

HS6608CA06

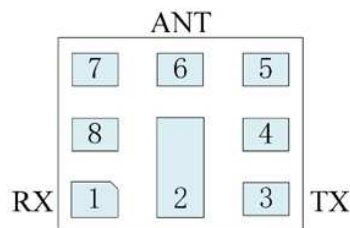
Band 08 Duplexer (880 - 915 / 925 - 960 MHz)



Description

HS6608CA06 is a high performance duplexer designed with Surface Acoustic Wave (SAW) technology for applications in LTE Band 8 (880 – 915 MHz UL, 925 – 960 MHz DL).

Functional Block Diagram

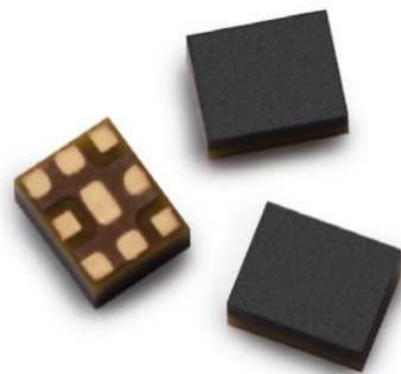


Pin Connections

Pin No.	Function
1	RX
3	TX
6	ANT
2, 4, 5, 7, 8	Ground

Features

- Single-ended 50Ω ports
- Package for Surface Mount Technology (SMT)
- Miniature Size :1.8 mm × 1.4 mm × 0.65 mm
- Low insertion loss:
TX band, 880 -915 MHz: 2.0 dB Typ.
RX band, 915 -960 MHz: 1.9 dB Typ.
- High isolation:
TX isolation: 63 dB Typ.
RX isolation: 57 dB Typ.
- Ni, Au-plated terminals
- Excellent ESD protection ability
- Moisture Sensitivity Level 3



Applications

Smart phones, tablets, data terminals and other mobile communication devices operating in the LTE Band 8 frequency range.

Absolute Maximum Ratings

Parameter	Rating
Storage Temperature ¹	-40°C to 85°C
Operable Temperature ²	-20°C to 85°C
Input Power ³	29dBm

Notes:

1. Operation of this device outside the parameter ranges given may cause permanent damage.
2. Specifications are not guaranteed over all operable conditions.
3. RF Input Power applied for a minimum of 5,000 hrs at 55 °C in the frequency

Electrical Specifications^a, Z₀ = 50Ω, T_c^b is indicated.

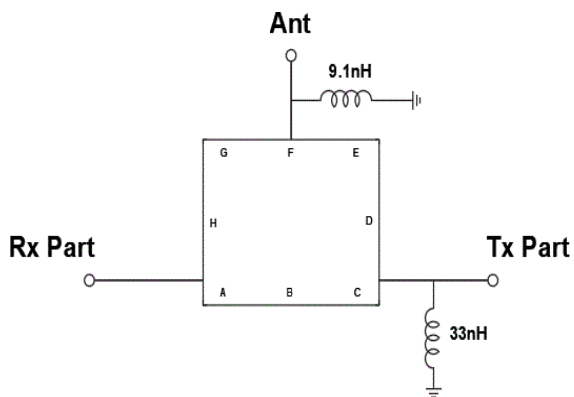
Parameter (Tx to Ant)	Frequency (MHz)	Temp, T _c (°C)	Unit	Min	Typ ^c	Max
Insertion loss	880.48 - 914.52	-20 to +85	dB		2.0	3.4
	882.4 - 912.6	-20 to +85	dB		1.7	2.5
Amplitude ripple	880 - 915	-20 to +85	dB		1.4	2.9
VSWR of Ant Port	880 - 915	-20 to +85	dB		1.6	2.2
VSWR of Tx Port	880 - 915	-20 to +85	dB		1.6	2.2
Attenuation	10.0 ~ 716.0	-20 to +85	dB	30	35	
	716.0 ~ 728.0	-20 to +85	dB	30	35	
	728.0 ~ 793.0	-20 to +85	dB	30	35	
	832.0 ~ 862.0	-20 to +85	dB	30	41	
	927.4 ~ 957.6	-20 to +85	dB	48	54	
	1559.0 ~ 1563.0	-20 to +85	dB	35	42	
	1565.42 ~ 1573.37	-20 to +85	dB	35	42	
	1573.37 ~ 1577.47	-20 to +85	dB	35	42	
	1577.47 ~ 1585.42	-20 to +85	dB	35	43	
	1597.55 ~ 1605.89	-20 to +85	dB	35	43	
	1710.0 ~ 1785.0	-20 to +85	dB	35	46	
	1760.0 ~ 1840.0	-20 to +85	dB	40	47	
	1840.0 ~ 1880.0	-20 to +85	dB	40	48	
	1920.0 ~ 1980.0	-20 to +85	dB	35	46	
	2110.0 ~ 2170.0	-20 to +85	dB	35	42	
	2400.0 ~ 2500.0	-20 to +85	dB	30	37	
	2434.0 ~ 2494.0	-20 to +85	dB	30	37	
	2620.0 ~ 2745.0	-20 to +85	dB	28	35	
	3520.0 ~ 3660.0	-20 to +85	dB	20	29	
	4400.0 ~ 4575.0	-20 to +85	dB	15	27	
4900.0 ~ 5950.0	-20 to +85	dB	15	25		
6160.0 ~ 6405.0	-20 to +85	dB	15	27		
7040.0 ~ 7320.0	-20 to +85	dB	5	12		

