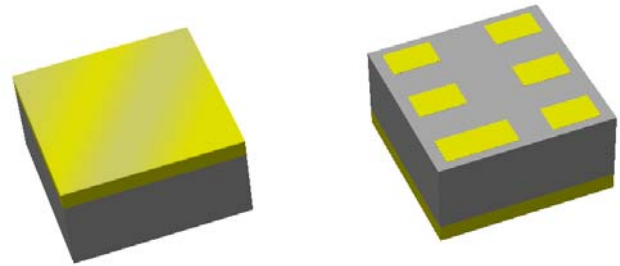


Data Sheet

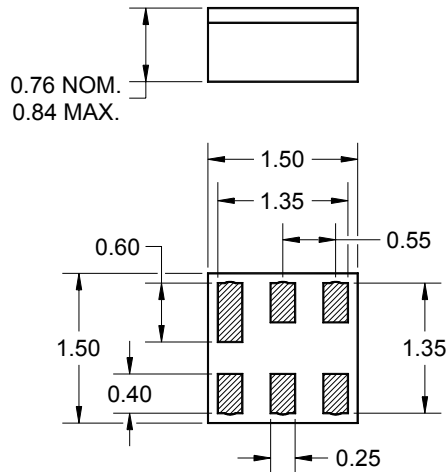
Features

- For DCS applications
- Usable bandwidth of 75 MHz
- Compatible with leading chipset suppliers
- Ultra low loss
- Single-ended input, 50Ω
- Balanced output, 200Ω
- Chip Scale Package (CSP)
- Hermetic



Package

Surface Mount 1.50 x 1.50 x 0.76 mm

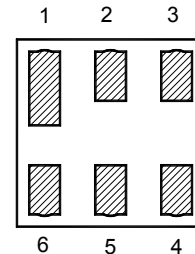


Dimensions shown are nominal in millimeters
 All tolerances are $\pm 0.10\text{mm}$

Body: Al_2O_3 ceramic
 Lid: Kovar or Alloy 42, Au over Ni plated
 Terminations: Au plating 0.5 - 1.0 μm ,
 over a 2 - 6 μm Ni plating

Pin Configuration

Bottom View



Pin No.	Description
2	Input
6,4	Output
1,3,5	Case ground

Data Sheet

Electrical Specifications ⁽¹⁾

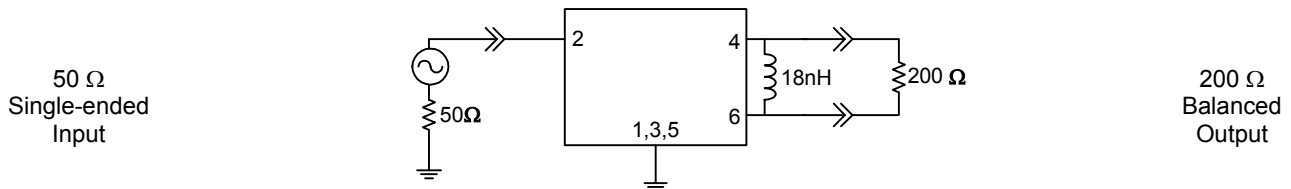
Operating Temperature Range: ⁽²⁾ +25 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss 1805 - 1880 MHz	-	1.5	2.0	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	9	12	-	dB
1920 - 1980 MHz	15	18	-	dB
1980 - 3000 MHz	20	26	-	dB
3000 - 5415 MHz	20	42	-	dB
5415 - 5640 MHz	41	45	-	dB
5640 - 6000 MHz	38	42	-	dB
Output Amplitude Balance (S₃₁/S₂₁) 1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [Φ(S₃₁)-ΦS₂₁+180] 1805 - 1880 MHz	-10	2	10	degree
Input/Output VSWR 1805 - 1880 MHz	-	2.0	2.5	
Source Impedance ⁽⁴⁾	-	50	-	Ω
Load Impedance (Balanced) ⁽⁴⁾	-	200 18nH	-	Ω

Notes:

1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

Test Circuit:



Data Sheet

Electrical Specifications ⁽¹⁾

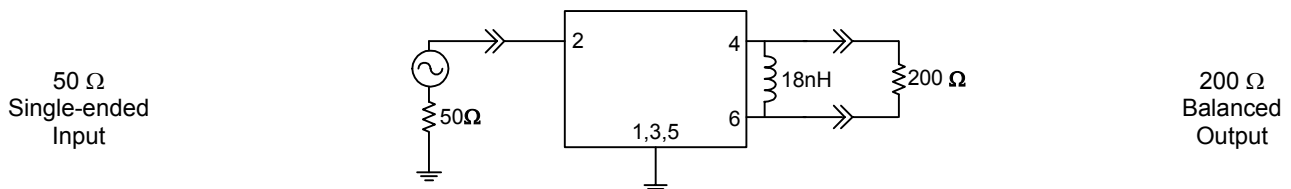
Operating Temperature Range: ⁽²⁾ -20 to +75 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss 1805 - 1880 MHz	-	1.5	2.3	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	6	12	-	dB
1920 - 1980 MHz	15	18	-	dB
1980 - 3000 MHz	20	26	-	dB
3000 - 5415 MHz	20	42	-	dB
5415 - 5640 MHz	41	45	-	dB
5640 - 6000 MHz	38	42	-	dB
Output Amplitude Balance (S₃₁/S₂₁) 1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [Φ(S₃₁)-ΦS₂₁+180] 1805 - 1880 MHz	-10	2	10	degree
Input/Output VSWR 1805 - 1880 MHz	-	2.0	2.6	
Source Impedance ⁽⁴⁾	-	50	-	Ω
Load Impedance (Balanced) ⁽⁴⁾	-	200 18nH	-	Ω

Notes:

1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

Test Circuit:



Data Sheet

Electrical Specifications ⁽¹⁾

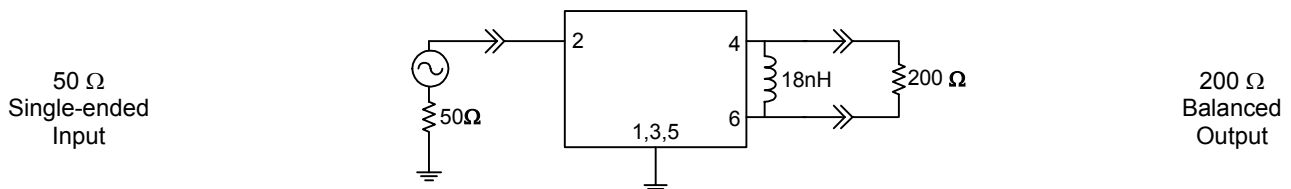
Operating Temperature Range: ⁽²⁾ -25 to +80 °C

Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Center Frequency	-	1842.5	-	MHz
Maximum Insertion Loss 1805 - 1880 MHz	-	1.5	2.4	dB
Absolute Attenuation				
100 - 1200 MHz	25	38	-	dB
1200 - 1705 MHz	25	33	-	dB
1705 - 1764 MHz	20	25	-	dB
1764 - 1785 MHz	6	12	-	dB
1920 - 1980 MHz	15	18	-	dB
1980 - 3000 MHz	20	26	-	dB
3000 - 5415 MHz	20	42	-	dB
5415 - 5640 MHz	41	45	-	dB
5640 - 6000 MHz	38	42	-	dB
Output Amplitude Balance (S₃₁/S₂₁) 1805 - 1880 MHz	-1.5	1.3	1.5	dB
Output Phase Balance [Φ(S₃₁)-ΦS₂₁+180] 1805 - 1880 MHz	-10	2	10	degree
Input/Output VSWR 1805 - 1880 MHz	-	2.0	2.8	
Source Impedance ⁽⁴⁾	-	50	-	Ω
Load Impedance (Balanced) ⁽⁴⁾	-	200 18nH	-	Ω

Notes:

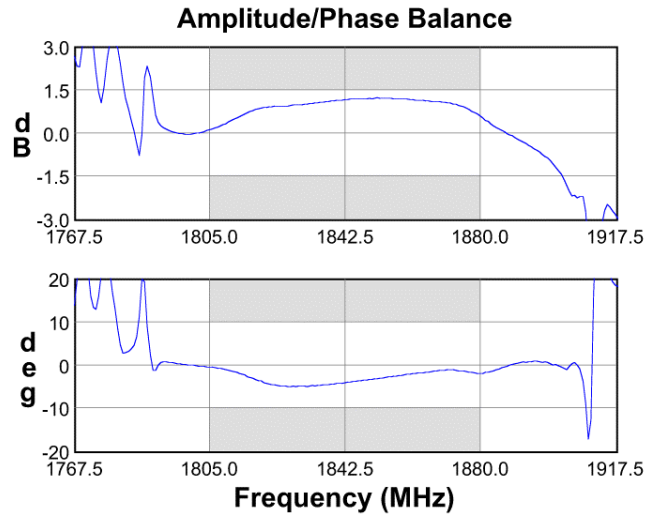
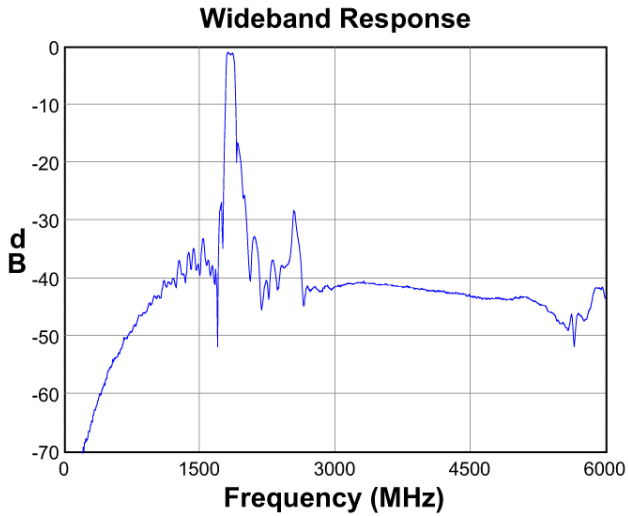
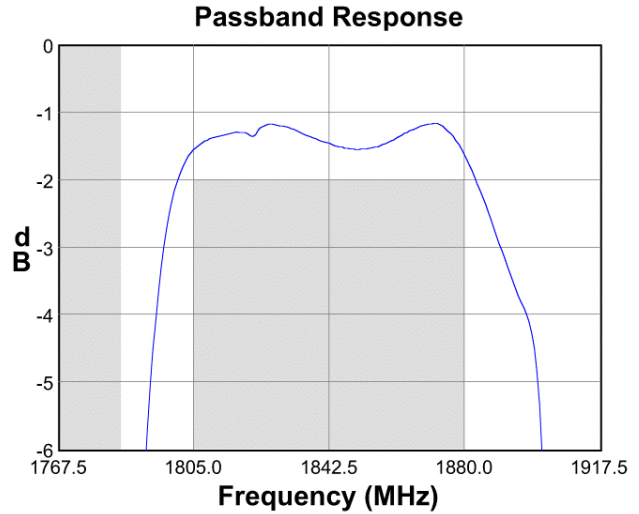
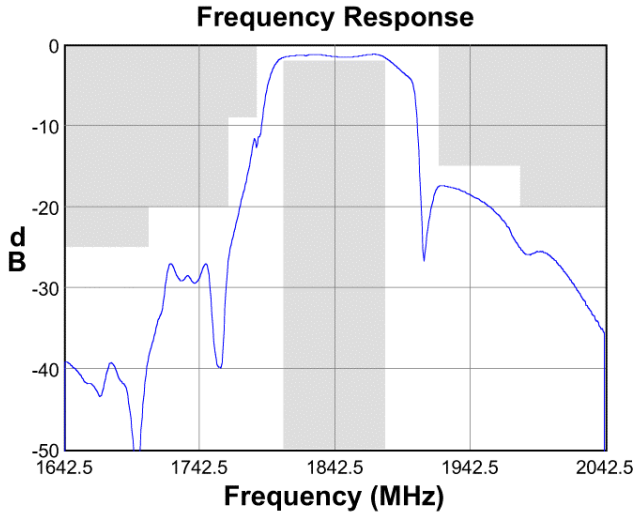
1. All specifications are based on the test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

