

# Datasheet of SAW Device

# SAW Duplexer

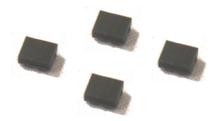
for Band4 / Unbalanced / LR /1814

# Murata PN: SAYEY1G73BA0F0A



≻ LTE-A

High Power Durability



Note : Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only. Please also read caution at the end of this document.



Revision Number	Date	Description
SAYEY1G73BA0F0A_rev. A	Feb-21-2014	∎ Initial Release
SAYEY1G73BA0F0A_rev. B	Jul-04-2014	■ Updated the specification
SAYEY1G73BA0F0A_rev. C	Aug-25-2014	■ Updated the specification
SAYEY1G73BA0F0A_rev. D	Aug-04-2015	Updated Measurement Circuit
SAYEY1G73BA0F0A_rev. E	Sep-02-2015	■ Updated Feature
SAYEY1G73BA0F0A_rev. F	Aug-09-2016	Updated General Information
SAYEY1G73BA0F0A_rev. G	Oct-13-2016	Updated Measurement Circuit
SAYEY1G73BA0F0A_rev. H	Jun-16-2017	Updated General Information
SAYEY1G73BA0F0A_rev. I	Oct-18-2017	
SAYEY1G73BA0F0A_rev. J	Nov-14-2017	■ Updated Input Power

- Operating temperature Storage temperature
- : -20 to +85 deg.C
- : -40 to +85 deg.C

: Yes

- Input Power

: +29.5 dBm 5000 h +50 deg.C

+30.0 dBm 2000 h +50 deg.C

: 3V (25+/-2 deg.C)

