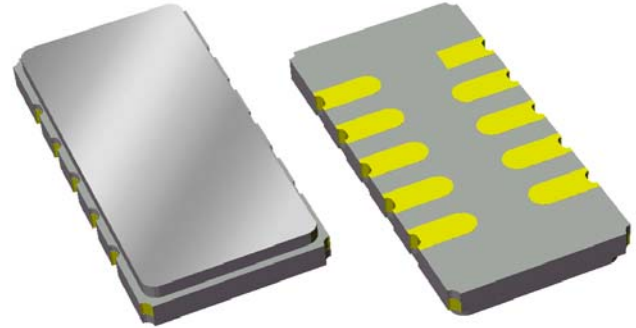


Preliminary Data Sheet

Features

- For GSM/EDGE applications
- Usable bandwidth of 0.2 MHz
- Low loss
- High attenuation
- Single ended operation, 50Ω
- Ceramic Surface Mount Package (SMP)
- Hermetic

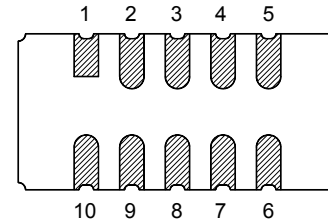
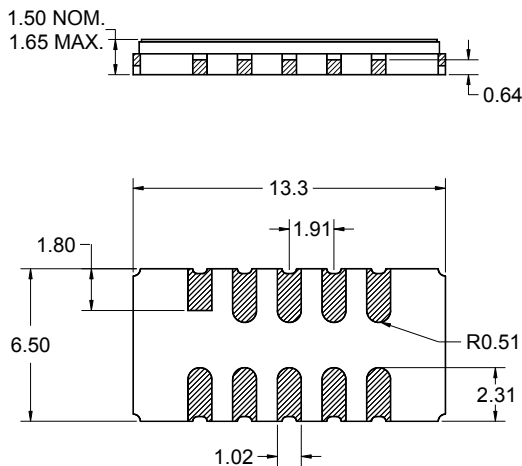


Package

Surface Mount 13.3 x 6.50 x 1.50 mm

Pin Configuration

Bottom View



Pin No.	Description
10	Input
5	Output
1,6	Ground
2,3,4,7,8,9	Case Ground

Dimensions shown are nominal in millimeters
 All tolerances are $\pm 0.15\text{mm}$ except overall
 length and width $\pm 0.10\text{mm}$

