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- Please conduct validation and verification of products in actual condition of mounting and operating environment before commercial shipment of the equipment.

- All electronic components or functional modules listed in this catalog are developed, designed and intended for use in general electronics equipment.(for AV, office automation, household, office supply, information service, telecommunications, (such as mobile phone or PC) etc.). Before incorporating the components or devices into any equipment in the field such as transportation,(automotive control, train control, ship control), transportation signal, disaster prevention, medical, public information network (telephone exchange, base station) etc. which may have direct influence to harm or injure a human body, please contact TAIYO YUDEN CO., LTD. for more detail in advance.

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- The contents of this catalog are applicable to the products which are purchased from our sales offices or distributors (so called "TAIYO YUDEN' s official sales channel").

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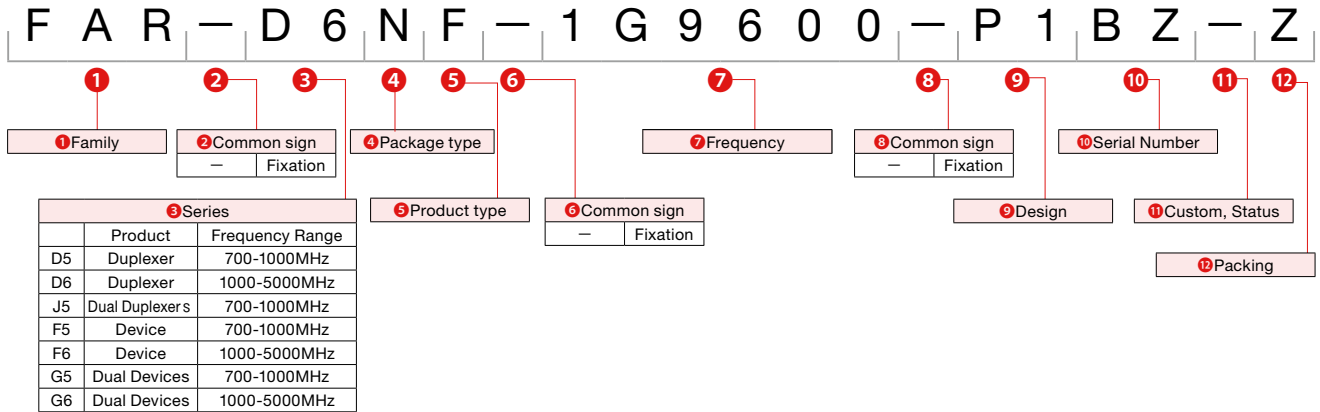
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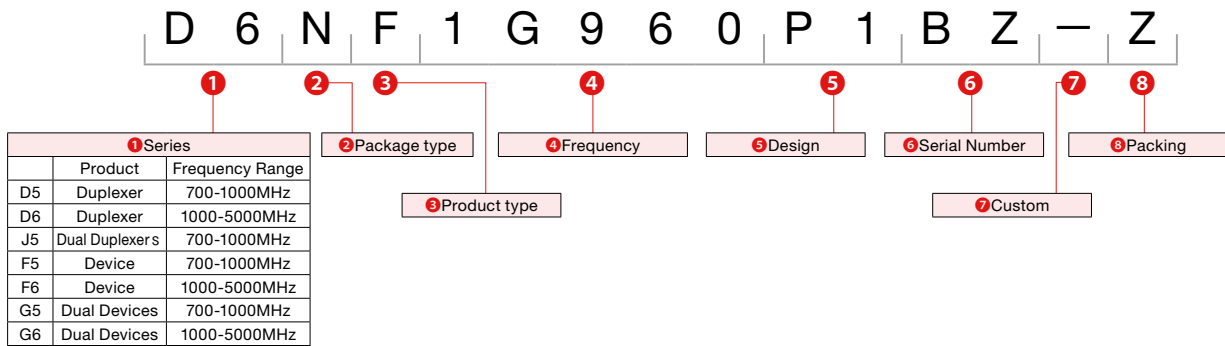
REFLOW

ORDERING CODE

(A) Previous Rule (applied to products registered on March 31, 2010 or before.)

