

有关敝公司产品的注意事项

请务必在使用敝公司产品之前阅读。



注意

产品目录中的记载内容

本产品目录中所记载的内容为2021年1月的内容。因产品改良等原因，可能会不经预告而变更其记载内容，或是停止供应本产品目录中所记载的产品。所以，请务必在使用前先确认最新的产品信息。

未按照本产品目录中所记载的内容或交货规格说明书使用敝公司产品，即便其致使用设备发生损害、不良情况等时，敝公司也不承担任何责任，敬请知悉。

签署交货规格说明书

就本产品目录中所记载产品的产品规格等相关内容，敝公司备有交货规格说明书，详情请向敝公司咨询。在使用敝公司产品前请务必就交货规格说明书之内容确认并批准之。

实装前的事前评估

使用敝公司产品时，请务必事先安装到使用设备之后，在实际使用的环境下进行评估和确认。

用途的限定

1. 可以使用的设备

本产品目录中所记载的产品预设为使用于一般电子设备 [音像设备、办公自动化设备、家电产品、办公设备、信息通讯设备 (手机、电脑等)] 以及面向本产品目录或是交货规格说明书中另行注明的设备通用性、标准性用途。

另外，面向汽车用电子设备、电信基础设施 / 工业设备、医疗设备 (国际 (GHTF) 第一类、第二类、第三类) 方面的应用，敝公司也有预设的产品线，请参考本产品目录或是交货规格说明书的内容，使用相对应的产品。

2. 需要另行确认的设备

若考虑将本产品目录中所记载的产品使用于当产品发生故障、品质不良，或是由此引起的运转失常而可能会危及生命、身体或是财产，以及有可能给社会造成深刻影响的以下设备 (不包括本产品目录或是交货规格说明书中另行注明可以使用设备) 等时，请务必事先向敝公司咨询。

- (1) 运输用设备 (汽车驱动控制设备、火车控制设备、船舶控制设备等)
- (2) 交通信号设备
- (3) 防灾 / 保安设备
- (4) 医疗设备 (国际 (GHTF) 第三类)
- (5) 高公共性信息通讯设备 / 信息处理设备 (电话交换机、电话 / 无线 / 广播电视基站等)
- (6) 其他与上述设备有同等品质与可靠性要求的设备

3. 禁止使用的设备

请勿将敝公司产品使用于对安全性和可靠性有着极高要求的以下设备。

- (1) 航天设备 (人工卫星、火箭等)
- (2) 航空设备^(注释1)
- (3) 医疗设备 (国际 (GHTF) 第四类)、植体 (体内植入型) 医疗设备^(注释2)
- (4) 发电控制设备 (面向核能 / 水力 / 火力发电厂等的设备)
- (5) 海底设备 (海底中继设备、海中的作业设备等)
- (6) 军事设备
- (7) 其他与上述设备有同等品质与可靠性要求的设备

注释 1：仅限于对航空设备的安全运行不产生直接干扰的设备 [机内娱乐设备、机内照明设备、电动座椅、餐饮设备等]，在满足敝公司另行指定的相关条件时，亦可将敝公司产品用于以上用途。在贵公司考虑将敝公司的产品用于以上用途时，请务必事先向敝公司咨询相关的信息。

注释 2：包括注入人体内的部分和与此相连接的体外部分。

4. 责任的限制

未经敝公司的事先书面同意，把本产品目录中所记载的产品使用于非敝公司预设用途的设备、前述需要向敝公司咨询的设备或敝公司禁止使用的设备，从而给客户或第三方造成损害的，敝公司不承担任何责任，敬请知悉。

安全设计

需将敝公司的产品使用于对安全性和可靠性要求较高的设备、电路上时，请进行充分的安全性评估和可靠性评估。另外，请通过设置保护电路、保护装置的系统，设置冗余电路不会被单一故障影响安全性的系统等失效导向安全 (fail-safe) 设计，确保充分的安全性。

有关知识产权

本产品目录中所记载的信息是用于说明相关产品的典型操作以及相关应用。此类信息的使用不代表对于敝公司以及第三方的知识产权以及其他权利的使用许可或是不侵权保证。

保证范围

敝公司产品的保证范围仅限于已经交付的敝公司产品本身，由敝公司产品的故障或不良情况所诱发的损害，敝公司不承担任何责任，敬请知悉。但是，以书面形式另行签署了交易基本合同书、品质保证协定书等时，敝公司将根据该合同的条件提供保证。

