

Datasheet of SAW Device

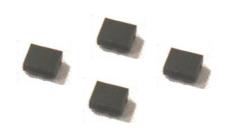
SAW Extractor

for GPS_GLONASS_BEIDOU / 1in2out Unbalanced / 1814

Murata PN: SADRM1G56AA0F0A

Feature

Usable Cellular Band (699-1510.9MHz,1710-2690MHz)



Note: Murata SAW Component is applicable for Cellular /Cordless phone (Terminal) relevant market only.

Please also read caution at the end of this document.





General Information

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

- Input Power :+13dBm, 50°C, 2000hours, CW tone

:+27dBm, 50°C,5000hours, CW tone (for 699-1510.9MHz, 1710-2690MHz) :+35dBm, 50°C,5000hours, GSM duty cycle 1:8 (for 824-849MHz, 880-915MHz) :+33dBm, 50°C,5000hours, GSM duty cycle 1:8 (for 1710-1785MHz, 1850-1910MHz)

- D.C. Volatage between the terminals : 3V (25+/-2 deg.C)

- Minimum Resistance between the terminals : 1M ohm - RoHS compliance : Yes

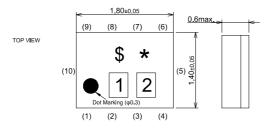
- ESD (ElectroStatic Discharge) sensitive device

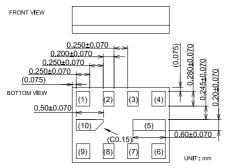


Package Dimensions & Recommended Land Pattern

unit: mm

Dimensions





Marking: Laser Printing

* : Month code(Refer to the table A)

\$: Date code(Refer to the table B)

1:8 2:6

Terminal Number

(1): Unbalance Port (ANT. Port)

(9): Unbalance Port (Cellular Port)

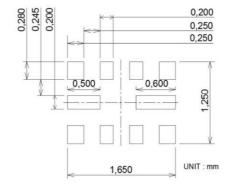
(4): Unbalance Port (GPS/GLONASS/BEIDOU Port)

(8) : Inductor(9.1nH)

Others : GND.

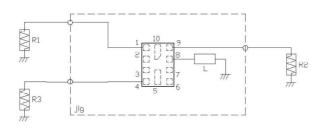
Notice) Please refer to Measurement Circuit for Port information in detail.

Land Pattern

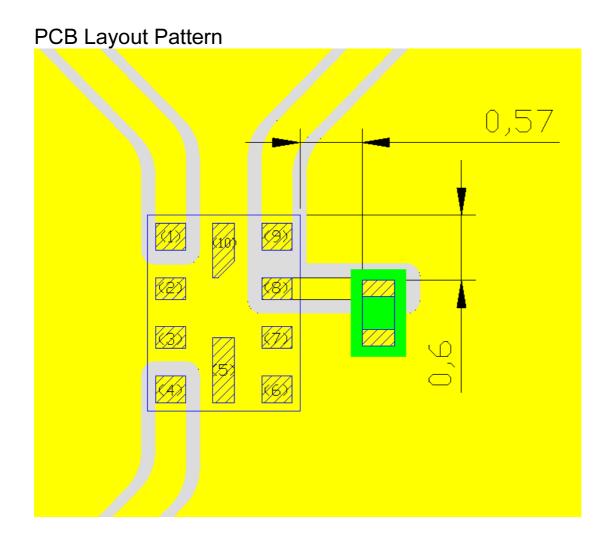




Measurement Circuit (Top Thru View)



R1 : 50 ohm	
R2 : 50 ohm	
R3 : 50 ohm	
L :9.1nH	
(LQP03TN9N1)	