Parameter (Ant to Rx)	Frequency (MHz)	Temp, T _c (°C)	Units	Min	Typ ^c	Max
Insertion loss	925.48 - 959.52	-20 to +85	dB		1.9	3.1
	927.4 -957.6	-20 to +85	dB		1.9	2.5
Amplitude ripple	925.0 -960.0	-20 to +85	dB		0.9	2.3
VSWR of Ant Port	925.0 - 960.0	-20 to +85	dB		1.9	2.3
VSWR of Rx Port	925.0 -960.0	-20 to +85	dB		1.9	2.2
Attenuation	0.3 ~ 880.0	-20 to +85	dB	50	63	
	45.0	-20 to +85	dB	50	108	
	835.0 ~ 870.0	-20 to +85	dB	50	62	
	882.4 ~ 912.6	-20 to +85	dB	50	57	
	902.5 ~ 910.0	-20 to +85	dB	47	57	
	980.0 ~ 1045.0	-20 to +85	dB	20	30	
	1045.0 ~ 6000.0	-20 to +85	dB	25	44	
	1427.0 ~ 1448.0	-20 to +85	dB	45	62	
	1710.0 ~ 1785.0	-20 to +85	dB	40	56	
	1805.0 ~ 1980.0	-20 to +85	dB	40	54	
	2400.0 ~ 2500.0	-20 to +85	dB	40	50	
	2500.0 ~ 2570.0	-20 to +85	dB	40	50	
	2685.0 ~ 2790.0	-20 to +85	dB	40	49	
	2775.0 ~ 2880.0	-20 to +85	dB	40	49	
	2880.0 ~ 3700.0	-20 to +85	dB	35	47	
	3700.0 ~ 3840.0	-20 to +85	dB	35	47	
	4625.0 ~ 4800.0	-20 to +85	dB	30	46	
4900.0 ~ 5950.0	-20 to +85	dB	30	44		
6475.0 ~ 6720.0	-20 to +85	dB	30	49		
7400.0 ~ 7680.0	-20 to +85	dB	30	47		

Parameter (Tx to Rx)	Frequency (MHz)	Temp, T _c (°C)	Units	Min	Typ ^c	Max
Isolation ^d	882.4 - 912.6	-20 to +85	dB	55	63	
	927.4 - 957.6	-20 to +85	dB	50	57	

- a. Min/Max specifications are guaranteed at the indicated temperature (unless otherwise noted).
- b. T_c is the case temperature and is defined as the temperature of the underside of the device where it contacts the circuit board.
- c. Unless otherwise noted, Typical data is the average value (arithmetic mean) of the parameter over the indicated band at 25°C.
- d. dB_{INT} is Integration over the indicated channel.