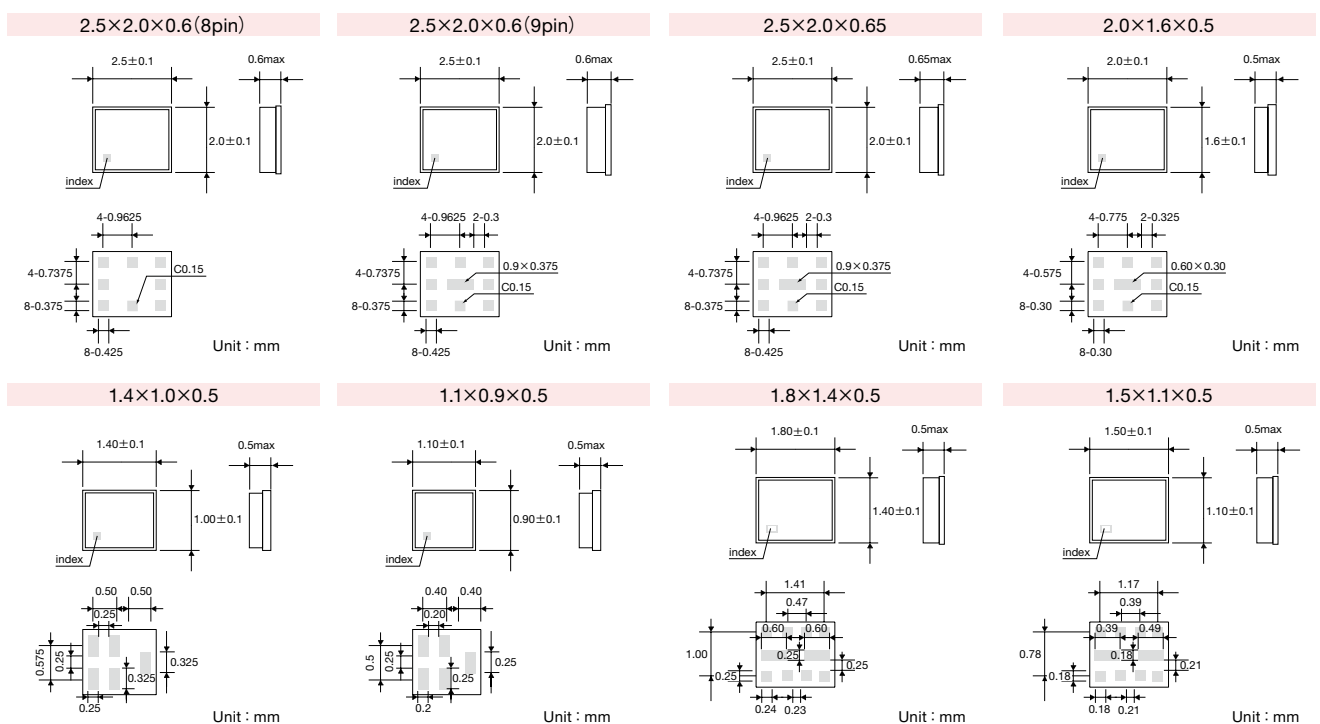


(B) New Rule (applied to products registered on April 1, 2010 or later.)



* For further details, please contact to TAIYO YUDEN Co.,Ltd.

EXTERNAL DIMENSIONS/STANDARD QUANTITY



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PART NUMBERS

Duplexers

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Isolation (dB) | Remarks |
|--------------------|-----------------------|-------------------|---------------------|----------------|--|
| W-CDMA Band 1 | FAR-D6JG-2G1400-D3FZ | 2.5×2.0×0.65 | 1.4/1.7 | 54/47 | 9 Pin, B Type |
| | FAR-D6JH-2G1400-B1BT | 2.5×2.0×0.65 | 1.4/1.7 | 58/48 | 9 Pin, B Type Rx : Bal.100ohm |
| | D6PE2G140P3AW | 2.0×1.6×0.5 | 1.5/1.6 | 59/47 | 9 Pin, B Type Rx : Bal.100ohm |
| PCS/W-CDMA Band 2 | FAR-D6NH-1G9600-M1Z9 | 2.5×2.0×0.65 | 2.2/3.1 | 55/50 | 9 Pin, B Type |
| | FAR-D6NH-1G9600-M1Z6 | 2.5×2.0×0.65 | 2.3/2.7 | 55/53 | 9 Pin, B Type Low Rx IL |
| | D6PF1G960M3B6 | 2.0×1.6×0.57 | 2.2/2.7 | 55/52 | 9 Pin, B Type |
| | FAR-D6NF-1G9600-P1BT | 2.5×2.0×0.65 | 2.5/2.8 | 54/55 | 9 Pin, B Type 100ohm, Low Rx IL |
| | D6NF1G960P1BR | 2.5×2.0×0.65 | 2.5/3.4 | 58/53 | 9 Pin, B Type Rx : Bal.100ohm High GPS Att. & Rx Isol. |
| | D6HH1G960BH95 | 2.5×2.0×0.65 | 2.3/2.5 | 56/53 | 9 Pin, B Type 100ohm |
| | D6PE1G960P3BY | 2.0×1.6×0.57 | 2.0/3.1 | 57/53 | 9 Pin, B Type Rx : Bal.100ohm |
| W-CDMA Band 4 | FAR-D6JH-2G1325-B1YZ | 2.5×2.0×0.65 | 1.5/1.7 | 57/51 | 9 Pin, B Type Rx : Bal.100ohm |
| | D6JG2G132D3GZ | 2.5×2.0×0.65 | 1.6/1.9 | 53/52 | 9 Pin, B Type |
| | D6PE2G132P3DWB | 2.0×1.6×0.5 | 1.8/1.8 | 55/50 | 9 Pin, B Type Rx : Bal.100ohm |
| CDMA/W-CDMA Band 5 | FAR-D5NG-881M50-M11Z | 2.5×2.0×0.6 | 1.45/1.8 | 66/52 | 9 Pin, B Type |
| | FAR-D5PF-881M50-M3E7 | 2.0×1.6×0.5 | 1.5/1.8 | 58/51 | 9 Pin, A Type |
| | FAR-D5PF-881M50-M3E9 | 2.0×1.6×0.5 | 1.5/1.8 | 58/51 | 9 Pin, B Type |
| | FAR-D5NE-881M50-P1A9 | 2.5×2.0×0.6 | 1.6/1.8 | 57/51 | 9 Pin, B Type Rx : Bal.100ohm |
| | FAR-D5NE-881M50-P1A6Q | 2.5×2.0×0.6 | 1.6/1.7 | 60/53 | 9 Pin, B Type 100ohm |
| | FAR-D5PE-881M50-P3EZ | 2.0×1.6×0.5 | 1.4/1.7 | 59/52 | 9 Pin, B Type Rx : Bal.100ohm |
| | FAR-D5PE-881M50-P3EY | 2.0×1.6×0.5 | 1.4/1.7 | 59/52 | 9 Pin, A Type Rx : Bal.100ohm |
| W-CDMA Band 8 | D5NL881M5P1HY | 3.0×2.5×0.7 | 1.6/2.6 | 60/51 | SV-LTE |
| | FAR-D5NH-942M50-M1Y9 | 2.5×2.0×0.65 | 1.8/2.3 | 58/50 | 9 Pin, B Type |
| | FAR-D5NF-942M50-P1GWQ | 2.5×2.0×0.65 | 1.9/2.3 | 59/54 | 9 Pin, B Type 100ohm, GPS High Att. |
| | D5PF942M5M3G9 | 2.0×1.6×0.5 | 1.9/2.2 | 60/52 | 9 Pin, B Type |
| | D5PE942M5P3GT | 2.0×1.6×0.5 | 1.7/2.2 | 58/54 | 9 Pin, B Type Rx : Bal.100ohm |
| LTE Band 13 | D5NL782M0P1JZ | 3.0×2.5×0.7 | 1.9/2.2 | 66/52 | SV-LTE |
| LTE Band 17 | FAR-D5NE-740M0-P1C9 | 2.5×2.0×0.6 | 1.7/2.0 | 61/58 | 9 Pin, B Type Rx : Bal.100ohm |
| | D5PE740M0P3NZ | 2.0×1.6×0.5 | 1.9/2.0 | 63/60 | 9 Pin, B Type Rx : Bal.100ohm |
| CDMA BC0+BC10 | D5NF878M0P1ET | 2.5×2.0×0.65 | 1.9/2.5 | 58/50 | 9 Pin, B Type Rx : Bal.100ohm |
| | D5PE878M0P3UT | 2.0×1.6×0.5 | 1.9/2.2 | 59/51 | 9 Pin, B Type Rx : Bal.100ohm |