正规销售渠道

本产品目录中所记载的内容适用于从敝公司营业所、销售子公司、销售代理店 (即“正规销售渠道”) 购买的敝公司产品，并不适用于从其他渠道购买的敝公司产品，敬请知悉。

出口时的注意事项

本产品目录中所记载的部分产品在出口时须事先确认《外汇和对外贸易法》以及美国在出口管理方面的相关法规，并办理相关手续。如有不明之处，请向敝公司咨询。

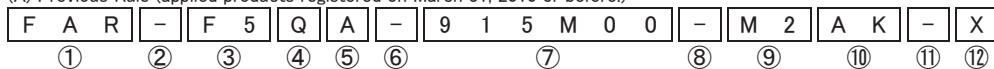
▶ 由于篇幅有限，本产品目录中只记载了有代表性的产品规格。若考虑使用敝公司产品时，请确认交货规格说明书中的详细规格。另外，有关各产品的详细信息 (特性图、可靠性信息、使用时的注意事项等)，请参阅敝公司网站 (<http://www.ty-top.com/>)。

移动通信用 FBAR / SAW 器件

回流焊

■ 型号标示法

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



- | <p>①产品记号
②共通记号
③类型</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #f2f2f2;"> <th>代码</th><th>Product</th><th>Frequency Range [MHz]</th></tr> </thead> <tbody> <tr><td>D5</td><td>Duplexer</td><td>700 - 1000</td></tr> <tr><td>D6</td><td>Duplexer</td><td>1000 - 5000</td></tr> <tr><td>J5</td><td>Triplexer</td><td>700 - 1000</td></tr> <tr><td>F5</td><td>Device</td><td>700 - 1000</td></tr> <tr><td>F6</td><td>Device</td><td>1000 - 5000</td></tr> <tr><td>G5</td><td>Dual Devices</td><td>700 - 1000</td></tr> <tr><td>G6</td><td>Dual Devices</td><td>1000 - 5000</td></tr> </tbody> </table> | 代码 | Product | Frequency Range [MHz] | D5 | Duplexer | 700 - 1000 | D6 | Duplexer | 1000 - 5000 | J5 | Triplexer | 700 - 1000 | F5 | Device | 700 - 1000 | F6 | Device | 1000 - 5000 | G5 | Dual Devices | 700 - 1000 | G6 | Dual Devices | 1000 - 5000 | <p>④包装代码
⑤产品记号
⑥共通记号
⑦频率
⑧共通记号
⑨管理记号
⑩管理记号
⑪特制代码
⑫包装</p> |
|--|--------------|-----------------------|-----------------------|----|----------|------------|----|----------|-------------|----|-----------|------------|----|--------|------------|----|--------|-------------|----|--------------|------------|----|--------------|-------------|--|
| 代码 | Product | Frequency Range [MHz] | | | | | | | | | | | | | | | | | | | | | | | |
| D5 | Duplexer | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | |
| D6 | Duplexer | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | |
| J5 | Triplexer | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | |
| F5 | Device | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | |
| F6 | Device | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | |
| G5 | Dual Devices | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | |
| G6 | Dual Devices | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | |

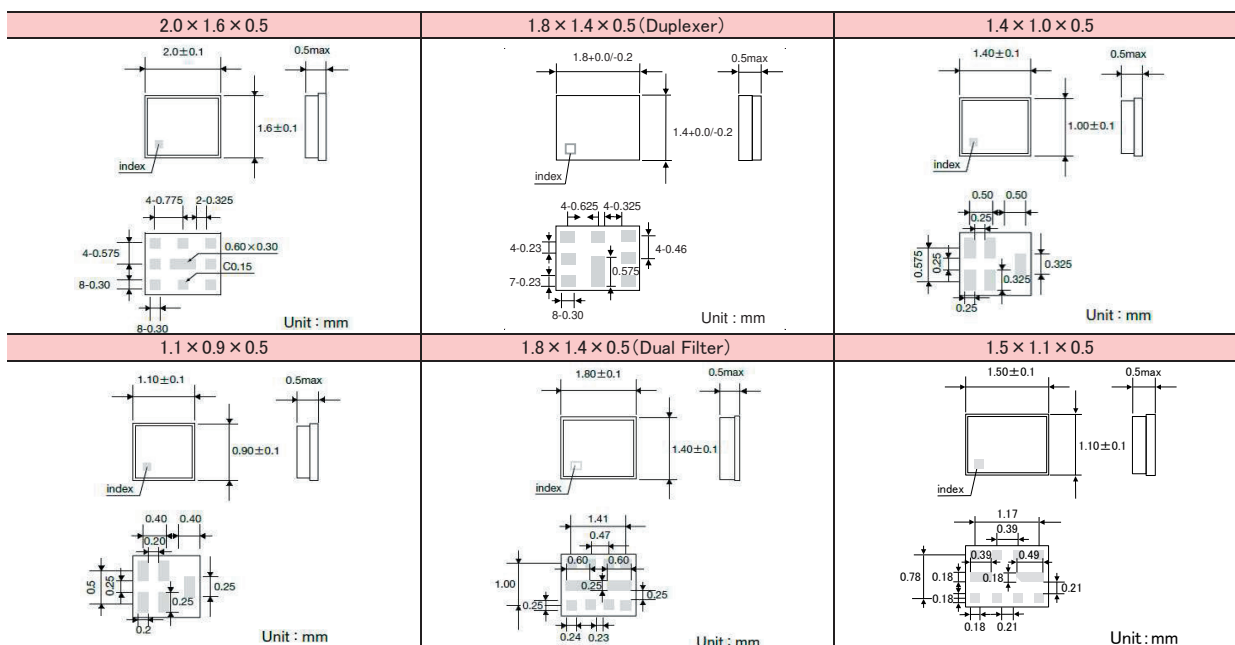
(B) New Rule (applied to products registered on April 1, 2010 or later.)