Testing Environment

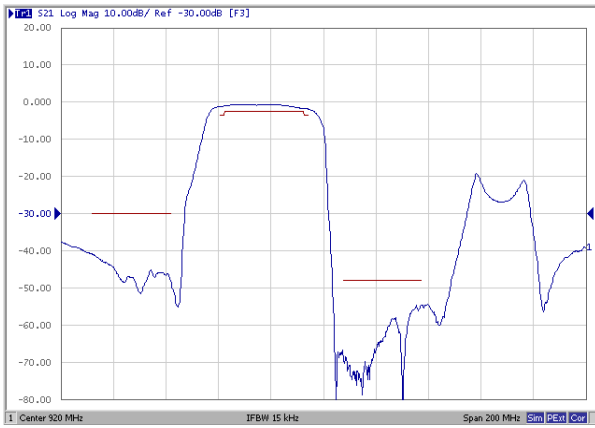


Notes:

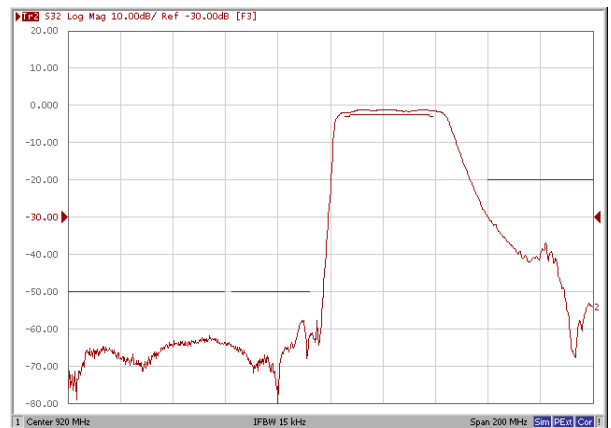
1. Matching component values shown are for the specified HunterSun evaluation board. Value adjustment may be required in end user product circuits depending on component manufacturer and PCB material.