CDMA/GSM850/Band 5

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|-----------------------|----------------------|-------------------|---------------------|------------------|-----------------------------|
| CDMA Tx | FAR-F5KB-836M50-B4ER | 1.4×1.0×0.5 | 1.7 | 44 | 100ohm input |
| | FAR-F5KB-836M50-B4EG | 1.4×1.0×0.5 | 1.6 | 42 | 200ohm input |
| | F5QA836M5M2AR | 1.1×0.9×0.5 | 1.9 | 45 | High Att. |
| CDMA/GSM850 Tx | FAR-F5KA-836M50-D4DF | 1.4×1.0×0.5 | 1.9 | 44 | High Att. |
| CDMA/W-CDMA Band 5 Rx | FAR-F5KB-881M50-B4ED | 1.4×1.0×0.5 | 1.5 | 61 | 100ohm output |
| | FAR-F5KY-881M50-B4UZ | 1.4×1.0×0.5 | 1.5 | 61 | 100ohm, High Att. |
| | FAR-F5KB-881M50-B4EJ | 1.4×1.0×0.5 | 1.4 | 64 | 200ohm output |
| | FAR-F5QB-881M50-P2BG | 1.1×0.9×0.5 | 1.5 | 60 | 100ohm output |
| | F5QG881M5P2KG | 1.1×0.9×0.5 | 1.5 | 56 | 100ohm, High Att., Low Loss |
| GSM850/CDMA Rx | FAR-F5KA-881M50-D4DB | 1.4×1.0×0.5 | 1.7 | 56 | High Att. |
| | FAR-F5QA-881M50-M2AF | 1.1×0.9×0.5 | 1.6 | 46 | - |
| GSM850 Rx | FAR-F5KB-881M50-B4EA | 1.4×1.0×0.5 | 1.7 | 53 | 150ohm output |
| | FAR-F5QB-881M50-P2BA | 1.1×0.9×0.5 | 1.3 | 63 | 150ohm output |

CDMA2000 BC0+BC10

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|--------------------|---------------|-------------------|---------------------|------------------|---------------|
| CDMA2000 BC0+10 Tx | F5KA833M0D4DU | 1.4×1.0×0.5 | 2.3 | 43 | High Att. |
| CDMA2000 BC0+10 Rx | F5KY878M0B4ND | 1.4×1.0×0.5 | 2.1 | 53 | 100ohm output |

GSM/EGSM/Band 8

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|---------|----------------------|-------------------|---------------------|------------------|--------------------------|
| EGSM Tx | FAR-F5KA-897M50-D4DC | 1.4×1.0×0.5 | 2.2 | 16 | High Att. |
| | FAR-F5KA-897M50-D4VW | 1.4×1.0×0.5 | 2.6 | 38 | High Att. |
| | F5QA879M5M2AC | 1.1×0.9×0.5 | 2.3 | 18 | - |
| EGSM Rx | FAR-F5KB-942M50-B4ES | 1.4×1.0×0.5 | 2.4 | 29 | 100ohm output |
| | FAR-F5KY-942M50-B4UW | 1.4×1.0×0.5 | 2.0 | 57 | 100ohm output, High Att. |
| | FAR-F5KA-942M50-D4DD | 1.4×1.0×0.5 | 2.0 | 34 | High Att. |
| | FAR-F5KB-942M50-B4EB | 1.4×1.0×0.5 | 1.6 | 26 | 150ohm output |
| | FAR-F5QB-942M50-P2BB | 1.1×0.9×0.5 | 1.6 | 28 | 150ohm output |
| | F5KA942M5D4MYB | 1.4×1.0×0.5 | 1.9 | 53 | High Att. |
| | F5QG942M5P2KB | 1.1×0.9×0.5 | 2.2 | 56 | 100ohm output, High Att. |

DCS/Band 3

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|--------|----------------------|-------------------|---------------------|------------------|---------------|
| DCS Tx | FAR-F6KA-1G7475-D4CY | 1.4×1.0×0.5 | 2.5 | 30 | |
| | FAR-F6KA-1G8425-D4CK | 1.4×1.0×0.5 | 2.1 | 20 | |
| DCS Rx | FAR-F6KB-1G8425-B4GA | 1.4×1.0×0.5 | 1.5 | 14 | 150ohm output |
| | F6QB1G842P2BM | 1.1×0.9×0.5 | 1.8 | 15 | 100ohm |
| | F6QB1G842P2BF | 1.1×0.9×0.5 | 1.6 | 17 | 150ohm |