- | <p>①类型</p> <table border="1" style="width: 100%; border-collapse: collapse; text-align: center;"> <thead> <tr style="background-color: #f2f2f2;"> <th>代码</th><th>Product</th><th>Frequency Range [MHz]</th></tr> </thead> <tbody> <tr><td>D5</td><td>Duplexer</td><td>700 - 1000</td></tr> <tr><td>D6</td><td>Duplexer</td><td>1000 - 5000</td></tr> <tr><td>J5</td><td>Triplexer</td><td>700 - 1000</td></tr> <tr><td>F5</td><td>Device</td><td>700 - 1000</td></tr> <tr><td>F6</td><td>Device</td><td>1000 - 5000</td></tr> <tr><td>G5</td><td>Dual Devices</td><td>700 - 1000</td></tr> <tr><td>G6</td><td>Dual Devices</td><td>1000 - 5000</td></tr> <tr><td>H6</td><td>Triple Devices</td><td>1000 - 5000</td></tr> <tr><td>K6</td><td>Quadplexer</td><td>1000 - 5000</td></tr> </tbody> </table> | 代码 | Product | Frequency Range [MHz] | D5 | Duplexer | 700 - 1000 | D6 | Duplexer | 1000 - 5000 | J5 | Triplexer | 700 - 1000 | F5 | Device | 700 - 1000 | F6 | Device | 1000 - 5000 | G5 | Dual Devices | 700 - 1000 | G6 | Dual Devices | 1000 - 5000 | H6 | Triple Devices | 1000 - 5000 | K6 | Quadplexer | 1000 - 5000 | <p>②包装代码
③产品记号
④频率
⑤管理记号
⑥管理记号
⑦特制代码
⑧包装</p> |
|--|----------------|-----------------------|-----------------------|----|----------|------------|----|----------|-------------|----|-----------|------------|----|--------|------------|----|--------|-------------|----|--------------|------------|----|--------------|-------------|----|----------------|-------------|----|------------|-------------|--|
| 代码 | Product | Frequency Range [MHz] | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D5 | Duplexer | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| D6 | Duplexer | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| J5 | Triplexer | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F5 | Device | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| F6 | Device | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G5 | Dual Devices | 700 - 1000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| G6 | Dual Devices | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| H6 | Triple Devices | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |
| K6 | Quadplexer | 1000 - 5000 | | | | | | | | | | | | | | | | | | | | | | | | | | | | | |