Typical Performance at Tc = 25°C

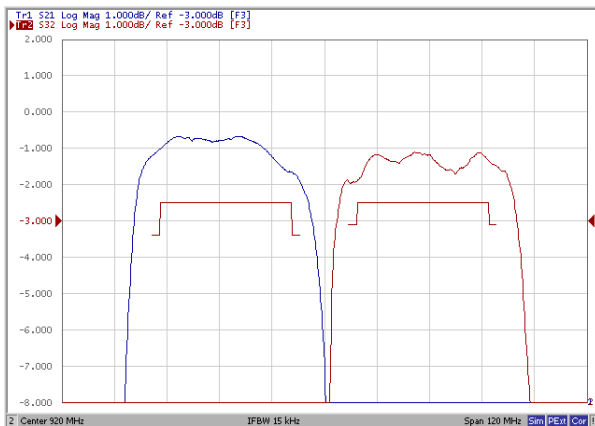
TX to ANT



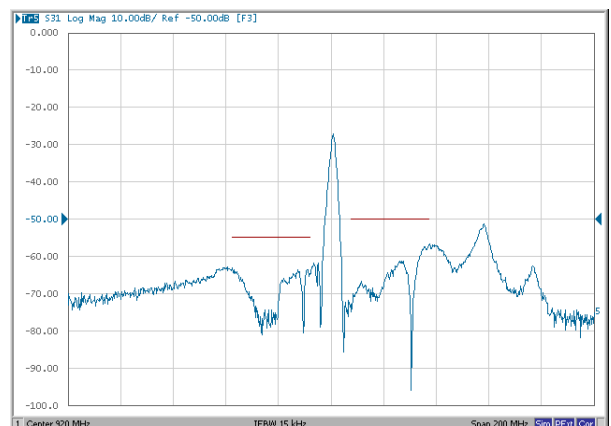
ANT to RX



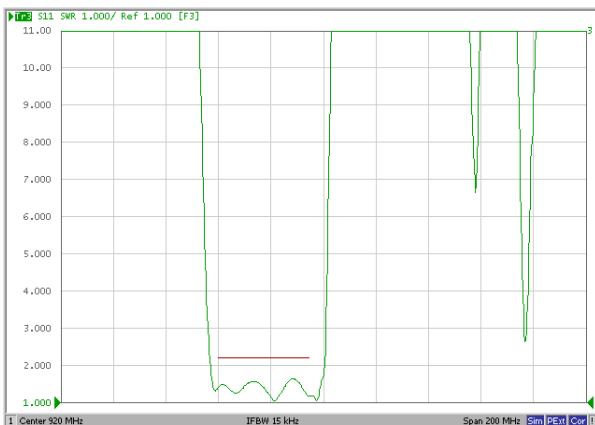
Ripple Deviation



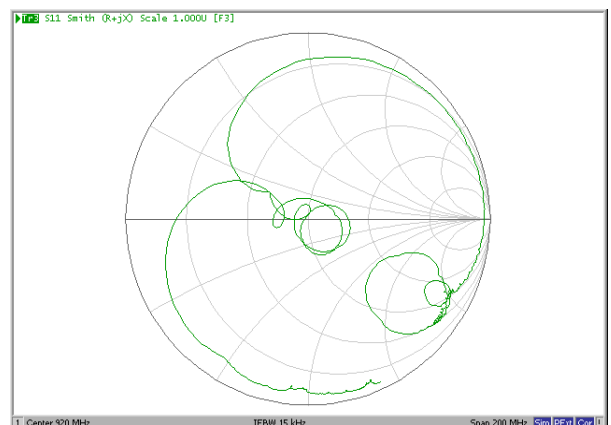
Isolation



VSWR (TX Port)

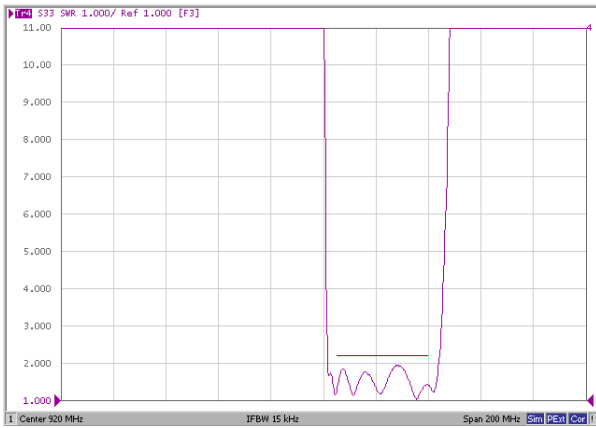


Smith Chart (TX Port)