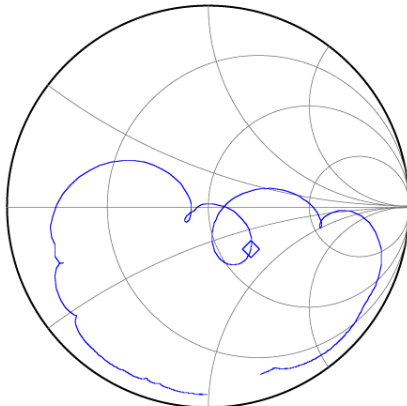


Data Sheet

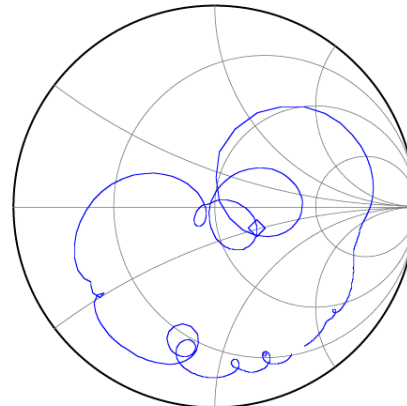
Typical Performance (at +25°C)



Input Smith Chart

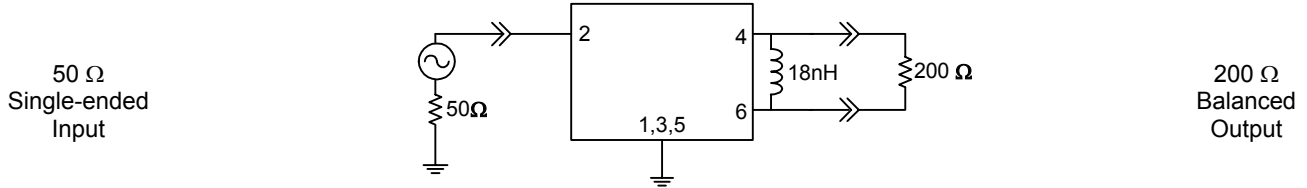


Output Smith Chart

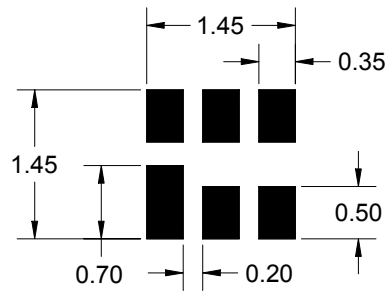
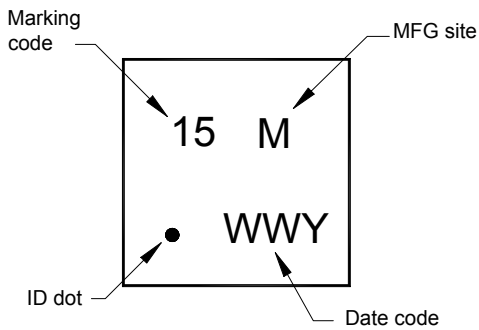


Data Sheet

Matching Schematics



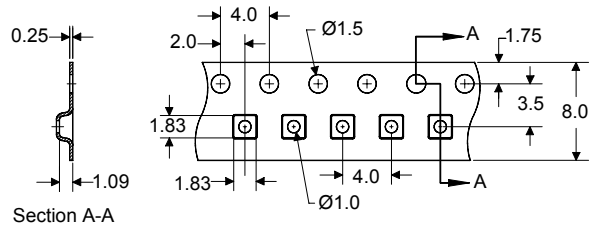
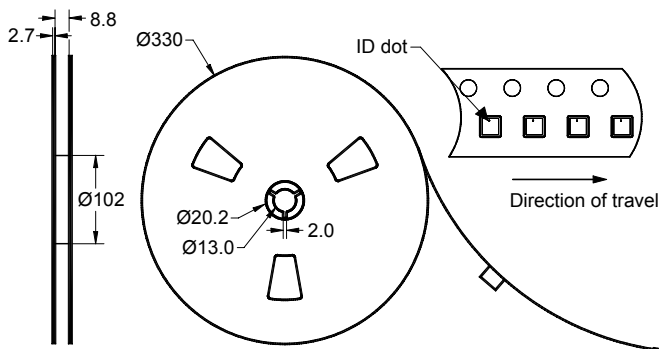
Marking PCB Footprint



The date code consists of: WW = 2 digit week, Y = last digit of year, M = manufacturing site code

This footprint represents a recommendation only
Dimensions shown are nominal in millimeters

Tape and Reel




Dimensions shown are nominal in millimeters
Packaging quantity: 10000 units/reel

Data Sheet

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-25	+80	°C
Storage Temperature Range	T _{stg}	-40	+85	°C

Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

Material Content

- Does not contain lead (Pb) or other RoHS restricted materials

Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[Other Technical Information](#)

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 Network of [sales offices](#),
[Representatives or distributors](#)