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PART NUMBERS

PCS/GSM1900/Band 2

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|-------------------|----------------------|-------------------|---------------------|------------------|-------------------|
| US-PCS Tx | FAR-F6KA-1G8800-L4AF | 1.4×1.0×0.5 | 2.4 | 35 | High Att. |
| | FAR-F6KB-1G8800-B4GS | 1.4×1.0×0.5 | 2.3 | 28 | 100ohm input |
| | F6QA1G880M2AQ | 1.1×0.9×0.5 | 1.7 | 20 | |
| US-PCS Rx | US-PCS Rx | 1.4×1.0×0.5 | 3.4 | 44 | High Att. |
| | FAR-F6KA-1G9600-D4MT | 1.4×1.0×0.5 | 3.4 | 43 | High Att. |
| | FAR-F6KB-1G9600-B4GP | 1.4×1.0×0.5 | 2.1 | 23 | 100ohm output |
| | FAR-F6KY-1G9600-B4UU | 1.4×1.0×0.5 | 2.9 | 49 | 100ohm, High Att. |
| | F6KY1G960B4NF | 1.4×1.0×0.5 | 2.8 | 50 | 100ohm output |
| GSM1900/US-PCS Rx | FAR-F6KA-1G9600-D4CR | 1.4×1.0×0.5 | 2.0 | 18 | |
| GSM1900 Rx | FAR-F6KB-1G9600-B4GB | 1.4×1.0×0.5 | 1.6 | 18 | 150ohm output |

GSM Dual

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|--------------------------------|----------------------|-------------------|---------------------|------------------|--|
| EGSM+DCS Rx | FAR-G6KZ-1G8425-Y4WZ | 1.8×1.4×0.5 | 1.8/1.6 | 31/16 | EGSM 150ohm output DCS 150ohm output |
| DCS+EGSM Rx | FAR-G6KZ-1G8425-Y4WY | 1.8×1.4×0.5 | 1.6/1.8 | 16/31 | DCS 150ohm output EGSM 150ohm output |
| GSM850+EGSM Rx | FAR-G5QC-942M50-N2FB | 1.5×1.1×0.5 | 1.5/1.8 | 50/29 | GSM850 150ohm output EGSM 150ohm output |
| GSM850+EGSM Rx (Common Input) | FAR-G5KT-942M50-Y4RW | 1.8×1.4×0.5 | 1.9/2.2 | 50/25 | GSM850 150ohm output EGSM 150ohm output |
| GSM850+EGSM Rx (Common Output) | FAR-G5KW-942M50-Y4YD | 1.8×1.4×0.5 | 2.5/1.8 | 32/38 | EGSM 150ohm output GSM850 150ohm output |
| EGSM+GSM850 Rx | FAR-G5KC-942M50-Y4YW | 1.8×1.4×0.5 | 1.8/1.4 | 31/54 | EGSM 150ohm output GSM850 150ohm output |
| | FAR-G5QC-942M50-N2CD | 1.5×1.1×0.5 | 1.7/1.4 | 29/51 | EGSM 150ohm output GSM850 150ohm output |
| EGSM+GSM850 Rx (Common Input) | FAR-G5KT-942M50-Y4RZ | 1.8×1.4×0.5 | 2.2/1.9 | 25/52 | EGSM 150ohm output GSM850 150ohm output |
| | FAR-G5QD-942M50-N2DB | 1.5×1.1×0.5 | 2.5/2.0 | 25/55 | EGSM 150ohm output GSM850 150ohm output |
| DCS+GSM1900 Rx | FAR-G6QC-1G9600-N2FA | 1.5×1.1×0.5 | 1.9/1.7 | 17/13 | DCS 150ohm output GSM1900 150ohm output |
| | G6QJ1G960M2MB | 1.5×1.1×0.5 | 1.9/1.9 | 19/19 | Rx Dual Unbal |
| DCS+GSM1900 Rx (Common Input) | G6QD1G960N2DY | 1.5×1.1×0.5 | 1.8/1.9 | 18/14 | 1 IN 4 OUT 150ohm output |
| GSM1900+DCS Rx | G6QC1G960N2CH | 1.5×1.1×0.5 | 1.6/1.2 | 13/15 | GSM1900 150ohm output DCS 150ohm output |
| GSM1900+DCS Rx (Common Input) | FAR-G6KT-1G9600-Y4RY | 1.8×1.4×0.5 | 1.9/1.8 | 13/18 | GSM1900 150ohm output DCS 150ohm output |
| GSM1900+DCS Rx (Common Output) | FAR-G6KW-1G9600-Y4YC | 1.8×1.4×0.5 | 2.2/3.1 | 13/15 | GSM1900 170ohm output DCS 170ohm output |
| | G6QE1G960N2EC | 1.5×1.1×0.5 | 2.5/2.5 | 18/13 | GSM1900 150ohm output DCS 150ohm output |
| | G6QE1G960N2EE | 1.5×1.1×0.5 | 2.2/2.2 | 31/14 | GSM1900/DCS 150ohm output Low Loss |
| GSM1900+850 Rx | G6QF1G960N2GA | 1.5×1.1×0.5 | 1.6/1.4 | 14/54 | GSM1900 150ohm output GSM850 150ohm output |