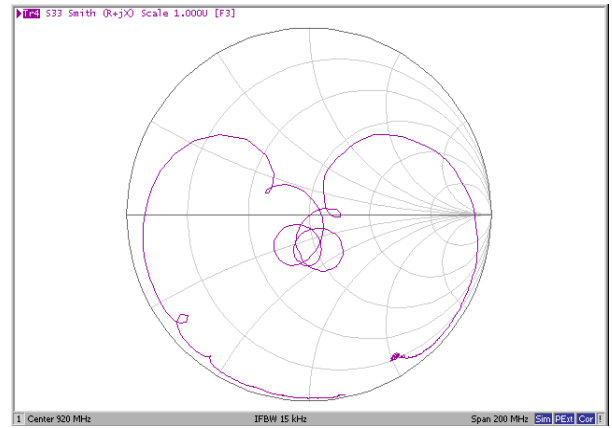


Typical Performance at Tc = 25°C

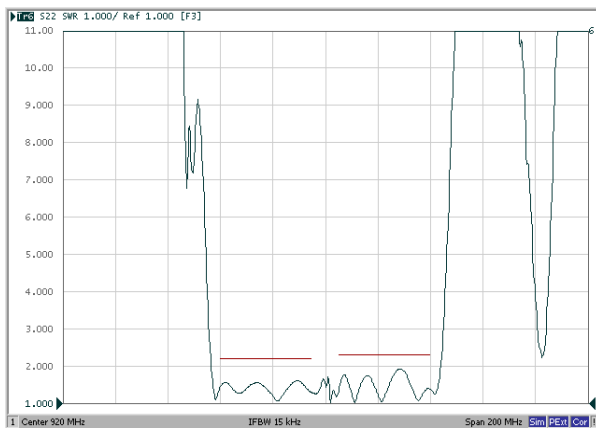
VSWR (RX Port)



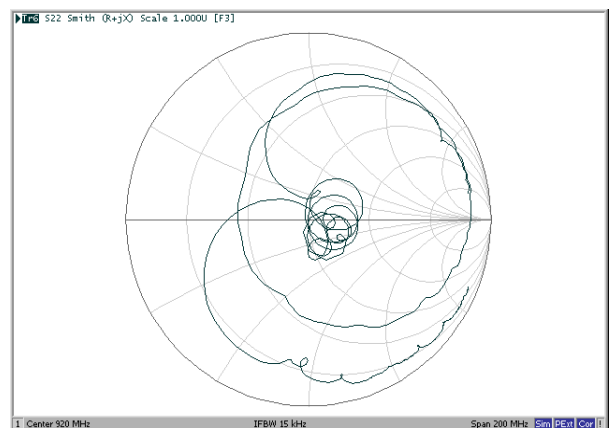
Smith Chart (RX Port)



VSWR (ANT Port)



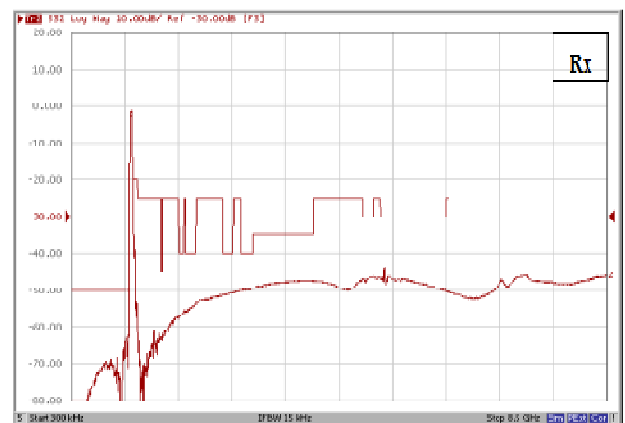
Smith Chart (ANT Port)



Wide Span (TX Port)

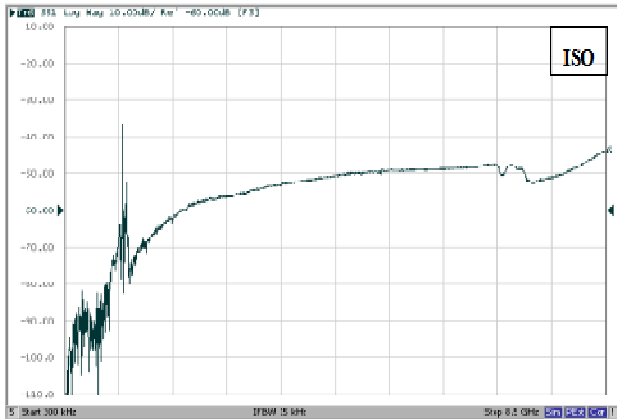


Wide Span (RX Port)