Electrical Characteristic < Ant.->GPS/GLONASS/BEIDOU >

Characteristics Characteristics											
Amt > CDC/C				to +85 d		Unit	Note				
Ant>GPS/G	SLONASS/BE							Note			
Center Frequency	ı			min.	1575.4	max.	MHz				
Insertion Loss	1574.39 to	1576.45	MUZ		1.0	1.3	dB	GPS			
liiseition Loss	1559.05 to	1563.15			1.3	2.0	dB	Beidou			
	1597.55 to	1605.89			1.7	2.2	dB	GLONASS			
GDT Ripple Deviation	1597.55 to	1605.89			6	15	ns	GLONASS			
Ripple Deviation	1574.39 to	1576.45			0.1	0.5	dB	GPS			
	1559.05 to	1563.15			0.2	1.0	dB	Beidou			
	1597.55 to	1605.89			0.4	1.0	dB	GLONASS			
VSWR	1574.39 to	1576.45	MHz		1.4	1.8		Ant. Port			
	1559.05 to	1563.15			1.2	1.8		Ant. Port			
	1597.55 to	1605.89			1.4	1.8		Ant. Port			
	1574.39 to	1576.45			1.4	1.8		GNSS Port			
	1559.05 to	1563.15			1.2	1.8		GNSS Port			
Alexander Attanzentian	1597.55 to	1605.89	MHz	20	1.3	1.8	-ID	GNSS Port			
Absolute Attenuation	617. to	698.	MHz	36	42		dB				
	777. to 814. to	798. 915.	MHz MHz	36 36	43		dB dB				
		915.	MHz	32	34		dB dB				
	925. to	960.	MHz	38	45		dB	 			
	1427. to	1463.	MHz	30	35		dB				
	1710. to	1785.	MHz	38	43		dB	DCS-Tx			
	1786. to	1797.	MHz	37	42		dB				
	1850. to	1910.	MHz	36	40		dB	PCS-Tx			
	1910. to	1980.	MHz	35	40		dB	·			
	2010. to	2025.	MHz	34	38		dB	B34Tx			
	2305. to	2315.	MHz	31	38		dB	B30 Tx			
	2401. to	2483.	MHz	30	35		dB	2.4G ISM			
	2500. to	2570.	MHz	29	33		dB	B7 Tx			
	5160. to	5885.	MHz	15	20		dB	5G ISM			
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^{*} Typical value at 25±2deg.C