- Minimum Resistance between the terminals : 10M ohm

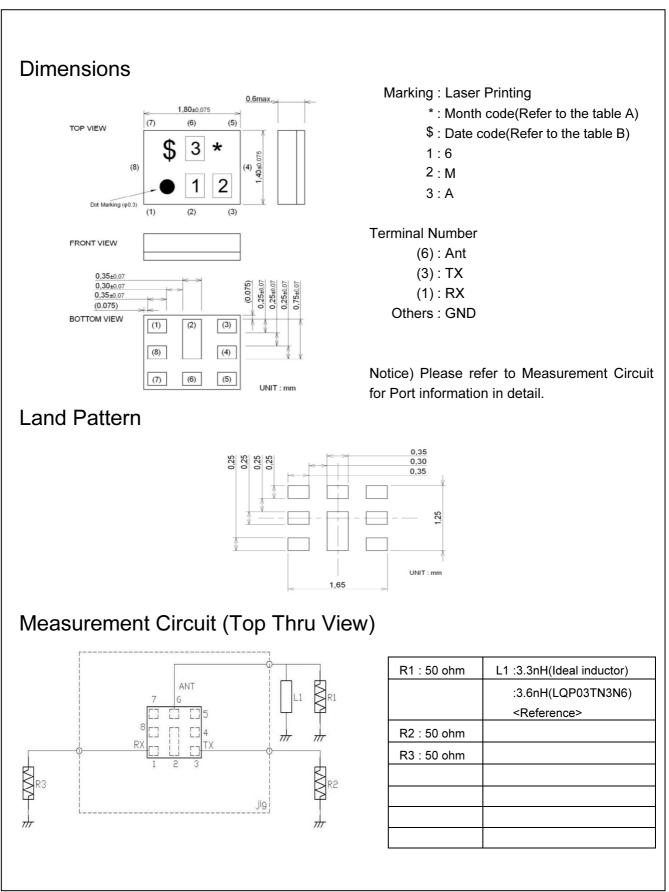
- RoHS compliance

- ESD (ElectroStatic Discharge) sensitive device

- D.C. Volatage between the terminals



# Package Dimensions & Recommended Land Pattern unit: mm





# Electrical Characteristic < TX→ANT. >

min.     Ivp.     max.     MHz     MHz     MHz       Insertion Loss     1710     10     1754     MHz     115     19     dB       Insertion Loss     1710     10     1754     MHz     115     19     dB       Insertion Loss     1712     10     1755     MHz     13     15     dB     Any     450     Hz     13     15     dB     Any     450     Hz     13     15     dB     Any     450     Hz     14     20     Ant     Ant     Ant     14     20     Ant     Ant     14     20     Ant     Ant     14     20     Ant     Ant     14     20     Ant     14     20     Ant     14     20     Ant     14     20     Ant     14     14     20     Ant     14     14     20     Ant     14     14     14     14     14     14     14     14     14     14     14     14     14<		$X \rightarrow ANT.$				Cha	racteria to +85 d	stics eg.C)	Unit	Note
Insertion Loss     1710.     to     1755.     MHz     1.5     1.9     dB       Insertion Loss     1710.25     to     1754.75     MHz     1.5     1.9     dB       Ripple Deviation     1710.25     to     1752.5     MHz     0.3     1.5     dB     Any 4.5MHz       VSWR     1710.     to     1755.     MHz     0.3     1.5     dB     Any 5MHz       VSWR     1710.     to     1755.     MHz     1.4     2.0     TX       Absolute Attenuation     10.     to     1755.     MHz     30     48     dB     B17 TX       704.     to     716.     MHz     30     47     dB     B070MHz RX Rejection       777.     to     787.     MHz     30     47     dB     BC10 RX       1226.     to     1250.     MHz     30     47     dB     BC10 RX       1587.37     MHz     30     44     42     dB     BC10 RX       12						min.	typ.*	max.		
Initial     Initial <t< td=""><td>Center Frequency</td><td></td><td></td><td></td><td></td><td></td><td></td><td></td><td>MHz</td><td></td></t<>	Center Frequency								MHz	
Instruction     1712.5     to     1752.5     MHz     1.4     1.8     dB <sub>NT</sub> Any 4.5MHz       Ripple Deviation     1710.     to     1755.     MHz     0.3     1.5     dB     Any 5MHz       VSWR     1710.     to     1755.     MHz     1.4     2.0     TX       Absolute Attenuation     10.     to     1785.     MHz     30     48     dB       699.     to     716.     MHz     30     48     dB     B17 TX       704.     to     716.     MHz     30     48     dB     B13 TX       716.     to     746.     MHz     30     46     dB     B5 TX       851.     to     894.     MHz     37     46     dB     BC10 RX       1226.     to     1250.     MHz     37     46     dB     COMPASS       1577.46     to     1585.42     MHz     43     51     dB     Lower GPS       1577.56     1605.89	Insertion Loss		to							
Ripple Deviation     1710.     to     1755.     MHz     0.3     1.5     dB     Any SMHz       VSWR     1710.     to     1755.     MHz     1.4     2.0     TX       Absolute Attenuation     10.     to     775.     MHz     30     48     dB       704.     to     716.     MHz     30     48     dB     B17 TX       704.     to     716.     MHz     30     48     dB     B17 TX       716.     to     716.     MHz     30     48     dB     B13 TX       716.     to     716.     MHz     30     47     dB     B13 TX       824.     to     849.     MHz     37     46     dB     B51 TX       851.     to     894.     MHz     37     46     dB     BC10 RX       1226.     to     1250.     MHz     43     51     dB     Lower GPS       1577.46     1577.46     1573.37     MHz <td></td>										
VŠWR     1710.     to     1755.     MHz     1.4     2.0     TX       Absolute Attenuation     10.     to     778.     MHz     30     48     dB       699.     to     716.     MHz     30     48     dB     B12 TX       704.     to     716.     MHz     30     48     dB     B17 TX       716.     to     746.     MHz     30     48     dB     B13 TX       704.     to     716.     MHz     30     46     dB     B13 TX       824.     to     849.     MHz     30     46     dB     B57 X       851.     to     894.     MHz     37     46     dB     GC9 SL2       1559.     to     1563.     MHz     42     50     dB     COMPASS       1565.42     to     1573.37     The     143     51     dB     Lower GPS       1577.46     MHz     45     53     dB     Upper GPS										