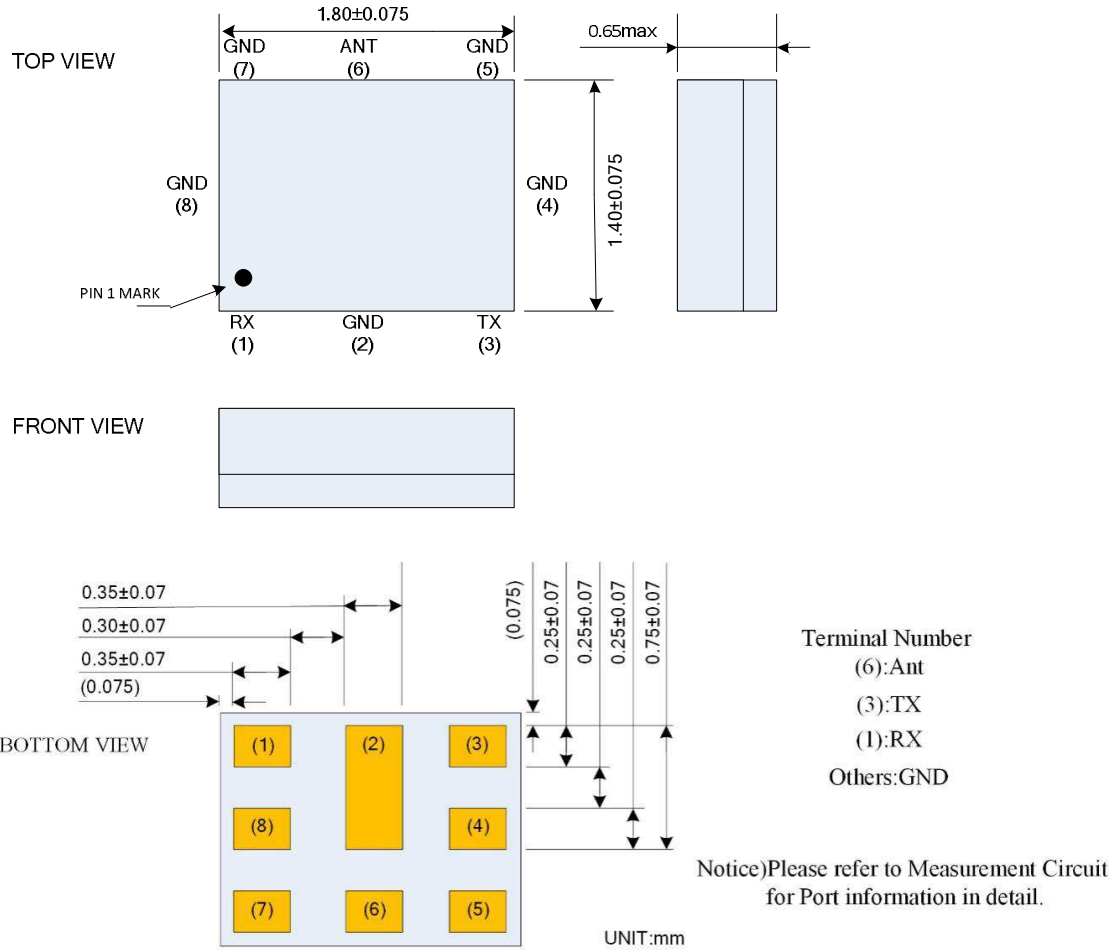


Typical Performance at Tc = 25°C

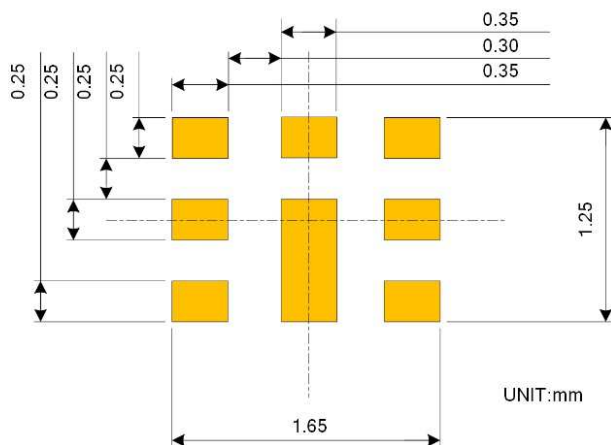
Wide Span (Isolation)