Electrical Characteristic < ANT. → Cellular >

699. to 756. MHz	<u>Licetifical Offa</u>	aotorio	<i>-</i>	<u> </u>	71 4 1	•	<u> </u>	iiuiui	-		
ANT. → Cellular							racteri	stics			
min. lyp.* max. 617. 698. MHz 1.3 1.8 dB B71 TWRX 699. to 766. MHz 0.9 1.2 dB B5.6 TWRX 14279 to 1510.9 MHz 0.9 1.2 dB B5.6 TWRX 14279 to 1510.9 MHz 1.4 1.8 dB B1.21 STWRX 1710. to 2200. MHz 1.4 1.8 dB B1.23 S6 TWRX 2300. to 2400. MHz 1.4 1.8 dB B4.0 TWRX 2496. to 2690. MHz 1.3 1.8 dB B4.7 TWRX 3400. to 3600. MHz 1.3 1.8 dB B7.4 TWRX 3400. to 3600. MHz 1.3 1.8 dB B4.7 TWRX 3400. to 3600. MHz 1.4 2.0 Ant. Port 699. to 766. MHz 1.8 2.0 Ant. Port 14279 to 1510.9 MHz 1.8 2.0 Ant. Port 14279 to 1510.9 MHz 1.4 2.0 Ant. Port 14279 to 1510.9 MHz 1.5 2.0 Ant. Port 2300. to 2400. MHz 1.1 2.0 Ant. Port 2496. to 2690. MHz 1.5 2.0 Ant. Port 2496. to 2690. MHz 1.5 2.0 Ant. Port 699. to 766. MHz 1.3 2.0 Cell Port 699. to 766. MHz 1.5 2.0 Cell Port 699. to 760. MHz 1.5 6.0 6.0 699. to 760. MHz 6.0 6.0 699. to 760. MHz 6.0 6.0 699. to 760. MHz 6.0 6.0 699. to 7	ANT	ANT. → Cellular							Unit	Note	
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689	Insertion Loss	617		608	Mu		12	1 2	ΛD	R71 TY/RY	
824, 10 960, MHz	Insertion Loss		1_								
1427 9 to 1510 9 MHz											
1710		-									
2300											
2496. to 2690. MHz											
3400. to 3600. MHz 5.2 7.0 dB B42 YNRX 617. to 698. MHz 14. 2.0 Ant. Port 699. to 756. MHz 14. 2.0 Ant. Port 824. to 960. MHz 16. 2.0 Ant. Port 1427.9 to 1510.9 MHz 18. 2.0 Ant. Port 1710. to 2200. MHz 1.4 2.0 Ant. Port 2300. to 2400. MHz 1.1 2.0 Ant. Port 2496. to 2690. MHz 1.5 2.0 Ant. Port 3400. to 3600. MHz 1.5 2.0 Ant. Port 617. to 688. MHz 1.3 2.0 Cell Port 689. to 756. MHz 1.3 2.0 Cell Port 6824. to 960. MHz 1.5 2.0 Cell Port 1427.9 to 1510.9 MHz 1.9 2.2 Cell Port 1427.9 to 1510.9 MHz 1.7 2.0 Cell Port 2496. to 2200. MHz 1.7 2.0 Cell Port 2496. to 2590. MHz 1.2 2.0 Cell Port 2496. to 2590. MHz 1.2 2.0 Cell Port 3400. to 3600. MHz 1.2 2.0 Cell Port 2498. to 2690. MHz 1.9 2.2 Cell Port 3400. to 3600. MHz 1.2 2.0 Cell Port 3400. to 3600. MHz 1.2 2.0 Cell Port 3400. to 3600. MHz 1.2 2.0 Cell Port 3400. to 3600. MHz 1.9 3.0			to								
617. 10 698. MHz 1.4 2.0 Ant. Port 699. 10 756. MHz 1.4 2.0 Ant. Port 824. 10 960. MHz 1.8 2.0 Ant. Port 1427.9 10 1510.9 MHz 1.8 2.0 Ant. Port 1710. 10 2200. MHz 1.1 2.0 Ant. Port 2300. 10 2400. MHz 1.1 2.0 Ant. Port 2496. 10 2690. MHz 1.5 2.0 Ant. Port 3400. 10 3600. MHz 1.5 2.0 Ant. Port 617. 10 698. MHz 1.3 2.0 Cell Port 624. 10 960. MHz 1.3 2.0 Cell Port 624. 10 960. MHz 1.3 2.0 Cell Port 624. 10 960. MHz 1.5 2.0 Cell Port 625. 1260. MHz 1.7 2.0 Cell Port 626. 1260. MHz 1.7 2.0 Cell Port 627. 2300. 10 2400. MHz 1.7 2.0 Cell Port 628. 1260. MHz 1.5 9.0 Cell Port 639. 10 2400. MHz 1.5 9.0 Cell Port 640. 1574.38 10 1576.45 MHz 1.2 2.0 Cell Port 640. 1574.38 10 1576.45 MHz 1.5 9.0 Cell Port 640. 1574.38 10 1576.45 MHz 1.0 dB deidou 640. 1580.58 1565.315 MHz 7.0 11.0 dB deidou 640. 1580.58 1565.315 MHz 7.0 11.0 dB deidou 640. 1580.58 1565.315 MHz 1.0 dB deidou 640. 1580.58 1580.58 1580.58 11.0 dB deidou			to								