*详细事宜，请向我司咨询。

■ 外型尺寸



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射频元器件

■ 型号一览

● Duplexers

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 1	D6DA2G140K2A4	1.8 × 1.4 × 0.5 max.	1.8/1.8	56/51	
	D6DA2G140K2A7	1.8 × 1.4 × 0.5 max.	1.6/1.7	58/59	
	D6RB2G140E1AJ	1.8 × 1.4 × 0.5 max.	1.7/1.8	57/48	Rx : Bal.100ohm
Band 2	D6RB2G140E1AL	1.8 × 1.4 × 0.47 max.	1.7/1.8	57/51	Rx : Bal.100ohm
	D6DA1G960K2B1	1.8 × 1.4 × 0.57 max.	1.9/2.5	54/54	
	D6DA1G960K2B2	1.8 × 1.4 × 0.57 max.	1.8/2.3	55/55	
	D6FH1G960A3CY	1.8 × 1.4 × 0.44 max.	1.8/2.2	60/56	
	D6SD1G960G3NZ	1.6 × 1.2 × 0.44 max.	1.7/2.2	59/54	
Band 3	D6RB1G960E1HB	1.8 × 1.4 × 0.6 max.	2.1/2.9	56/55	Rx : Bal.100ohm
	D6DA1G842K2C4	1.8 × 1.4 × 0.6 max.	2.3/2.1	56/56	
	D6DA1G842K2C7	1.8 × 1.4 × 0.38 max.	1.8/1.9	60/56	
	D6FH1G842A3CZ	1.8 × 1.4 × 0.44 max.	1.5/2.1	60/58	
Band 4	D6DA2G132K2D4	1.8 × 1.4 × 0.5 max.	1.5/1.7	57/55	
	D6DA2G132K2D9	1.8 × 1.4 × 0.5 max.	1.6/1.8	60/56	
	D6RB2G132E1DF	1.8 × 1.4 × 0.5 max.	1.6/1.8	62/54	Rx : Bal.100ohm
Band 5	D5DA881M5K2E4	1.8 × 1.4 × 0.5 max.	1.4/1.7	58/59	
	D5RB881M5E1BH	1.8 × 1.4 × 0.47 max.	1.4/1.7	58/52	Rx : Bal.100ohm
Band 7	D6HQ2G655DP01	1.8 × 1.4 × 0.54 max.	2.3/2.2	58/57	FBAR
	D6HQ2G655DP02	1.8 × 1.4 × 0.54 max.	2.0/2.0	58/55	FBAR 2HD Improved
	D6HQ2G655DP03	1.8 × 1.4 × 0.54 max.	2.0/2.0	61/56	
	D6DA2G655K2F1	1.8 × 1.4 × 0.44 max.	2.1/2.2	50/50	
Band 8	D6HP2G655BP11	1.8 × 1.4 × 0.54 max.	1.8/2.4	56/56	Rx : Bal.100ohm, FBAR
	D5DA942M5K2G6	1.8 × 1.4 × 0.5 max.	1.7/1.8	58/59	
	D5DA942M5K2S2	1.8 × 1.4 × 0.6 max.	1.3/1.5	58/56	for LTE
	D5FH942M5A1SZ	1.8 × 1.4 × 0.6 max.	1.8/1.9	61/52	
	D5SC942M5G3GZ	1.6 × 1.2 × 0.6 max.	1.8/1.9	58/56	
	D5RB942M5E1CF	1.8 × 1.4 × 0.5 max.	1.5/1.9	56/51	Rx : Bal.100ohm
Band 11	D6DA1G485K2W1	1.8 × 1.4 × 0.44 max.	1.2/1.3	58/60	
Band 12	D5DA737M5K2H2	1.8 × 1.4 × 0.5 max.	1.65/1.65	63/58	
Band 12/85	D5FH737M0K3HZ	1.8 × 1.4 × 0.44 max.	1.5/0.5	66/63	
Band 13	D5DA782M0K2J6	1.8 × 1.4 × 0.5 max.	1.9/1.7	58/61	
Band 14	D5DA793M0K2K2	1.8 × 1.4 × 0.44 max.	1.2/2.2	50/50	
Band 17	D5DA740M0K2L4	1.8 × 1.4 × 0.5 max.	1.25/1.65	65/60	
Band 20	D5FC847M0K3NE	1.8 × 1.4 × 0.44 max.	1.8/1.8	55/56	
Band 21	D6DA1G503K2Y1	1.8 × 1.4 × 0.44 max.	1.3/1.3	60/60	
Band 25	D6HQ1G962DP35	1.8 × 1.4 × 0.57 max.	2.5/2.6	57/57	FBAR
Band 26	D5DA876M5K2P6	1.8 × 1.4 × 0.6 max.	1.3/2.0	60/57	
Band 28	D5FC773M0K3NC	1.8 × 1.4 × 0.44 max.	2.5/2.6	57/57	
	D5FC788M0K3ND	1.8 × 1.4 × 0.44 max.	1.8/1.9	63/60	
Band 66	D6DA2G155K2T2	1.8 × 1.4 × 0.44 max.	2.0/2.0	57/54	

● Multiplexers

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 13+17 Triplexer	J5NA782M0P1H6	2.5 × 2.0 × 0.6 max.	1.6/1.9	60/49	
			1.9/1.9	53/55	
Band 1+3 Quadplexer	K6QZ2G140Q3ZC	2.5 × 2.0 × 0.8 max.	2.0/1.9	55/57	
			2.4/2.3	57/58	