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

Preliminary Data Sheet

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ 0 to +70 °C

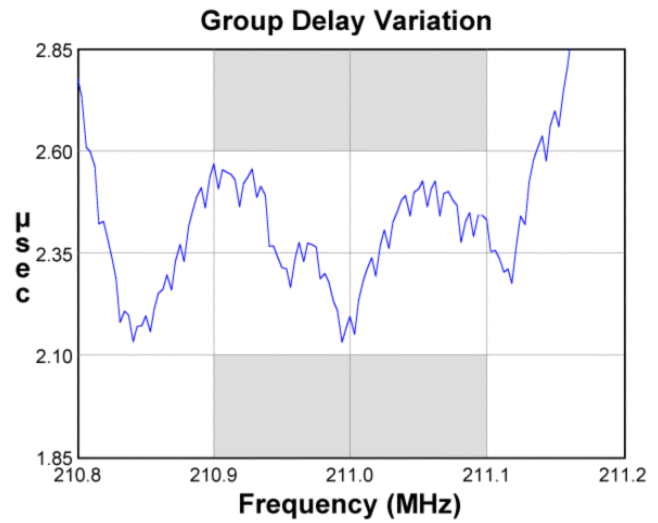
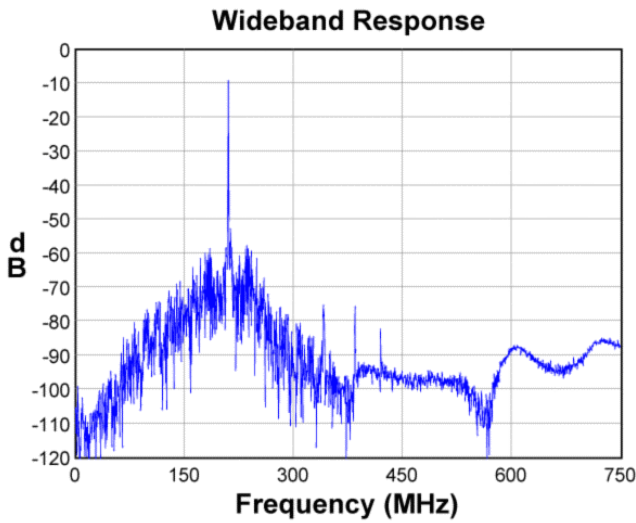
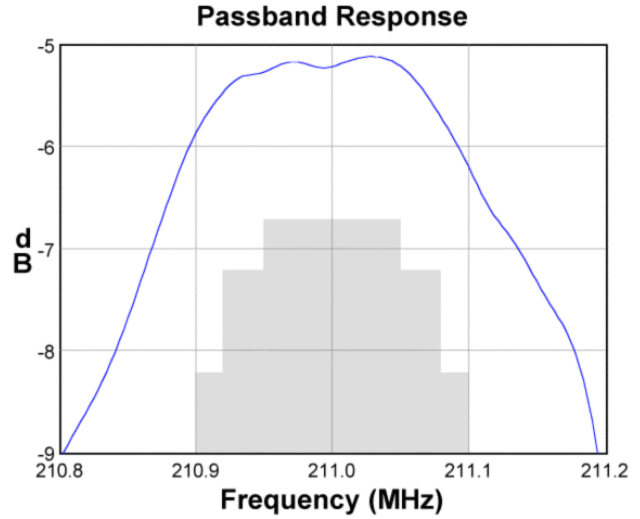
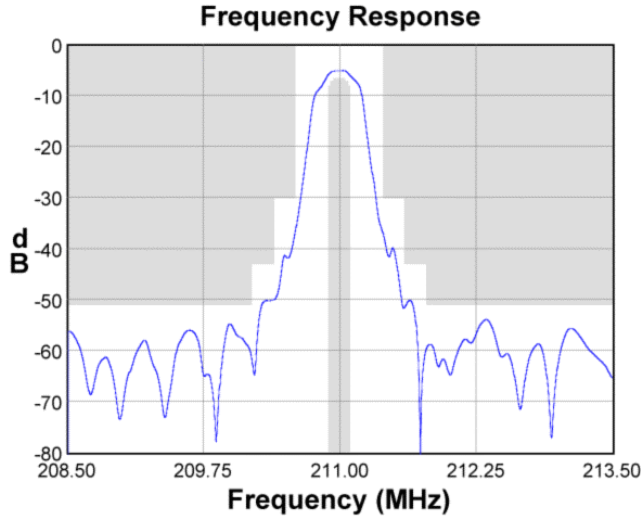
Parameter ⁽³⁾	Minimum	Typical	Maximum	Unit
Insertion Loss at 211 MHz (fc)	-	5.2	6.5	dB
Center Frequency at 3dB				
At 25 °C	210.975	211	211.025	MHz
0 to 70 °C	210.969	211	211.031	MHz
Lower 1.5 dB Bandedge ⁽⁴⁾	-	210.88	210.95	MHz
Upper 1.5 dB Bandedge	211.05	211.12	-	MHz
Lower 2.0 dB Bandedge	-	210.86	210.92	MHz
Upper 2.0 dB Bandedge	211.08	211.14	-	MHz
Lower 3.0 dB Bandedge	-	210.83	210.90	MHz
Upper 3.0 dB Bandedge	211.10	211.17	-	MHz
Relative Attenuation ⁽⁴⁾				
fc - 20 MHz to fc - 0.8 MHz	46	50	-	dB
fc - 0.8 MHz to fc - 0.6 MHz	38	45	-	dB
fc - 0.6 MHz to fc - 0.4 MHz	25	30	-	dB
fc + 0.4 MHz to fc + 0.6 MHz	25	33	-	dB
fc + 0.6 MHz to fc + 0.8 MHz	38	44	-	dB
fc + 0.8 MHz to fc + 2.85 MHz	46	49	-	dB
fc + 2.85 MHz to fc + 3.10 MHz	44	48	-	dB
fc + 3.10 MHz to fc + 20.0 MHz	46	49	-	dB
Absolute Group Delay				
210.9 - 211.1 MHz	-	2.4	5	μs
Group Delay Variation				
210.9 - 211.1 MHz	-	370	500	ns
EVM ⁽⁵⁾	-	2	-	%
Input/Output Return Loss				
fc ± 0.05 MHz	10	15	-	dB
fc ± 0.1 MHz	8	10	-	dB
Out-of-Band Modulation ⁽⁵⁾				
Input signals + 10 dBm @ 209.4 & 210.2 MHz	-	-65	-60	dBm
Input signals + 10 dBm @ 211.8 & 212.6 MHz	-	-65	-60	dBm
Source Impedance ⁽⁶⁾	-	50	-	Ω
Load Impedance ⁽⁶⁾	-	50	-	Ω