699. to 756. MHz			to						dB		
824 to 960 MHz	VSWR	617.	to	698.			1.4	2.0			
1427.9 to 1510.9 MHz			to				1.4				
1710		824.	to	960.	MHz		1.6	2.0		Ant. Port	
2300 to 2400 MHz		1427.9	to	1510.9	MHz		1.8	2.0		Ant. Port	
2300 to 2400 MHz 1.5 2.0 Ant. Port 3400 to 3600 MHz 1.5 2.0 Ant. Port 617 to 698 MHz 1.3 2.0 Cell Port 699 to 756 MHz 1.3 2.0 Cell Port 1427.9 to 1510.9 MHz 1.5 2.0 Cell Port 1427.9 to 1510.9 MHz 1.5 2.0 Cell Port 1427.9 to 1510.9 MHz 1.9 2.2 Cell Port 1710 to 2200 MHz 1.7 2.0 Cell Port 2300 to 2400 MHz 1.7 2.0 Cell Port 2496 to 2690 MHz 1.6 2.0 Cell Port 3400 to 3600 MHz 5.9 9.0 Cell Port 1574.39 to 1576.45 MHz 1.2 2.1 dB GPS 1559.05 to 1563.15 MHz 7.0 11.0 dB Beldou 1597.55 to 1605.89 MHz 8.0 11.0 dB GLONASS		1710.	to	2200.	MHz		1.4	2.0		Ant. Port	
2496				2400.	MHz		1.1	2.0			
3400. 10 3600. MHz 1.3 2.0 Cell Port							1.5	2.0			
617. to 698. MHz 1.3 2.0 Cell Port 699. to 756 MHz 1.3 2.0 Cell Port 824. to 960. MHz 1.5 2.0 Cell Port 1427.9 to 1510.9 MHz 1.9 2.2 Cell Port 1710. to 2200. MHz 1.7 2.0 Cell Port 2300. to 2400. MHz 1.6 2.0 Cell Port 2496. to 2690. MHz 1.6 2.0 Cell Port 3400. to 3600. MHz 5.9 9.0 Cell Port 1574.39 to 1563.15 MHz 7.0 11.0 dB Beldou 1597.55 to 1605.89 MHz 8.0 11.0 dB GLONASS											
899		L									
824 10 960 MHz 1.5 2.0 Cell Port 1427.9 10 1510.9 MHz 1.9 2.2 Cell Port 1770 10 2200 MHz 1.7 2.0 Cell Port 2300 10 2400 MHz 1.2 2.0 Cell Port 2496 10 2690 MHz 1.6 2.0 Cell Port 3400 10 3600 MHz 5.9 9.0 Cell Port 3400 1576.45 MHz 12 2.1 dB GPS 1574.39 1576.45 MHz 7.0 11.0 dB Beldou 1597.55 10 1605.89 MHz 8.0 11.0 dB GLONASS 1597.55 10 1605.89 MHz 1.0 GROWN											
1427.9 to 1510.9 MHz											
1710		-									
2300 10 2400 MHz 1.2 2.0 Cell Port											
2496 10 2690 MHz 1.6 2.0 Cell Port 3400 to 3800 MHz 12 21 dB GPS 1574.39 to 1576.45 MHz 12 21 dB GPS 1599.5 to 1563.15 MHz 7.0 11.0 dB Beldou Beldou 1597.55 to 1605.89 MHz 8.0 11.0 dB GLONASS		0000	-								
Absolute Attenuation		-									
Absolute Attenuation											
1559.05 to 1563.15 MHz 7.0 11.0 dB Beidou 1597.55 to 1605.89 MHz 8.0 11.0 dB GLONASS			to					9.0			
1597.55 to 1605.89 MHz 8.0 11.0 dB GLONASS	Absolute Attenuation	1574.39	to								
		1559.05	to								
		1597.55	to	1605.89	MHz	8.0	11.0		dB	GLONASS	
		<u> </u>				-	-				
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		<u> </u>									
* Turning Luchus at OF LOde of C											