GPS

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|----------|----------------------|-------------------|---------------------|------------------|--------------------------|
| GPS | FAR-F6KA-1G5754-L4AA | 1.4×1.0×0.5 | 0.9 | — | Low loss |
| | FAR-F6KA-1G5754-L4AJ | 1.4×1.0×0.5 | 0.9 | — | Low loss, High Att. |
| | FAR-F6KA-1G5754-L4AB | 1.4×1.0×0.5 | 0.44 | — | Ultra Low loss |
| | FAR-F6QA-1G5754-H2JD | 1.1×0.9×0.5 | 0.87 | — | Low loss |
| | FAR-F6QA-1G5754-H2JE | 1.1×0.9×0.5 | 1.27 | — | High Att. |
| | F6QA1G575H2JF | 1.1×0.9×0.5 | 0.96 | — | Low loss, High Att. |
| | FAR-F6KB-1G5754-B4GE | 1.4×1.0×0.5 | 1.1 | — | 100ohm output, Low loss |
| | FAR-F6KB-1G5754-B4GU | 1.4×1.0×0.5 | 1.2 | — | 100ohm output, High Att. |
| GPS/GNSS | FAR-F6KA-1G5859-D4MS | 1.4×1.0×0.5 | 1.0/1.2 | — | — |
| | F6QA1G585M2AT | 1.1×0.9×0.5 | 1.1/1.4 | — | — |
| | FAR-F6KB-1G5859-B4HR | 1.4×1.0×0.5 | 1.1/1.4 | — | 100ohm output |
| | F6QB1G585P2BQ | 1.1×0.9×0.5 | 1.5/1.7 | — | 100ohm output |

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PART NUMBERS

W-CDMA

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|------------------------------------|----------------------|-------------------|---------------------|------------------|--------------------------------------|
| W-CDMA Band 1 Tx | FAR-F6KA-1G9500-D4DG | 1.4×1.0×0.5 | 1.6 | 38 | Low loss, High Att. |
| | F6QA1G950M2AA | 1.1×0.9×0.5 | 1.8 | 38 | Low loss, High Att. |
| | FAR-F6KA-2G1400-D4CG | 1.4×1.0×0.5 | 1.9 | 39 | |
| | FAR-F6KA-2G1400-D4DW | 1.4×1.0×0.5 | 1.9 | 48 | High Att. |
| | FAR-F6KY-2G1400-B4UY | 1.4×1.0×0.5 | 1.8 | 64 | 100ohm, High Att. |
| | F6QG2G140P2KA | 1.1×0.9×0.5 | 1.7 | 55 | 100ohm, High Att. |
| W-CDMA Band 1+2 Rx | G6QL2G140M2PA | 1.5×1.1×0.5 | 1.9/3.0 | 48/41 | |
| W-CDMA Band 2+1 Rx | G6QH2G140N2LP | 1.5×1.1×0.5 | 3.2/2.3 | 53/54 | 2 (1.9G)100ohm out 1 (2G)100ohm out |
| W-CDMA Band 1+5 Rx | FAR-G6KG-2G1400-Y4SH | 1.8×1.4×0.5 | 1.6/1.5 | 42/64 | 1 (2G) 200ohm out 5 (850) 200ohm out |
| W-CDMA Band 4 Tx | FAR-F6KA-1G7400-D4DE | 1.4×1.0×0.5 | 1.5 | 44 | |
| W-CDMA Band 5+8 Rx | G5QH942M5N2LN | 1.5×1.1×0.5 | 1.6/20 | 56/50 | 100ohm output |
| W-CDMA Band 8+5 Rx (Common Output) | G5QT942M5N2VA | 1.5×1.1×0.5 | 2.3/2.0 | 48/48 | 100ohm output |
| W-CDMA Band 7 Tx | F6KA2G535L4AM | 1.4×1.0×0.5 | 1.6 | 30 | |
| W-CDMA/LTE Band 7 Rx | FAR-F6KY-2G6550-B4UN | 1.4×1.0×0.5 | 2.8 | 54 | 100ohm, High Att. |
| | F6QG2G655P2KE | 1.1×0.9×0.5 | 2.5 | 52 | 100ohm, High Att. |
| LTE Band 12 Tx | F5KA707M5D4JW | 1.4×1.0×0.5 | 1.6 | 23 | Unbal. |
| LTE Band 12 Rx | F5KY737M0B4NN | 1.4×1.0×0.5 | 1.4 | 57 | 100ohm output |
| LTE Band 13 Tx | FAR-F5KA-782M00-D4VP | 1.4×1.0×0.5 | 1.5 | 55 | |
| LTE Band 13 Rx | FAR-F5KY-751M00-B4UQ | 1.4×1.0×0.5 | 1.6 | 50 | 100ohm output |
| LTE Band 17 Tx | FAR-F5KA-710M00-D4VQ | 1.4×1.0×0.5 | 1.2 | 32 | |
| LTE Band 17 Rx | FAR-F5KY-740M00-B4UR | 1.4×1.0×0.5 | 1.4 | 60 | 100ohm output |
| | F5QG740M0P2KH | 1.1×0.9×0.5 | 1.4 | 65 | 100ohm output |
| LTE Band 18+5 (BC0) Tx | F5KA832M0D4JS | 1.4×1.0×0.5 | 1.5 | 19 | Unbal. |
| LTE Band 20 Tx | F5KA847M0D4ML | 1.4×1.0×0.5 | 1.7 | 52 | |
| LTE Band 20 Rx | F5KY806M0B4NE | 1.4×1.0×0.5 | 2.5 | 45 | 100ohm output |
| LTE Band 21 Rx | F6KY1G503B4NS | 1.4×1.0×0.5 | 1.4 | 47 | 100ohm output Low loss |
| LTE Band 25 Tx | F6QA1G882M2AS | 1.1×0.9×0.5 | 1.8 | 23 | Unbal. |
| TD LTE Bnad 38 Rx | F6KB2G595B4HS | 1.4×1.0×0.5 | 2.6 | — | 150ohm output |
| TD LTE Band 38+40 (Common output) | G6QE2G595N2EJ | 1.5×1.1×0.5 | 2.9/2.8 | — | Balanced 100ohm |
| TD LTE Band 40 Rx | F6KB2G350B4HT | 1.4×1.0×0.5 | 2.7 | — | 150ohm output |
| | F6KB2G350B4HTB | 1.4×1.0×0.5 | 2.5 | — | Balanced 100ohm |