Notes:

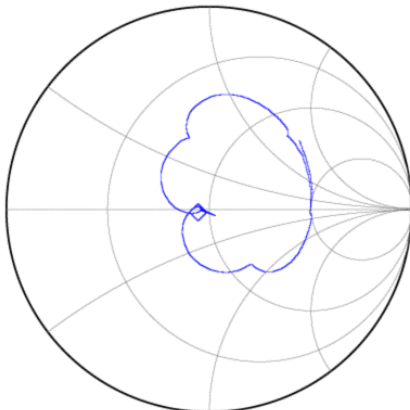
1. All specifications are based on the test circuit shown on page 4
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature. The guardbanded specification includes the 3 dB center frequency correlation factor between customer board and Sawtek test fixture
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. All bandedge and relative attenuation measurements are referenced to the minimum insertion loss
5. EVM and out-of-band modulation will not be tested in production due to the complexity of test. Compliance guaranteed by design
6. This is the optimum impedance in order to achieve the performance shown

Preliminary Data Sheet

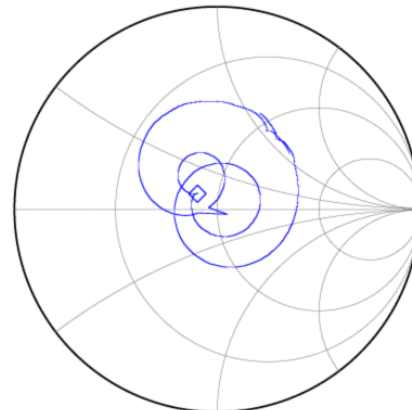
Typical Performance (at +25°C)