Interview     Interview     Interview     Interview     Interview     ANT.       Absolute Attenuation     10.     to     728.     MHz     30     48     dB       699.     to     716.     MHz     30     48     dB     B12 TX       704.     to     716.     MHz     30     48     dB     B17 TX       716.     to     746.     MHz     30     47     dB     B13 TX       824.     to     849.     MHz     30     46     dB     B5 TX       851.     to     894.     MHz     37     46     dB     BC10 RX       1226.     to     1250.     MHz     37     46     dB     COMPASS       1569.     to     1563.     MHz     42     50     dB     Regular GPS       1573.37     to     1577.46     MHz     45     53     dB     Upper GPS       1597.55     to     1880.     MHz     43     53									dB	
Absolute Attenuation     10.     to     728.     MHz     30     48     dB       699.     to     716.     MHz     30     48     dB     B12 TX       704.     to     716.     MHz     30     48     dB     B12 TX       704.     to     716.     MHz     30     48     dB     B17 TX       716.     to     746.     MHz     30     47     dB     B13 TX       704.     to     777.     to     787.     MHz     30     46     dB     B51X       851.     to     849.     MHz     37     46     dB     BC10 RX       1226.     to     1550.     MHz     42     50     dB     COMPASS       1559.     to     1563.     MHz     43     51     dB     Lower GPS       1577.46     to     1585.42     MHz     45     53     dB     Upper GPS       1597.55     to     1880.     MHz<	VSWR	-								
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824.     to     849.     MHz     30     46     dB     B5 TX       851.     to     894.     MHz     37     46     dB     BC10 RX       1226.     to     1250.     MHz     34     42     dB     GPS L2       1559.     to     1563.     MHz     42     50     dB     COMPASS       1565.42     to     1573.37     MHz     43     51     dB     Lower GPS       1573.37     to     1577.46     MHz     45     53     dB     Upper GPS       1577.46     to     1585.42     MHz     43     53     dB     GLONASS       1597.55     to     1605.89     MHz     42     49     dB     DCS RX       1930.     to     1990.     MHz     41     47     dB     PCS RX       2110.     to     2155.     MHz     40     49     dB     WCS RX       2400.     to     2500.     MHz     30		-								
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2400.     to     2500.     MHz     35     46     dB     ISM2.4       2440.     to     2494.     MHz     40     47     dB     WLAN co-ex       2500.     to     2570.     MHz     39     49     dB     B7 TX       3410.     to     3520.     MHz     25     42     dB     2f       4900.     to     5950.     MHz     10     15     dB     ISM 5G       4905.     to     5267.     MHz     10     15     dB     WLAN co-ex       6830.     to     7030.     MHz     10     15     dB     WLAN co-ex       6830.     to     7030.     MHz     10     18     dB     4f       8540.     to     8785.     MHz     12     18     dB     5f       10250.     to     10540.     MHz     10     18     dB     6f									dB	
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4900.     to     5950.     MHz     10     15     dB     ISM 5G       4905.     to     5267.     MHz     10     15     dB     WLAN co-ex       6830.     to     7030.     MHz     10     18     dB     4f       8540.     to     8785.     MHz     12     18     dB     5f       10250.     to     10540.     MHz     10     18     dB     6f				2570.		39	49		dB	
4905.     to     5267.     MHz     10     15     dB     WLAN co-ex       6830.     to     7030.     MHz     10     18     dB     4f       8540.     to     8785.     MHz     12     18     dB     5f       10250.     to     10540.     MHz     10     18     dB     6f		3410.	to	3520.	MHz	25	42		dB	2f
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10250. to 10540. MHz 10 18 dB 6f			to							
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11960. to 12295. MHz 2.0 18.0 dB 7f   Image: Solution of the second s		10250.	to	10540.						
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\* Typical value at 25±2deg.C