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■型号一览

●W-CDMA / LTE / CDMA 2000 Filters

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 1 Tx	F6QA1G950M2AA	1.1 × 0.9 × 0.5 max.	1.8	38	
Band 1, Band 4 Rx	F6QA2G140M2AM	1.1 × 0.9 × 0.5 max.	1.9	46	
	F6QG2G140P2KA	1.1 × 0.9 × 0.5 max.	1.7	55	100ohm output
Band 2 Tx BC1 (PCS) Tx	F6QA1G880M2AQ	1.1 × 0.9 × 0.5 max.	1.7	20	
Band 2 Rx BC1 (PCS) Rx	F6QA1G960M2AP	1.1 × 0.9 × 0.5 max.	2.8	39	High Att.
	F6QG1G960P2KT	1.1 × 0.9 × 0.5 max.	2.8	44	100ohm output
Band 3 Tx	F6QA1G747M2QS	1.1 × 0.9 × 0.5 max.	2.1	22	
Band 3 Rx	F6QA1G842M2AN	1.1 × 0.9 × 0.5 max.	2.0	38	
	F6QG1G842P2KD	1.1 × 0.9 × 0.5 max.	3.2	45	100ohm output
Band 5 Tx BC0 Tx	F5QA836M5M2AR	1.1 × 0.9 × 0.5 max.	1.9	45	High Att.
Band 5 Rx BC0 Rx	F5QA881M5M2AU	1.1 × 0.9 × 0.5 max.	1.3	51	Low Loss/high Att.
	F5QG881M5P2KG	1.1 × 0.9 × 0.5 max.	1.5	56	100ohm output
Band 7 Rx	F6QA2G655M2QH	1.1 × 0.9 × 0.5 max.	2.5	38	
	F6QG2G655P2KE	1.1 × 0.9 × 0.5 max.	2.5	52	100ohm. High Att.
Band 8 Tx	F5QA897M5M2AC	1.1 × 0.9 × 0.5 max.	2.3	28	
Band 8 Rx	F5QA942M5M2AW	1.1 × 0.9 × 0.5 max.	2.0	48	for LTE
	F5QG942M5P2KB	1.1 × 0.9 × 0.5 max.	2.2	56	100ohm output
	F5QG942M5P2KF	1.1 × 0.9 × 0.5 max.	2.2	60	100ohm output for LTE
	F5FC942M5H4PK	1.1 × 0.9 × 0.44 max.	1.7	47	
Band 12 Rx	F5QA737M5M2QN	1.1 × 0.9 × 0.5 max.	1.6	53	
	F5QG737M5P2KK	1.1 × 0.9 × 0.5 max.	1.6	55	100ohm output
Band 13 Tx	F5QA782M0M2AZ	1.1 × 0.9 × 0.5 max.	1.5	56	
Band 13 Rx	F5QA751M0M2QM	1.1 × 0.9 × 0.5 max.	1.9	50	
Band 14	F5QA763M0M2QL	1.1 × 0.9 × 0.5 max.	2.2	49	
Band 17 Tx	F5QA710M0M2AY	1.1 × 0.9 × 0.5 max.	1.3	33	
Band 17 Rx	F5QG740M0P2KH	1.1 × 0.9 × 0.5 max.	1.4	65	100ohm output
Band 20 Rx	F5QA806M0M2QE	1.1 × 0.9 × 0.5 max.	2.7	41	
Band 21 Rx	F6QA1G503M2QF	1.1 × 0.9 × 0.5 max.	2.0	52	
Band 25 Tx	F6QA1G882M2AS	1.1 × 0.9 × 0.5 max.	1.8	23	
Band 26 Rx	F5QA876M5M2QP	1.1 × 0.9 × 0.5 max.	2.2	49	
	F5QG876M5P2KQ	1.1 × 0.9 × 0.5 max.	2.2	59	100ohm output
Band 28 Rx	F5QA773M0M2QC	1.1 × 0.9 × 0.5 max.	2.1	52	Block A
	F5QA788M0M2QB	1.1 × 0.9 × 0.5 max.	2.0	52	Block B
Band 29 Rx	F5BA722M5M6UW	1.1 × 0.9 × 0.44 max.	1.6	-	
Band 30 Rx	F6QP2G355R2SE	1.1 × 0.9 × 0.5 max.	2.1	50	
Band 32 Rx	F6QA1G474H2JS	1.1 × 0.9 × 0.5 max.	1.8	-	
Band 66 Rx	F6BA2G155M6UU	1.1 × 0.9 × 0.44 max.	1.7	45	
Band 67 Rx	F5QA748M0M2WF	1.1 × 0.9 × 0.5 max.	1.5	-	

●W-CDMA / LTE Dual Filters

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 3+1 Rx (Common Input)	G6QN2G140M2RN	1.5 × 1.1 × 0.5 max.	2.0/1.7	40/52	For B1+B3 CA

●TDD Filters (TD-SCDMA / TD-LTE)