Other

| System | Part number | Package Size (mm) | Insertion Loss (dB) | Attenuation (dB) | Remarks |
|------------------------------------|----------------------|-------------------|---------------------|------------------|-----------------|
| ISM900 (B.W.26MHz) | FAR-F5QA-915M00-M2AK | 1.1×0.9×0.5 | 1.8 | — | |
| TD-SCDMA/TD-LTE Band 34 | FAR-F6KA-2G0175-D4DR | 1.4×1.0×0.5 | 1.8 | — | High Att |
| TD-SCDMA/TD-LTE Band 39 | FAR-F6KA-1G9000-D4DS | 1.4×1.0×0.5 | 1.6 | — | |
| TD-SCDMA Band 34+39 | G6QJ2G017M2MD | 1.5×1.1×0.5 | 1.3/1.4 | — | 2 IN/2 OUT |
| | G6QJ2G017M2RD | 1.5×1.1×0.5 | 1.6/2.0 | — | 1 IN/2 OUT |
| TD-SCDMA Band 39+34 (Common input) | G6QD2G017N2DU | 1.5×1.1×0.5 | 1.7/2.0 | — | Balanced 100ohm |
| TD-SCDMA Band 34+39 (Common input) | G6QD2G017N2DC | 1.5×1.1×0.5 | 2.2/1.8 | — | Balanced 200ohm |
| Wireless LAN | FAR-F6KA-2G4418-D4CU | 1.4×1.0×0.5 | 2.6 | — | +10dBm |
| | FAR-F6KA-2G4418-A4VA | 1.4×1.0×0.5 | 3.0 | — | +23dBm |
| | FAR-F6KA-2G4500-A4VD | 1.4×1.0×0.5 | 1.9 | — | Low IL,+19dBm |
| | F6KA2G436A4VE | 1.4×1.0×0.5 | 2.5 | — | BW=72MHz,+24dBm |
| | F6KA2G466A4VJ | 1.4×1.0×0.5 | 2.8 | — | BW=68MHz,+24dBm |

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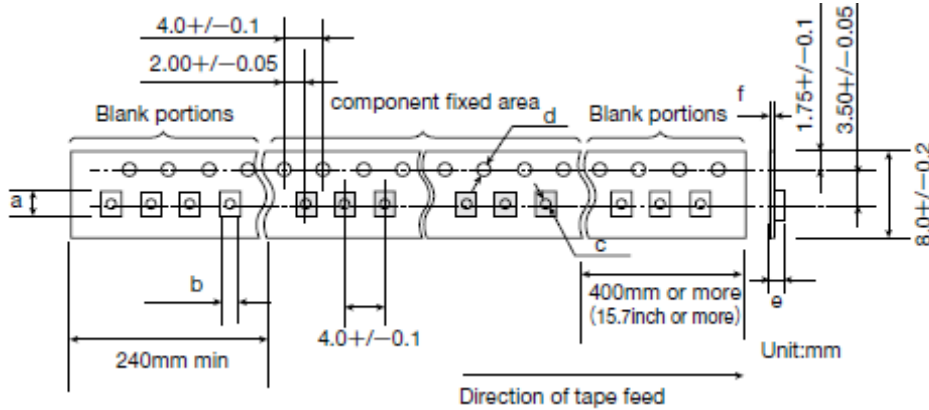
SAW/FBAR DEVICES (FILTER / DUPLEXERS)

PACKAGING

① Minimum Quantity

| Type | Size (mm) | Code & Quantity (Pieces) | | | | | | | |
|---------------|-----------|--------------------------|------|---|------|---|-------|---|-------|
| Duplexer | 3.0 × 2.5 | Z | 3000 | | | U | 10000 | | |
| | 2.5 × 2.0 | Z | 3000 | | | U | 10000 | | |
| | 2.0 × 1.6 | Z | 3000 | | | | | Y | 15000 |
| Single Filter | 2.0 × 1.6 | Z | 3000 | | | | | Y | 15000 |
| | 1.4 × 1.0 | Z | 3000 | | | | | Y | 15000 |
| | 1.1 × 0.9 | | | J | 5000 | | | Y | 15000 |
| Dual Filter | 2.0 × 1.6 | Z | 3000 | | | | | Y | 15000 |
| | 1.8 × 1.4 | Z | 3000 | | | | | Y | 15000 |
| | 1.5 × 1.1 | | | J | 5000 | | | Y | 15000 |