## Electrical Characteristic $\langle ANT. \rightarrow RX \rangle$

AN	$T. \rightarrow RX$				Cha (-201	racteria o +85 d	stics eg.C)	Unit	Note	
					min.	typ.*	max.			
Center Frequency						2133		MHz		
Insertion Loss	2110.	to	2155.	MHz		1.8	2.3	dB		
	2110.25	to	2154.75			1.8	2.3	dB		
	2112.5	to	2152.5	MHz		1.8	2.3	dB <sub>INT</sub>	Any 4.5MHz	
Ripple Deviation	2110.	to	2155.	MHz		0.2	1.2	dB	Any 5MHz	
VŚŴR	2110.	to	2155.	MHz		2.0	2.2		RX	
	2110.	to	2155.	MHz		1.7	2.2		ANT.	
Absolute Attenuation	10.	to	699.	MHz	40	53		dB		
	400.	to	400.	MHz	50	62		dB	RX - TX	
	699.	to	714.	MHz	45	52		dB	B12 TX	
	777.	to	787.	MHz	40	51		dB	B13 TX	
	824.	to	849.	MHz	40	50		dB	B5 TX	
	1310.	to	1355.	MHz	38	44		dB	2TX - RX	
	1710.	to	1755.	MHz	45	53		dB	TX	
ļ	1755.	to	2025.	MHz	15	38		dB		
	1910.	to	1955.	MHz	30	41		dB	(RX + TX) / 2	
	1955.	to	2255.	MHz	1.0	1.2		dB		
ļ	2305.	to	2315.	MHz	29	35		dB	WCS TX	
ļ	2400.	to	2500.	MHz	35	41		dB	ISM2.4	
ļ	2500.	to	3820.	MHz	32	38		dB		
ļ	3820.	to	3910.	MHz	33	38		dB	RX + TX	
ļ	4420.	to	4310.	MHz	25	34		dB	2f	
	4900.	to	5950.	MHz	21	26		dB	ISM 5G	
	5510.	to	5685.	MHz	21	26		dB	WLAN co-ex	
	5530.	to	5665.	MHz	21	26		dB	RX + 2TX	
	6330.	to	6465.	MHz	20	25		dB	3f	
	8440.	to	8620.	MHz	13	22		dB	4f	
	10540.		10785.	MHz	10	22		dB	Sf	
	12660.	to	12930.	MHz	10	22		dB	6f	
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\* Typical value at 25±2deg.C



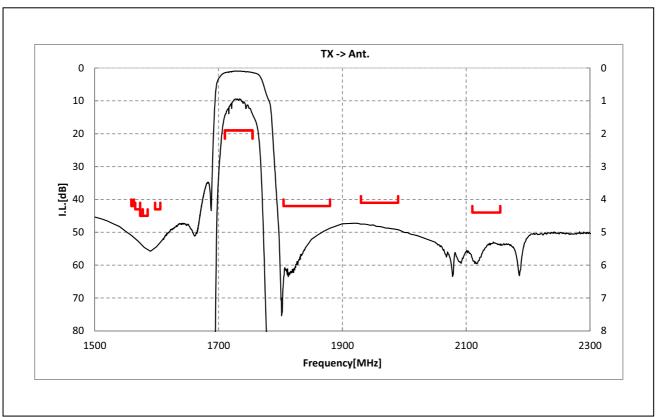
# Electrical Characteristic < TX→RX. >

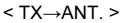
		511	<u> </u>		Cha	racteri	stics		
T	$X \rightarrow RX$				( -20 f min.	to +85 d typ.*		Unit	Note
Isolation	1710.	to	1755.	MHz	54	57	max.	dB	TX
	1712.5	to	1752.5	MHz	54	57		dB <sub>INT</sub>	TX, Any 4.5MHz
	2110.	to	2155.	MHz	51	54		dB	RX
	2112.5	to	2152.5	MHz	51	55		dB <sub>INT</sub>	RX, Any 4.5MHz
	1574. 3410.	to	1577. 3520.	MHz	40 20	62 52		dB dB	GPS
	5120.	to	5275.	MHz MHz	20	52 44		dB dB	2f 3f
	5120.	to	5275.		20	44		uБ	31
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	<u> </u>				ļ	!	I	ļ	* Typical value at 25±2deg.C