^{*} Typical value at 25±2deg.C



Electrical Characteristic < GPS/GLONASS/BEIDOU<-->Cellular >

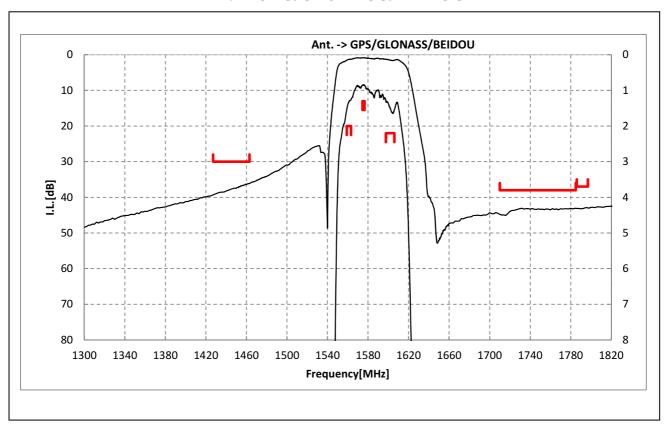
GPS/GLON/		Characteristics (-20 to +85 deg.C)			Unit	Note		
				min.	typ.*	max.		
solation	1574.39 to	1576.45	MHz	14	22		dB	GPS
Solution	1559.05 to	1563.15	MHz	8.0	11.8		dB	Beidou
	1597.55 to	1605.89	MHz	7.0	10.5		dB	GLONASS
	-			1				