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 34 TRx	F6FC2G017H4PC	1.1 × 0.9 × 0.44 max.	1.1	-	Input Power +29dBm (TDD:50% Duty)
Band 34 Rx	F6QP2G017R2SF	1.1 × 0.9 × 0.5 max.	1.3	-	
Band 38 TRx	F6KA2G595A4VL	1.4 × 1.0 × 0.5 max.	1.5	-	Input Power +29dBm
Band 38 Rx	F6QA2G595M2QK	1.1 × 0.9 × 0.5 max.	1.9	-	
	F6QB2G595P2BS	1.1 × 0.9 × 0.5 max.	2.0	-	Balanced 100ohm
Band 39 TRx	F6FC1G900H4PB	1.1 × 0.9 × 0.44 max.	1.1	-	Input power +29dBm (Duty 50%)
Band 39 Rx	F6QA1G900M2WD	1.1 × 0.9 × 0.5 max.	1.5	-	
Band 40 TRx	F6UG2G350FG27	1.1 × 0.9 × 0.5 max.	1.3	-	
Band 40 Rx	F6QA2G350M2QA	1.1 × 0.9 × 0.5 max.	2.2	-	
	F6QB2G350P2BH	1.1 × 0.9 × 0.5 max.	2.8	-	Balanced 100ohm
Band 41 TRx	F6FC2G600H4PA	1.1 × 0.9 × 0.44 max.	2.1	-	Unbal High power design & HPUE for CMCC 2535-2655MHz BW120MHz
	F6FC2G595H4PD	1.1 × 0.9 × 0.44 max.	1.7	-	Unbal Improved IL High power design & HPUE for CMCC 2535-2655MHz BW120MHz
	F6FC2G595H4PG	1.1 × 0.9 × 0.44 max.	1.5	-	32.0 @2535-2655MHz(TD-LTE 40% duty 5MHz 1RB)
	F6HQ2G593AP31	1.8 × 1.4 × 0.57 max.	2.7	-	Unbal High power design & HPUE for Sprint 2496-2690MHz BW194MHz FBAR

●TDD Dual Filters (TD-SCDMA / TD-LTE)

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 34 + Band 39 TRx	G6FT2G017G2YA	1.5 × 1.1 × 0.44 max.	1.3/1.4	-	1 IN / 2 OUT
Band 39 Rx + 41 (BW100MHz) TRx (Common Input)	G6KJ2G605D4AB	1.8 × 1.4 × 0.5 max.	2.1/2.6	-	B41 High power design B41 (2555-2655MHz BW100MHz) for CMCC CA
Band 41 Rx + 39 (BW100MHz) DRx (Common Input)	G6QN2G605M2RM	1.5 × 1.1 × 0.5 max.	2.2/1.3	-	
Band 41 (BW120MHz) Rx + 39Rx (Common Input)	G6QN2G595M2RP	1.5 × 1.1 × 0.5 max.	2.3/1.3	-	

●Triple Filters

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
Band 39 + Band 34 + Band 41 (BW120MHz) DRx	H6FM2G595T2MZ	1.8 × 1.4 × 0.44 max.	1.3/1.4/2.7	-	1 IN / 3 OUT
LTE / Band 1 + Band 3 + Band 7 DRx	H6FM2G655T2MY	1.8 × 1.4 × 0.44 max.	1.9/2.1/2.3	-	1 IN / 3 OUT

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■ 型号一览

● GPS

System	Part number	Package Size [mm]	Insertion Loss [dB]	Attenuation [dB]	Remarks
GPS	F6QA1G575H2JF	1.1 × 0.9 × 0.5 max.	0.96	-	Low loss, High Att.
GPS (GNSS)	F6QA1G585M2AT	1.1 × 0.9 × 0.5 max.	1.4	-	
	F6QB1G585P2BQ	1.1 × 0.9 × 0.5 max.	1.7	-	100ohm output
GPS+GLONASS+Galileo+Compass	F6QA1G581M2QZ	1.1 × 0.9 × 0.5 max.	1.4	-	
	F6QA1G582H2JM	1.1 × 0.9 × 0.5 max.	1.8	-	Ladder High Att.
	F6FC1G582H4PJ	1.1 × 0.9 × 0.44 max.	1	-	
	F6BG1G582R6TT	1.1 × 0.9 × 0.44 max.	1.7	-	100ohm output
GNSS (L2+L5+B2)	F6FC1G197H4PF	1.1 × 0.9 × 0.44 max.	1.3	-	
GPS (L1+L5 Dual)	G6FT1G582G2YB	1.5 × 1.1 × 0.44 max.	1.0/1.3	-	