② Tape material



● Taping dimensions

| Type | Size (mm) | a | b | c | d | e | f |
|---------------|-----------|-----------|------------|-----------------|-----------------|-------------------|-------------|
| Duplexer | 3.0 × 2.5 | 3.4 ± 0.1 | 2.85 ± 0.1 | 1.05 ± 0.05 | 1.55 ± 0.05 | 1.0 ± 0.1 | 0.25 ± 0.05 |
| | 2.5 × 2.0 | 2.8 ± 0.1 | 2.3 ± 0.1 | 1.5 + 0.1 / - 0 | 1.5 + 0.1 / - 0 | 1.0 + 0.1 / - 0.0 | 0.25 ± 0.05 |
| | 2.0 × 1.6 | 2.4 ± 0.1 | 2.0 ± 0.1 | 1.05 ± 0.05 | 1.5 + 0.1 / - 0 | 0.90 - 0.05 | 0.25 ± 0.05 |
| Single Filter | 2.0 × 1.6 | 2.4 ± 0.1 | 2.0 ± 0.1 | 1.05 ± 0.05 | 1.5 + 0.1 / - 0 | 0.90 - 0.05 | 0.25 ± 0.05 |
| | 1.4 × 1.0 | 1.7 ± 0.1 | 1.3 ± 0.1 | 0.5 ± 0.05 | 1.5 + 0.1 / - 0 | 0.63 ± 0.05 | 0.20 ± 0.05 |
| | 1.1 × 0.9 | 1.3 ± 0.1 | 1.1 ± 0.1 | 0.5 ± 0.05 | 1.55 ± 0.05 | 0.63 ± 0.05 | 0.20 ± 0.05 |
| Dual Filter | 2.0 × 1.6 | 2.4 ± 0.1 | 2.0 | 1.05 ± 0.05 | 1.5 + 0.1 / - 0 | 0.90 - 0.05 | 0.25 ± 0.05 |
| | 1.8 × 1.4 | 2.2 ± 0.1 | 1.8 | 0.5 ± 0.05 | 1.55 ± 0.05 | 0.8 ± 0.1 | 0.30 ± 0.05 |
| | 1.5 × 1.1 | 1.8 ± 0.1 | 1.4 | 0.5 ± 0.05 | 1.5 + 0.1 / - 0 | 0.7 ± 0.1 | 0.25 ± 0.05 |

Unit: mm

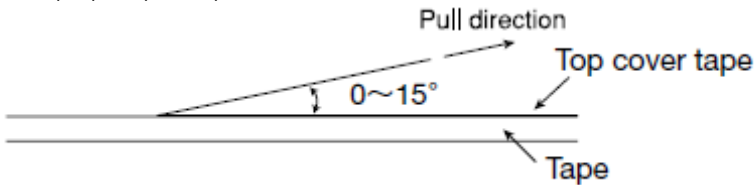
● Material of Tape (Conductive)

Tape : Polystyrene

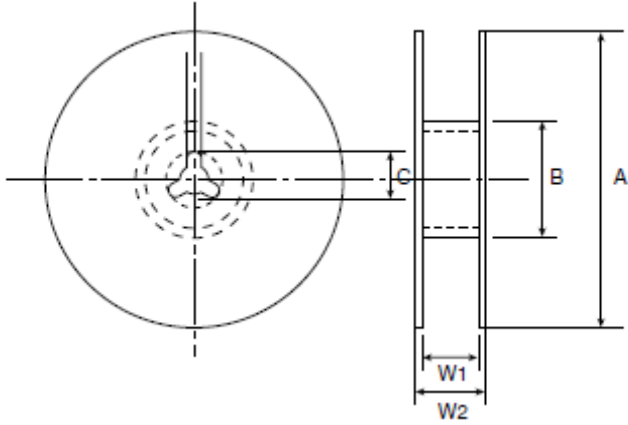
Top cover tape : Polyethylene terephthalate (PET) and Polyethylene

③ Top Tape Strength

The top tape requires a peel-off force of 0.1 to 1.0N in the direction of the arrow as illustrated below.



④ Reel size



● Material of Reel

Material : Polystyrene + Carbon

Characteristics : Conform to EIAJ-ET-7200A

Color : Black

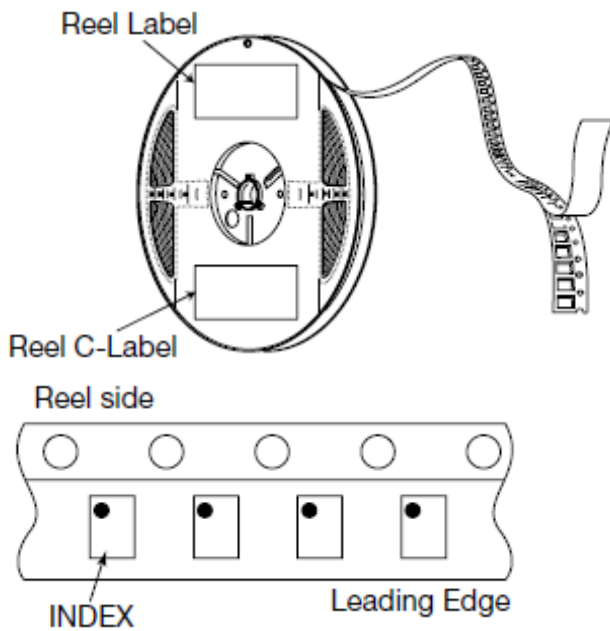
Surface resistance (reference value) : 109 Ω /sq Max.

| Code | Quantity | A | B | C | W1 | W2 |
|------|------------|-------------------|--------------|-------------|---------------|-----------|
| Z | 3,000 pcs | φ 180.0 +0.0/-1.5 | φ 66.0 ±0.5 | φ 13.0 ±0.2 | 9.0 +1.0/-0.0 | 11.4 ±1.0 |
| J | 5,000 pcs | φ 180.0 +0.0/-1.5 | φ 66.0 ±0.5 | φ 13.0 ±0.2 | 9.0 +1.0/-0.0 | 11.4 ±1.0 |
| U | 10,000 pcs | φ 330.0 ±2.0 | φ 100.0 ±1.0 | φ 13.0 ±0.2 | 9.4 ±1.0 | 13.4 ±1.0 |
| Y | 15,000 pcs | φ 330.0 ±2.0 | φ 100.0 ±1.0 | φ 13.0 ±0.2 | 9.4 ±1.0 | 13.4 ±1.0 |