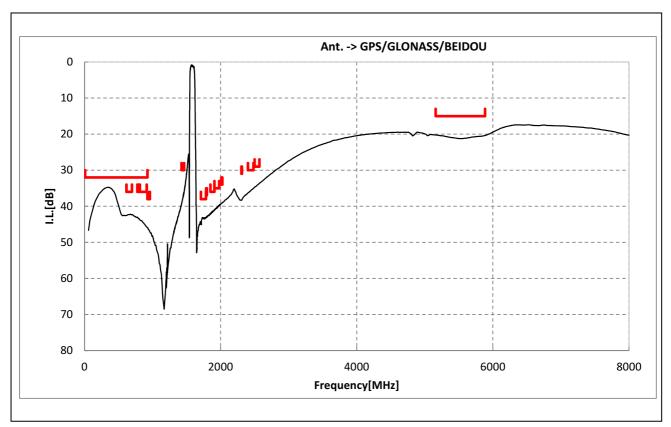
^{*} Typical value at 25±2deg.C



Electrical Characteristic

< Ant.->GPS/GLONASS/BEIDOU >

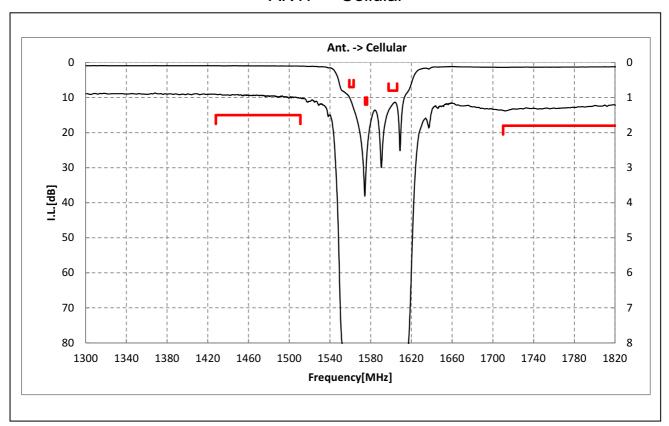


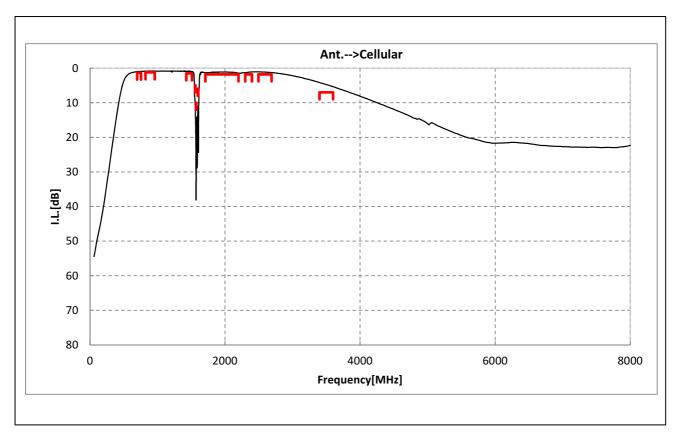




Electrical Characteristic

< ANT. → Cellular >

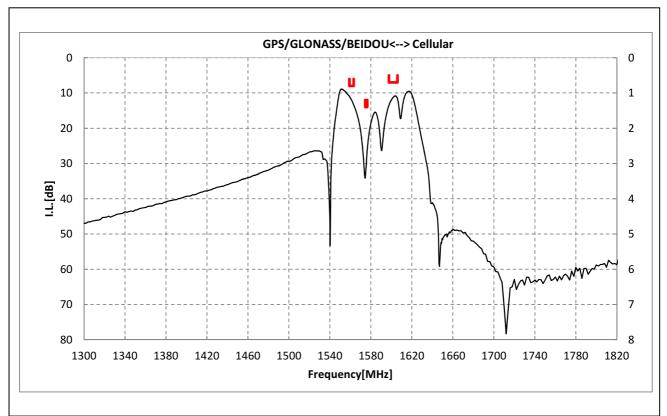


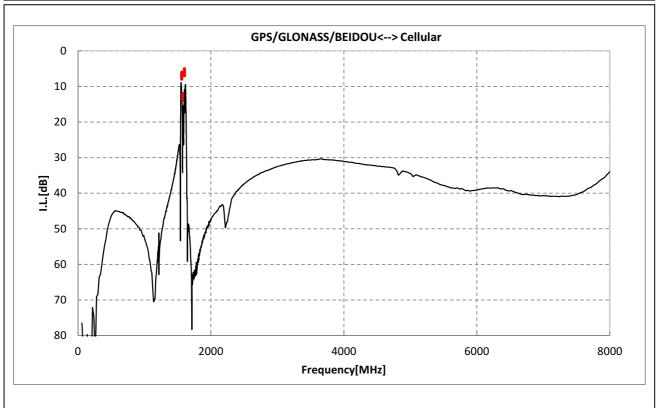




Electrical Characteristic

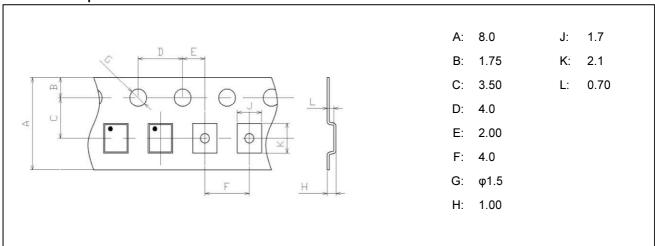
< GPS/GLONASS/BEIDOU<-->Cellular >



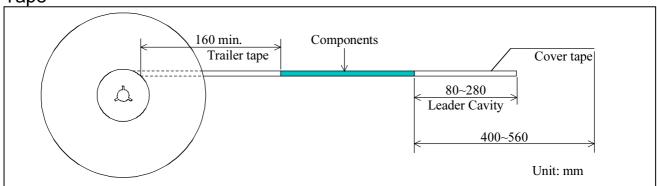


Dimensions of Tape & Reel unit: mm

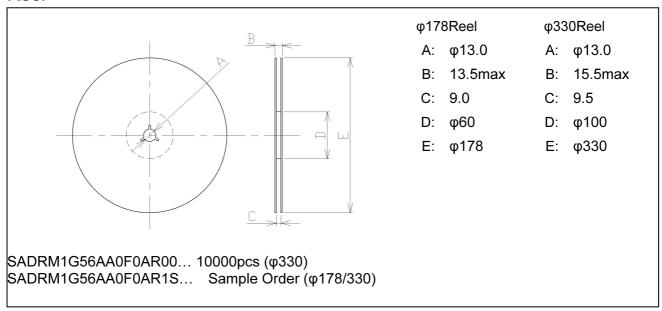
Carrier Tape



Tape



Reel





Marking Code

Ta	h	le	Α:	M	loni	th	Cod	e

2013	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2017 2021	Α	В	С	D	Е	F	G	Н	J	K	L	M
2014	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2018 2022	N	Р	Q	R	S	T	U	V	W	Х	Υ	Z
2015	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2019 2023	а	b	10	d	е	f	g	h	j	k	Q	m
2016	Jan.	Feb.	Mar.	Apr.	May.	Jun.	Jul.	Aug.	Sep.	Oct.	Nov.	Dec.
2020 2024	n	P	8	r	d	t	a	U	ω	æ	y	8

Table B: Date Code

date code	21st W	22nd X	23rd V	24th	25th a	26th b	27th c	28th	29th e	30th	31st g
code	L	М	N	Р	Q	R	S	Т	U	V	
date	11th	12th	13th	14th	15th	16th	17th	18th	19th	20th	
code	Α	В	С	D	Е	F	G	Н	J	K	
date	1st	2nd	3rd	4th	5th	6th	7th	8th	9th	10th	

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.