● Others

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 max.	1.8	-	
Wireless LAN / Bluetooth®	F6UG2G441FG29B	1.1x0.9x0.5max.	1.2	-	Low Insertion Loss High Att. @2.38GHz Passband 2402.5~2481.5MHz FBAR
	F6FC2G441H4PE	1.1 × 0.9 × 0.44 max.	1.0	-	SAW

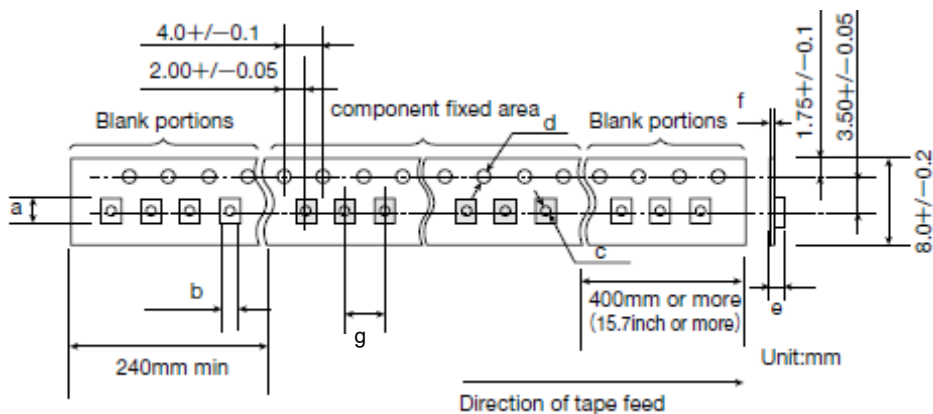
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PACKAGING

① Minimum Quantity

Type	Size [mm]	Code & Quantity [pcs]					
		Standard		Option			
Duplexer	2.0 × 1.6	Y	15000	Z	3000		
	1.8 × 1.4	Y	15000	Z	3000		
	1.6 × 1.2	Y	15000	Z	3000		
Quadplexer	2.5 × 2.0	U	10000	Z	3000		
Triplexer	2.5 × 2.0	U	10000	Z	3000		
Single Filter	2.0 × 1.6	Y	15000	Z	3000		
	1.8 × 1.4	Y	15000	Z	3000		
	1.4 × 1.0	Y	15000	Z	3000		
	1.1 × 0.9	X	10000	Y	15000	J	5000
Dual Filter	1.8 × 1.4	Y	15000	Z	3000		
	1.5 × 1.1	Y	15000	J	5000		
Triple Filter	1.8 × 1.4	Y	15000	Z	3000		

② Tape material



● Taping dimensions

Type	Size[mm]	a	b	c	d	e	f	g
Duplexer	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	4.0 ± 0.1
	1.8 × 1.4	2.2 ± 0.1	1.8 ± 0.1	0.5 ± 0.05	1.55 ± 0.05	0.8 ± 0.1	0.30 ± 0.05	4.0 ± 0.1
	1.6 × 1.2	1.9 ± 0.05	1.5 ± 0.05	0.5 ± 0.05	1.5 + 0.1 / - 0	0.55 ± 0.05	0.20 ± 0.05	4.0 ± 0.1
Quadplexer	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	4.0 ± 0.1
Triplexer	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	4.0 ± 0.1
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	4.0 ± 0.1
	1.8 × 1.4	2.2 ± 0.1	1.8 ± 0.1	0.5 ± 0.05	1.55 ± 0.05	0.8 ± 0.1	0.30 ± 0.05	4.0 ± 0.1
	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	4.0 ± 0.1
	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	2.0 ± 0.05
Dual Filter	1.8 × 1.4	2.2 ± 0.1	1.8 ± 0.1	0.5 ± 0.05	1.55 ± 0.05	0.8 ± 0.1	0.30 ± 0.05	4.0 ± 0.1
	1.5 × 1.1	1.8 ± 0.1	1.4 ± 0.1	0.5 ± 0.05	1.5 + 0.1 / - 0	0.7 ± 0.1	0.25 ± 0.05	4.0 ± 0.1
Triple Filter	1.8 × 1.4	2.2 ± 0.1	1.8 ± 0.1	0.5 ± 0.05	1.55 ± 0.05	0.8 ± 0.1	0.30 ± 0.05	4.0 ± 0.1

Unit : mm

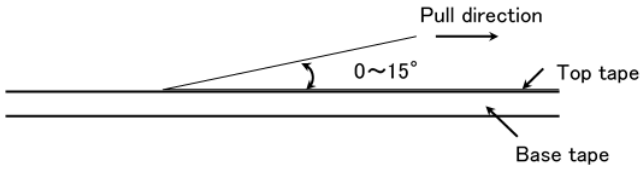
● Material of Tape (Conductive)