Unit : mm

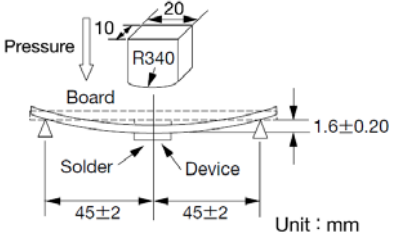
⑤ Reel label and Reel C-Label sticking and Winding method

● Surface



Filter

RELIABILITY DATA

| 1. Terminal strength | |
|----------------------------------|--|
| Specified Value | No damage to be found. |
| Test Methods and Remarks | Bending Test. according to IEC60068-2-21(JISC60068-2-21)  |
| 2. Mechanical shock | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Apply 14700m/s ² for 0.5ms 5 times for each of 6 directions. according to IEC68-2-27(JISC60068-2-27). |
| 3. Vibration | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | With 1.5 mm of whole amplitude at 10 to 55 Hz of frequency, and 98m/s ² of acceleration at 55 to 500Hz, apply a vibration for 2 hours for each of 3 directions, period is 15 minutes(10 to 500 to 10Hz) |
| 4. Drop 1 | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Drop 3 times onto concrete floor from the height of 1.0m. |
| 5. Drop 2 | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Drop with 150g weight 3 times in each 6 direction onto concrete floor from the height of 1.8m. |
| 6. Temperature cycling | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Temp. range -40 to +100°C. 500cycle. |
| 7. Static humidity | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | +85°C, 90% to 95%RH, apply DC5V, 1000hours. |
| 8. High temperature storage life | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | +100°C, 1000hours. |
| 9. Low temperature storage life | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | -40°C, 1000hours. |

10. Solderability 1

| | |
|--------------------------|--|
| Specified Value | More than 90% of area of terminals to be covered with the solder. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | Lead-free Solder paste, Reflow; Peak temperature 245°C |

11. Solderability 2

| | |
|--------------------------|--|
| Specified Value | More than 90% of area of terminals to be covered with the solder. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | Sn-Pb Solder paste, Reflow; Peak temperature 235°C |

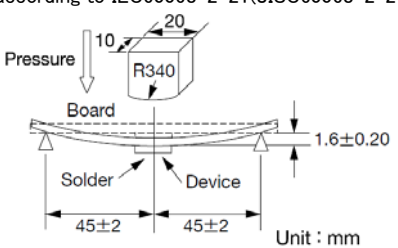
12. Solder heat resistance

| | |
|--------------------------|--|
| Specified Value | After testing, meet the specified characteristics at a room temperature. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | <p>◆Recommended temperature profile of reflow soldering Figure shows recommended temperature profile of reflow soldering in the case of lead-free solder alloy Sn3.0Ag0.5Cu. Suitable condition for solder heating is differed depending on composition and manufacturing method. Please contact to solder manufacturer for the details.</p> |

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Duplexer

RELIABILITY DATA

| 1. Terminal strength | |
|----------------------------------|--|
| Specified Value | No damage to be found. |
| Test Methods and Remarks | <p>Bend width 4mm, hold for 5 ± 1 sec. according to IEC60068-2-21(JISC60068-2-21)</p>  <p>Unit : mm</p> |
| 2. Mechanical shock | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Apply 14700m/s^2 for 0.5ms 5 times for each of 6 directions. according to IEC68-2-27(JISC60068-2-27). |
| 3. Vibration | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | With 1.5 mm of whole amplitude at 10 to 55 Hz of frequency, and 98m/s^2 of acceleration at 55 to 500Hz, apply a vibration for 2 hours for each of 3 directions, period is 15 minutes(10 to 500 to 10Hz) |
| 4. Drop 1 | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Drop 3 times onto concrete floor from the height of 1.0m. |
| 5. Drop 2 | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Drop with 150g weight 3 times in each 6 direction onto concrete floor from the height of 1.8m. |
| 6. Temperature cycling | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | Temp. range -40 to $+100^\circ\text{C}$. 500cycle. |
| 7. Static humidity | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | $+85^\circ\text{C}$, 90% to 95%RH, apply DC5V, 1000hours. |
| 8. High temperature storage life | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | $+100^\circ\text{C}$, 1000hours. |
| 9. Low temperature storage life | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | -40°C , 1000hours. |

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| 10. High Temperature Bias | |
|----------------------------|---|
| Specified Value | After testing, meet the specified characteristics at a room temperature. |
| Test Methods and Remarks | +50°C, +29dBm, 50000hours. |
| 11. Solderbility 1 | |
| Specified Value | More than 90% of area of terminals to be covered with the solder. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | Lead-free Solder paste, Reflow; Peak temperature 245°C |
| 12. Solderbility 2 | |
| Specified Value | More than 90% of area of terminals to be covered with the solder. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | Sn-Pb Solder paste, Reflow; Peak temperature 235°C |
| 13. Solder heat resistance | |
| Specified Value | After testing, meet the specified characteristics at a room temperature. A change of the remarkable appearance do not have it. |
| Test Methods and Remarks | <p>◆Recommended temperature profile of reflow soldering Figure shows recommended temperature profile of reflow soldering in the case of lead-free solder alloy Sn3.0Ag0.5Cu. Suitable condition for solder heating is differed depending on composition and manufacturing method. Please contact to solder manufacturer for the details.</p> <p>Temperature (°C)</p> <p>Ambient temperature rise slope : 1~4°C/sec.</p> <p>Pre-Heating 150~180°C</p> <p>30~50sec.</p> <p>Temperature in heat condition : 230°Cmin. 50sec. max. Temperature of upper surface of package and PCB surface. : 260°Cmin. 10sec. max.</p> <p>Ambient temperature cool slope : 1~4°C/sec.</p> <p>50~110sec. 10sec.</p> |