    | 19,8                             | 17,9 |
| 3,3   | 0,773 | -159  | 3,714 | 65    | 0,0401 | 30    | 0,272 | -104  | 1,12    | 19,7                             | 17,6 |
| 3,4   | 0,773 | -161  | 3,621 | 63    | 0,0403 | 30    | 0,273 | -106  | 1,14    | 19,5                             | 17,3 |
| 3,5   | 0,772 | -163  | 3,534 | 61    | 0,0406 | 30    | 0,274 | -108  | 1,16    | 19,4                             | 17,0 |
| 4,0   | 0,773 | -173  | 3,163 | 51    | 0,0421 | 32    | 0,285 | -116  | 1,24    | 18,8                             | 15,8 |
| 4,5   | 0,774 | 177   | 2,869 | 42    | 0,0446 | 34    | 0,301 | -125  | 1,27    | 18,1                             | 14,9 |
| 5,0   | 0,777 | 169   | 2,600 | 34    | 0,0480 | 37    | 0,321 | -134  | 1,29    | 17,3                             | 14,1 |
| 5,5   | 0,779 | 161   | 2,383 | 26    | 0,0522 | 38    | 0,343 | -143  | 1,27    | 16,6                             | 13,5 |
| 6,0   | 0,781 | 154   | 2,195 | 18    | 0,0574 | 39    | 0,366 | -151  | 1,24    | 15,8                             | 12,9 |
| 6,5   | 0,784 | 147   | 2,035 | 10    | 0,0642 | 39    | 0,392 | -159  | 1,16    | 15,0                             | 12,6 |
| 7,0   | 0,787 | 140   | 1,918 | 1     | 0,0711 | 37    | 0,413 | -166  | 1,09    | 14,3                             | 12,5 |
| 7,5   | 0,791 | 133   | 1,777 | -7    | 0,0782 | 35    | 0,434 | -174  | 1,04    | 13,6                             | 12,3 |
| 8,0   | 0,796 | 126   | 1,672 | -15   | 0,0859 | 32    | 0,452 | 179   | 0,98    | 12,9                             |      |
| 8,5   | 0,801 | 119   | 1,576 | -23   | 0,0937 | 28    | 0,470 | 171   | 0,92    | 12,3                             |      |
| 9,0   | 0,808 | 111   | 1,486 | -32   | 0,1019 | 24    | 0,490 | 163   | 0,87    | 11,6                             |      |
| 9,5   | 0,816 | 104   | 1,404 | -40   | 0,1092 | 19    | 0,514 | 154   | 0,82    | 11,1                             |      |
| 10,0  | 0,824 | 97    | 1,326 | -48   | 0,1156 | 15    | 0,534 | 145   | 0,78    | 10,6                             |      |
| 10,5  | 0,833 | 90    | 1,252 | -56   | 0,1216 | 9     | 0,555 | 136   | 0,75    | 10,1                             |      |
| 11,0  | 0,842 | 83    | 1,181 | -64   | 0,1270 | 4     | 0,578 | 127   | 0,72    | 9,7                              |      |
| 11,5  | 0,850 | 76    | 1,115 | -72   | 0,1316 | -2    | 0,603 | 119   | 0,68    | 9,3                              |      |
| 12,0  | 0,857 | 69    | 1,051 | -81   | 0,1348 | -8    | 0,628 | 111   | 0,65    | 8,9                              |      |
| 12,5  | 0,862 | 62    | 0,990 | -89   | 0,1372 | -14   | 0,648 | 103   | 0,63    | 8,6                              |      |
| 13,0  | 0,866 | 55    | 0,932 | -97   | 0,1390 | -21   | 0,670 | 96    | 0,61    | 8,3                              |      |
| 13,5  | 0,871 | 48    | 0,877 | -105  | 0,1401 | -27   | 0,688 | 88    | 0,60    | 8,0                              |      |
| 14,0  | 0,874 | 40    | 0,822 | -114  | 0,1403 | -33   | 0,705 | 80    | 0,60    | 7,7                              |      |
| 14,5  | 0,878 | 33    | 0,765 | -122  | 0,1385 | -40   | 0,721 | 72    | 0,60    | 7,4                              |      |
| 15,0  | 0,881 | 25    | 0,721 | -131  | 0,1355 | -47   | 0,739 | 64    | 0,61    | 7,3                              |      |
| 15,5  | 0,883 | 18    | 0,666 | -140  | 0,1312 | -53   | 0,752 | 55    | 0,63    | 7,1                              |      |
| 16,0  | 0,886 | 11    | 0,617 | -150  | 0,1254 | -60   | 0,772 | 46    | 0,64    | 6,9                              |      |
| 16,5  | 0,890 | 4     | 0,558 | -159  | 0,1180 | -66   | 0,793 | 37    | 0,66    | 6,7                              |      |
| 17,0  | 0,892 | -3    | 0,510 | -169  | 0,1112 | -72   | 0,814 | 30    | 0,67    | 6,6                              |      |
| 17,5  | 0,897 | -8    | 0,464 | -178  | 0,1049 | -80   | 0,834 | 21    | 0,62    | 6,5                              |      |
| 18,0  | 0,901 | -15   | 0,421 | 173   | 0,0994 | -86   | 0,858 | 13    | 0,60    | 6,3                              |      |

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**Order Instructions:**

Full type variant including quality level must be specified by the orderer. For *HiRel* Discrete and Microwave Semiconductors the ordering code specifies device family and quality level only.

**Ordering Form:**

Ordering Code: Q.....  
CFY27 -(nnl) (ql)  
-(nnl): Noise Figure and/or Power Level  
(ql): Quality Level

**Ordering Example:**

Ordering Code: Q62703F121  
CFY27-P P  
For CFY27, Gain/Power Level P:  
 $P_{1dB} > 25$  dBm  
in Professional Quality Level

**Further Informations:**

See our WWW-Pages:

- Discrete and RF-Semiconductors (Small Signal Semiconductors)

[www.infineon.com/products/discrete/hirel.htm](http://www.infineon.com/products/discrete/hirel.htm)

- *HiRel* Discrete and Microwave Semiconductors

[www.infineon.com/products/discrete/hirel.htm](http://www.infineon.com/products/discrete/hirel.htm)

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## Micro-X Package

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