Tape : Polystyrene

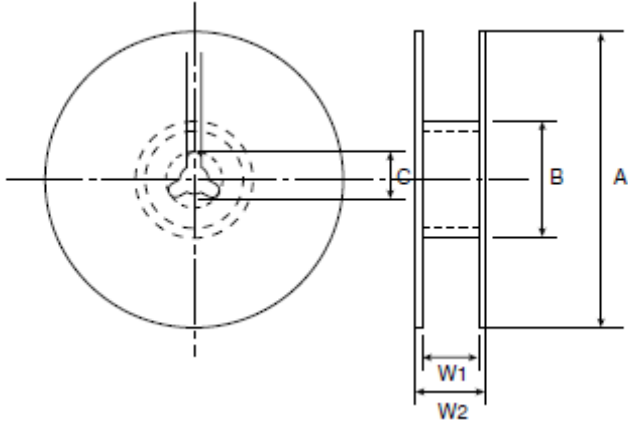
Top cover tape : Polyethylene terephthalate (PET) and Polyethylene

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

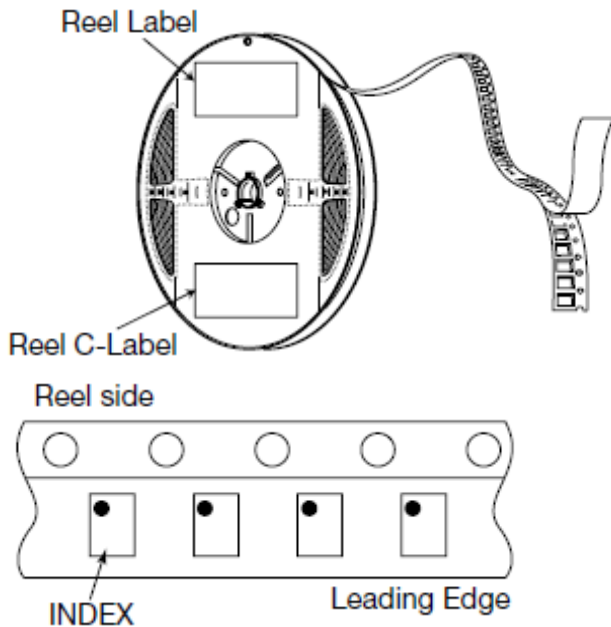
Surface resistance (reference value) : 109 Ω/sq Max.

Code	Quantity	A	B	C	W1	W2
X	10,000 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 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
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
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
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

Unit : mm

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

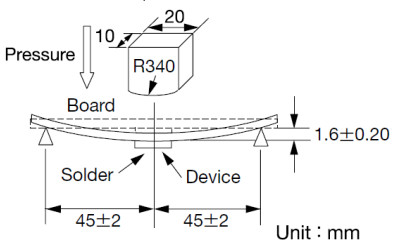
● Surface



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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.</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.
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	SAW : $+85^\circ\text{C}$, 90% to 95%RH, apply DC5V, 1000hours. FBAR : $+85^\circ\text{C}$, 90% to 95%RH, apply DC0V, 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	Please refer to individual specifications in detail.
11. Solderability	
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. 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°C min. 50sec. max.</p> <p>Temperature of upper surface of package and PCB surface. : 260°C max. 10sec. max.</p> <p>Ambient temperature cool slope : 1~4°C/sec.</p> <p>50~110sec.</p> <p>10sec.</p>

※ According to JIS(IEC) standard.

FBAR/SAW DEVICES for MOBILE COMMUNICATIONS

■ PRECAUTIONS

1. Storage conditions

Precautions	<p>◆Storage</p> <p>1. To maintain the solderability of terminal electrodes and to keep the packaging material in good condition, care must be taken to control temperature and humidity in the storage area. Humidity should especially be kept as low as possible.</p> <ul style="list-style-type: none">Recommended conditions<ul style="list-style-type: none">Ambient temperature : $-5 \sim +40^{\circ}\text{C}$Humidity : 40~85%RHThe ambient temperature must be kept below 30°C.Even under ideal storage conditions, the solderability of electrodes decreases gradually, so filters should be mounted within 1 year from the time of delivery.The packaging material should be kept where no chlorine or sulfur exists in the air.
Technical considerations	<p>◆Storage</p> <p>1. If the parts are stocked in a high temperature and humidity environment, problems such as reduced solderability caused by oxidation of terminal electrodes and deterioration of taping/ packaging materials may take place. For this reason, components should be used within 1 year from the time of delivery. If exceeding the above period, please check the solderability before using the filter.</p>

- Please contact our sales offices for further details of specifications.
All of the standard values listed here are subject to change without notice.
Therefore, please check the specifications carefully before use.