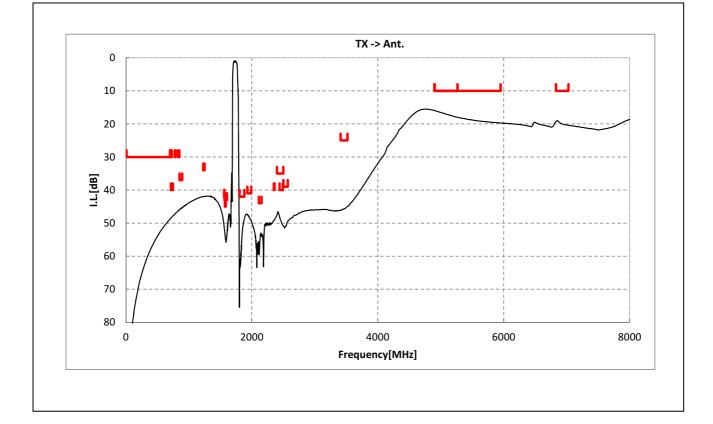
\* Typical value at 25±2deg.C



# **Electrical Characteristic**

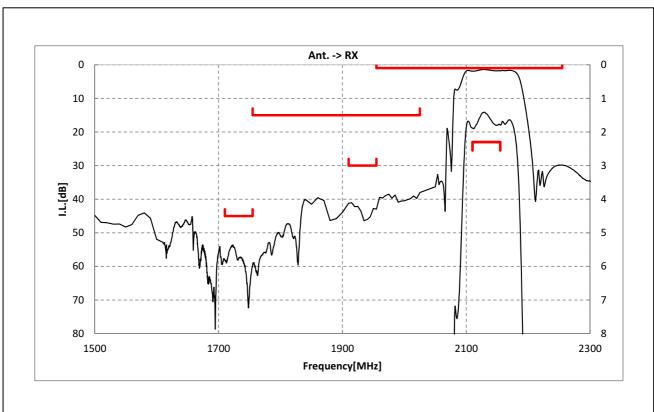




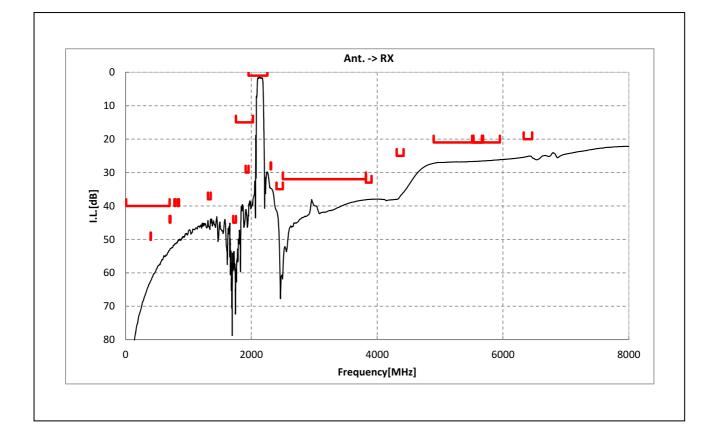




# **Electrical Characteristic**

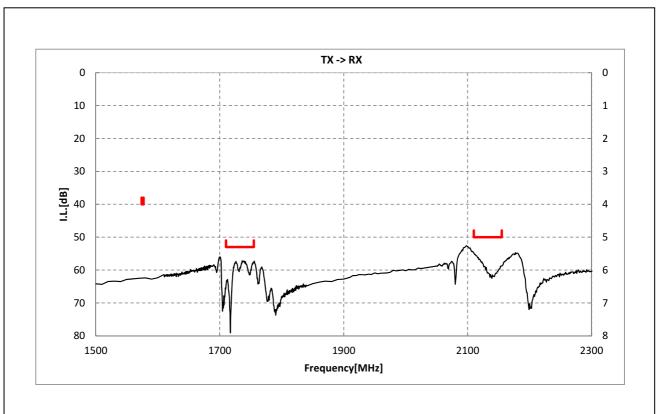


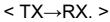
< ANT. $\rightarrow$ RX >

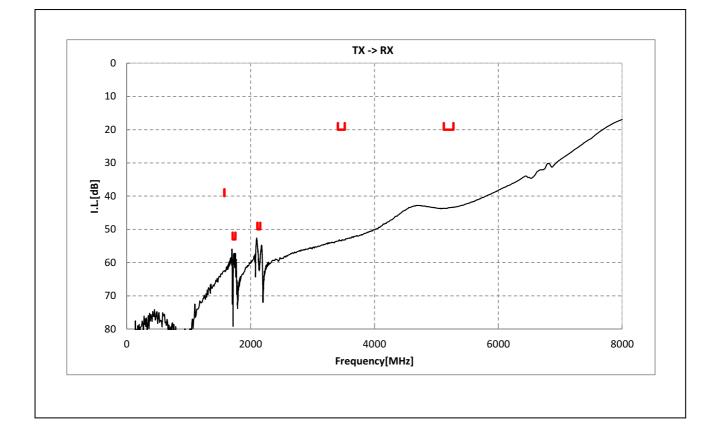




## **Electrical Characteristic**



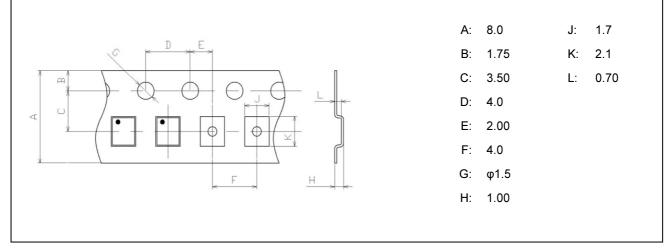




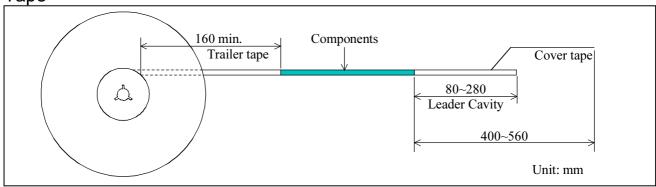


Dimensions of Tape & Reel unit: mm

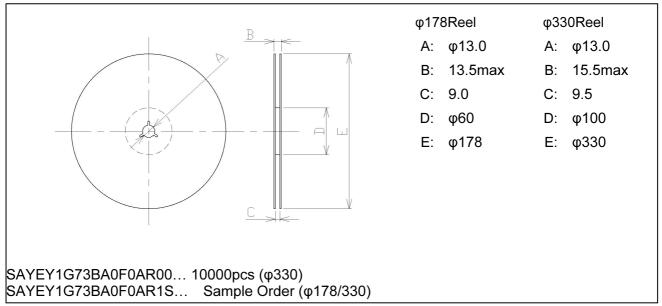
#### Carrier Tape



Tape



Reel





#### Marking Code

Table A: Month Code

<u> </u>	01071												
ſ	2013	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	2017 2021	Α	В	С	D	Е	F	G	н	J	ĸ	L	м
ſ	2014	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	2018 2022	N	Ρ	Q	R	S	Т	U	V	W	х	Y	Z
Ī	2015	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	2019 2023	а	р	ю	d	e	f	g	h	j	k	l	m
[	2016	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
	2020 2024	n	p	Ŷ	r	4	t	u	v	ω	ĸ	y	8

#### Table B: Date Code

date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	
code	А	В	С	D	E	F	G	Η	J	К	
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	L	М	Ν	Р	Q	R	S	Т	U	V	
date	21st	22nd	23rd	24th	25th	26th	27th	28th	29th	30th	31st
code	W	Х	Y	Z	а	b	Ċ	d	е	f	g

#### Important Notice (1/2)

PLEASE READ THIS NOTICE BEFORE USING OUR PRODUCTS.