Input Smith Chart

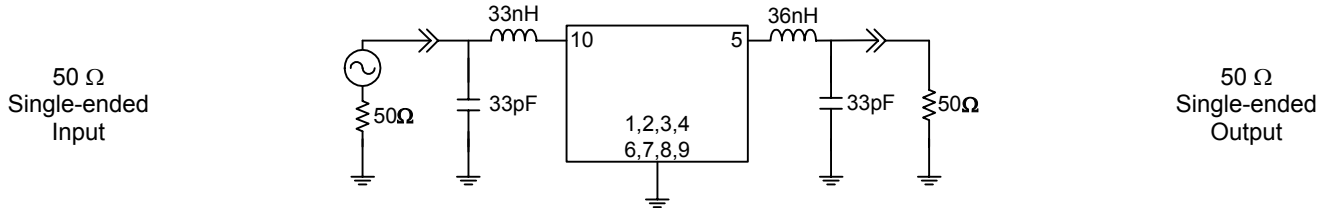


Output Smith Chart



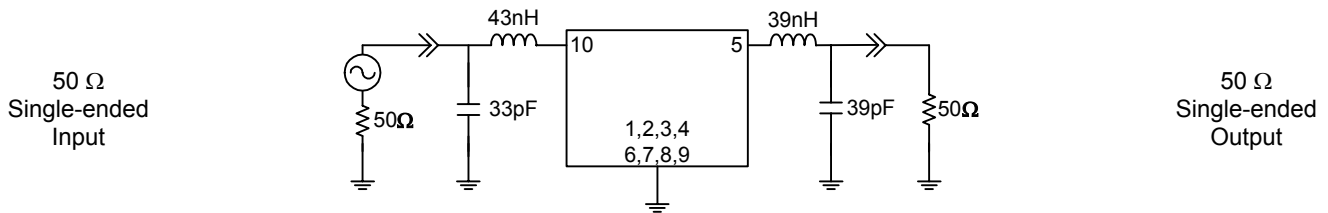
Preliminary Data Sheet

Test Circuit

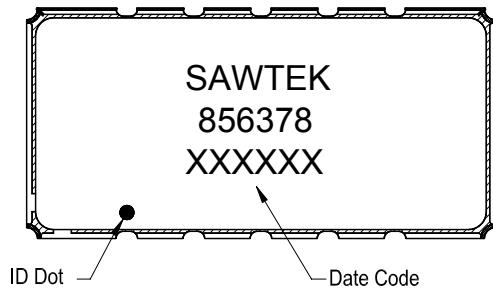


Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

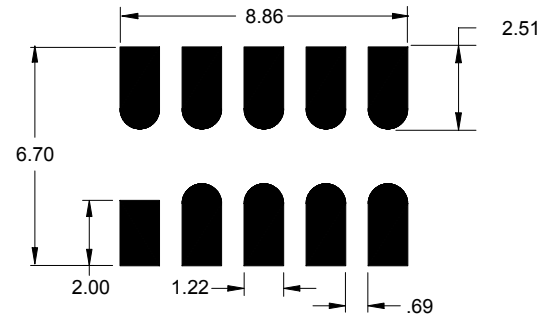


Marking



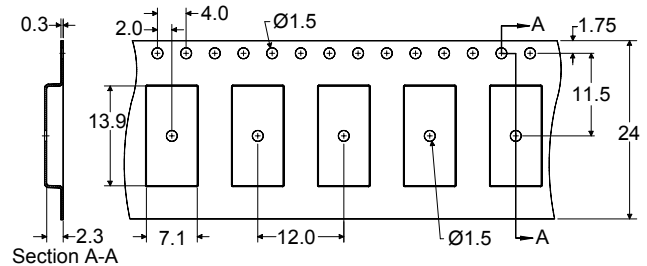
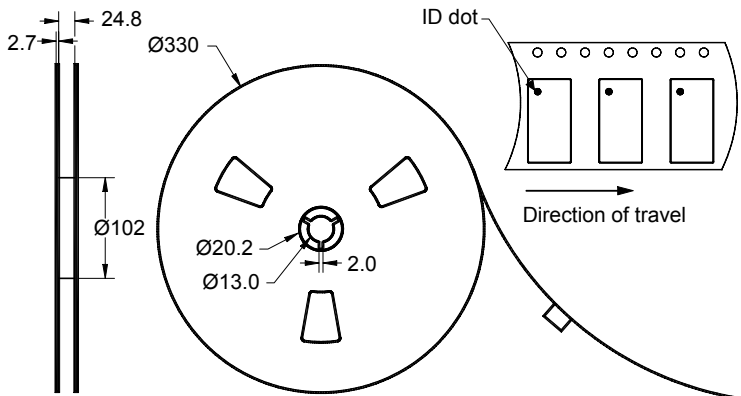
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

PCB Footprint



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

Tape and Reel




Dimensions shown are nominal in millimeters
Packaging quantity: 2000 units/reel

Preliminary Data Sheet

Maximum Ratings

Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	0	+70	°C
Storage Temperature Range	T _{stg}	-40	+85	°C
RF Power	P _{in}	-	+14.5	dBm

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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Contact Information



PO Box 609501
 Orlando, FL 32860-9501
 USA

Phone: +1 (407) 886-8860
 Fax: +1 (407) 886-7061
 Email: custservice@sawtek.com
 Web: www.sawtek.com

Or contact one of our worldwide
 Network of [sales offices](#),
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