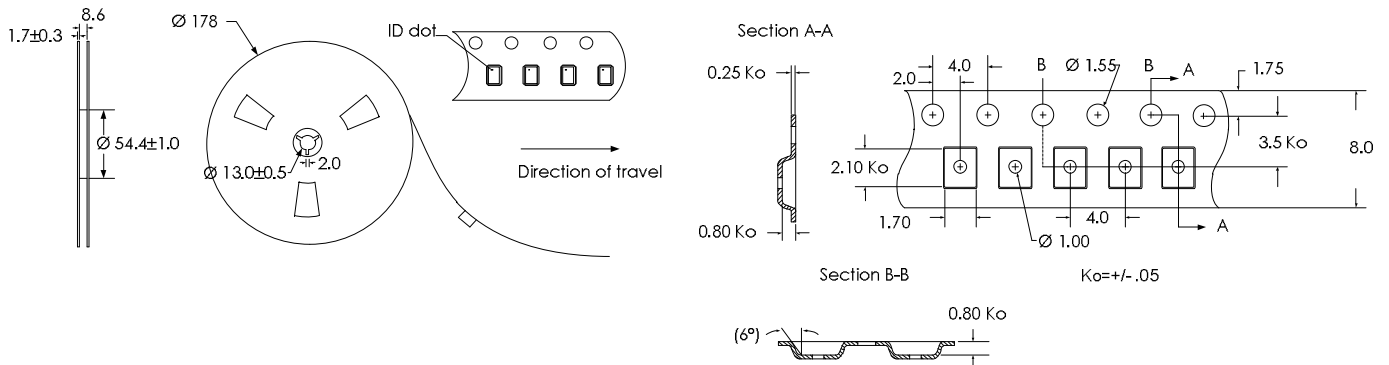
Package Outline Drawing



PCB Mounting Pattern

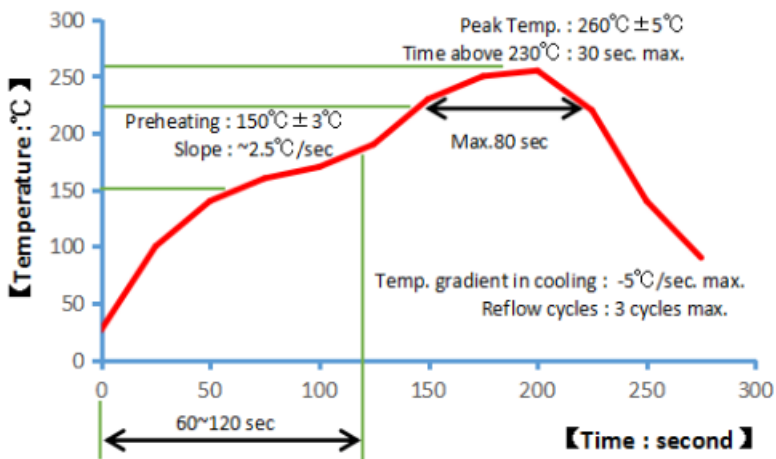


Tape and Reel information



Standard T/R size=3,000 units/reel. All dimensions are in millimeters.

Recommended IR Reflow Profile



Handling Precaution

Parameter	Rating	Standard
ESD – Human Body Model (HBM)	TBD	JEDEC Standard JESD22-A114
ESD – Charged Device Model (CDM)	TBD	JEDEC Standard JESD22-C101
MSL – Moisture Sensitivity Level	Level 3	



Caution!
ESD Sensitive Device

Solderability

Compatible with the latest version of J-STD-020, lead free solder, 260°C

RoHS Compliance

This part is compliant with the 2011/65/EU RoHS directive (Restrictions on the Use of Certain Hazardous Substances in Electrical and Electronic Equipment), as amended by Directive 2015/863/EU.

- Lead free
- Halogen Free (Chlorine, Bromine)
- Antimony Free
- TBBP-A (C₁₅H₁₂Br₄O₂) Free
- PFOS Free
- SVHC Free



Revision History

Revision	Date	Description
A	20200317	Initial Document

Contact Information

For the latest specifications, additional product information, worldwide sales and distribution locations:

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