Please make sure that your product has been evaluated and confirmed from the aspect of the fitness for the specifications of our product when our product is mounted to your product. All the items and parameters in this product specification/datasheet/catalog have been prescribed on the premise that our product is used for the purpose, under the condition and in the environment specified in this specification. You are requested not to use our product deviating from the condition and the environment specified in this specification.

Please note that the only warranty that we provide regarding the products is its conformance to the specifications provided herein. Accordingly, we shall not be responsible for any defects in products or equipment incorporating such products, which are caused under the conditions other than those specified in this specification.

WE HEREBY DISCLAIMS ALL OTHER WARRANTIES REGARDING THE PRODUCTS, EXPRESS OR IMPLIED, INCLUDING WITHOUT LIMITATION ANY WARRANTY OF FITNESS FOR A PARTICULAR PURPOSE, THAT THEY ARE DEFECT-FREE, OR AGAINST INFRINGEMENT OF INTELLECTUAL PROPERTY RIGHTS.

The product shall not be used in any application listed below which requires especially high reliability for the prevention of such defect as may directly cause damage to the third party's life, body or property. You acknowledge and agree that, if you use our products in such applications, we will not be responsible for any failure to meet such requirements.

Furthermore, YOU AGREE TO INDEMNIFY AND DEFEND US AND OUR AFFILIATES AGAINST ALL CLAIMS, DAMAGES, COSTS, AND EXPENSES THAT MAY BE INCURRED, INCLUDING WITHOUT LIMITATION, ATTORNEY FEES AND COSTS, DUE TO THE USE OF OUR PRODUCTS IN SUCH APPLICATIONS.



#### Important Notice (2/2)

- Aircraft equipment.
- Aerospace equipment
- Undersea equipment.
- Power plant control equipment Medical equipment.
- Transportation equipment (vehicles, trains, ships, elevator, etc.).
- Traffic signal equipment.
- Disaster prevention / crime prevention equipment.
- Burning / explosion control equipment
- Application of similar complexity and/ or reliability requirements to the applications listed in the above.

We expressly prohibit you from analyzing, breaking, Reverse-Engineering, remodeling altering, and reproducing our product. Our product cannot be used for the product which is prohibited from being manufactured, used, and sold by the regulations and laws in the world.

Please do not use the product in molding condition.

This product is ESD (ElectroStatic Discharge) sensitive device. When you install or measure this, you should be careful not to add antistatic electricity or high voltage. Please be advised that you had better check anti serge voltage.

We do not warrant or represent that any license, either express or implied, is granted under any our patent right, copyright, mask work right, or our other intellectual property right relating to any combination, machine, or process in which our products or services are used. Information provided by us regarding third-party products or services does not constitute a license from us to use such products or services or a warranty or endorsement thereof. Use of such information may require a license from a third party under the patents or other intellectual property of the third party, or a license from us under our patents or other intellectual property.

Please do not use our products, our technical information and other data provided by us for the purpose of developing of mass-destruction weapons and the purpose of military use. Moreover, you must comply with "foreign exchange and foreign trade law", the "U.S. export administration regulations", etc.

Please note that we may discontinue the manufacture of our products, due to reasons such as end of supply of materials and/or components from our suppliers.

Customer acknowledges that Murata will, if requested by you, conduct a failure analysis for defect or alleged defect of Products only at the level required for consumer grade Products, and thus such analysis may not always be available or be in accordance with your request (for example, in cases where the defect was caused by components in Products supplied to Murata from a third party).

The product shall not be used in any other application/model than that of claimed to Murata.

Customer acknowledges that engineering samples may deviate from specifications and may contain defects due to their development status.

We reject any liability or product warranty for engineering samples.

In particular we disclaim liability for damages caused by

•the use of the engineering sample other than for evaluation purposes, particularly the installation or integration in the product to be sold by you,

·deviation or lapse in function of engineering sample,

·improper use of engineering samples.

We disclaim any liability for consequential and incidental damages.

If you can't agree the above contents, you should inquire our sales.