
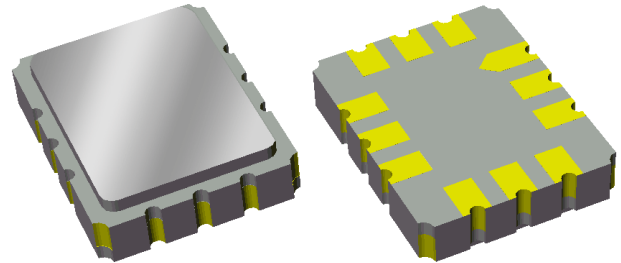


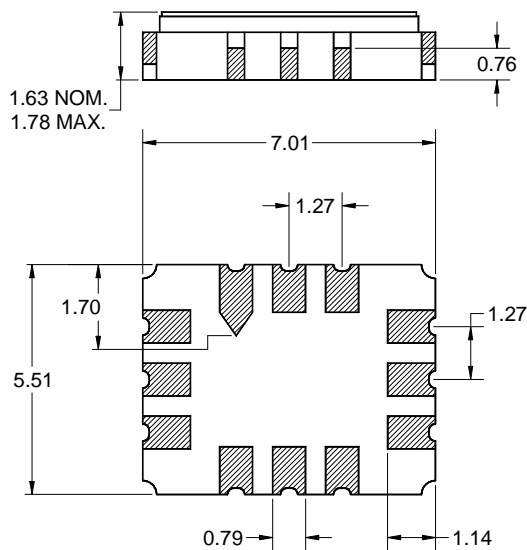
Features

- For BTS Power Amplifier applications
- Usable bandwidth of 100 MHz
- Absolute delay of 450ns
- Low group delay variation
- Ceramic Surface Mount Package (SMP)
- Hermetic
- RoHS compliant (2002/95/EC), Pb-free 



Package

Surface Mount 7.01 x 5.51 x 1.63 mm
SMP-28B

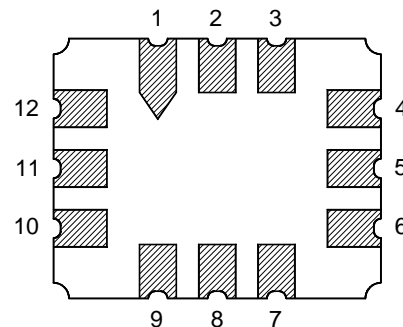


Dimensions shown are nominal in millimeters
All tolerances are ± 0.15 mm except overall
length and width ± 0.13 mm

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

Pin Configuration

Bottom View



Balanced – SE Configuration

Pin No.	Description
10,12	Balanced inputs
4	Output
1,2,3,5,6	Case Ground
7,8,9,11	Case Ground

Electrical Specifications ⁽¹⁾

Operating Temperature Range: ⁽²⁾ -35 to +85 °C

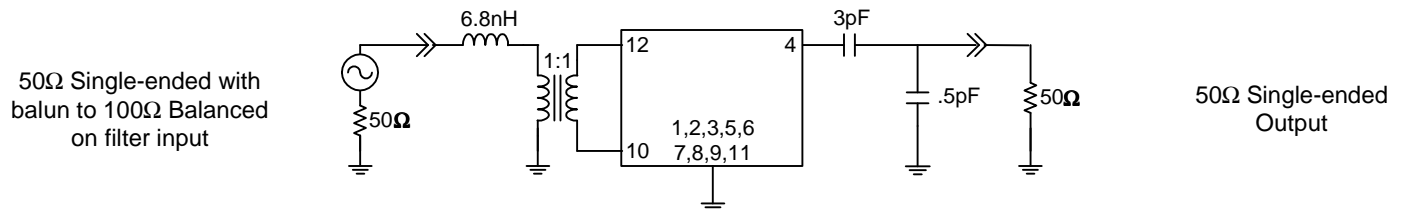
Parameter ⁽³⁾	Minimum	Typical ⁽⁴⁾	Maximum	Unit
Center Frequency	-	2140	-	MHz
Minimum Insertion Loss				
+25 °C	-	25	26.2	dB
-35 to +85 °C	-	27	29	dB
Lower 1.2 dB Bandedge ⁽⁵⁾	-	2090	2110	MHz
Upper 1.2 dB Bandedge ⁽⁵⁾	2170	2200	-	MHz
Amplitude Variation				
2130 – 2150 MHz	-	0.3	0.8	dB p-p
2110 – 2170 MHz	-	0.6	1.2	dB p-p
Phase Linearity				
2130 – 2150 MHz	-	2.0	7.0	degree
2110 – 2170 MHz	-	3.0	8.0	degree
Average Absolute Delay	445	450	455	nsec
Group Delay Variation	-	15	40	nsec
Input VSWR				
2130 – 2150 MHz	-	2.0	5.0:1	-
Output VSWR				
2130 – 2150 MHz	-	2.5	5.0:1	-
Source Impedance (single-ended) ^(6,7)	-	50	-	Ω
Load Impedance (single-ended) ⁽⁷⁾	-	50	-	Ω

Notes:

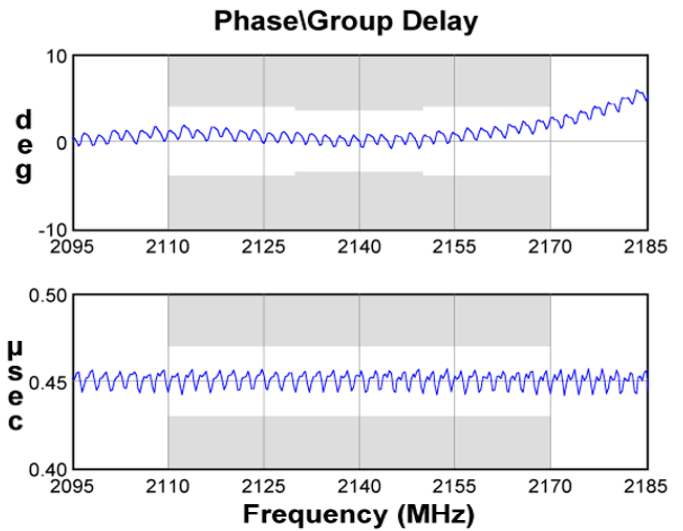
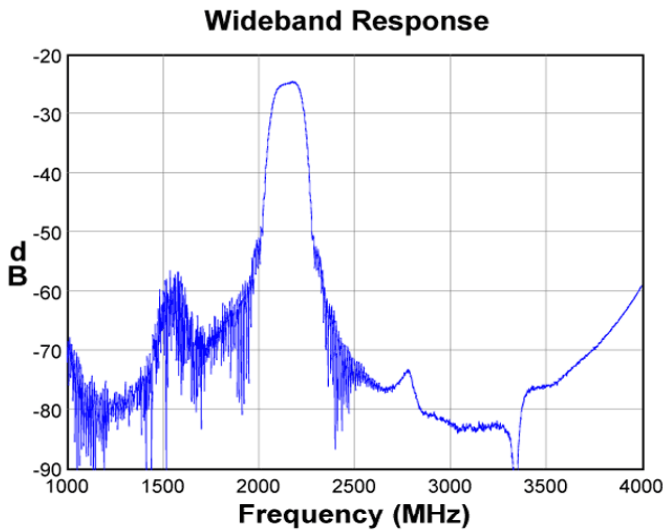
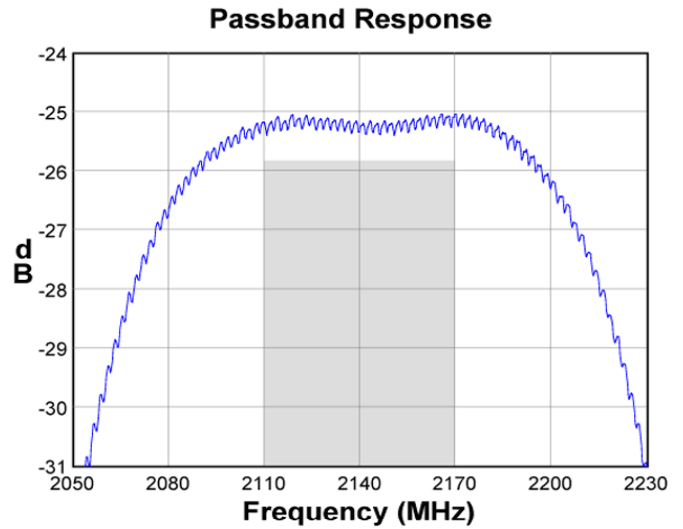
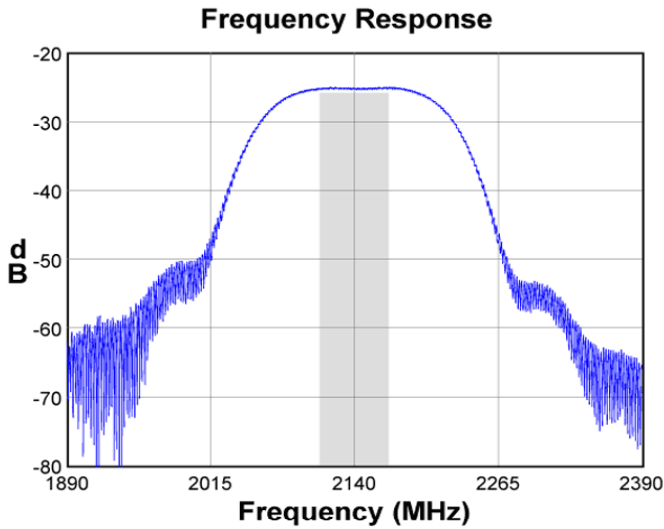
1. All specifications are based on the TriQuint test circuit shown below
2. In production, devices will be tested at room temperature to a guardbanded specification to ensure electrical compliance over temperature
3. Electrical margin has been built into the design to account for the variations due to temperature drift and manufacturing tolerances
4. Typical values are based on average measurements at room temperature
5. Relative to minimum insertion loss
6. 50Ω with balun to 100Ω on filter
7. This is the optimum impedance in order to achieve the performance shown

Test Circuit:

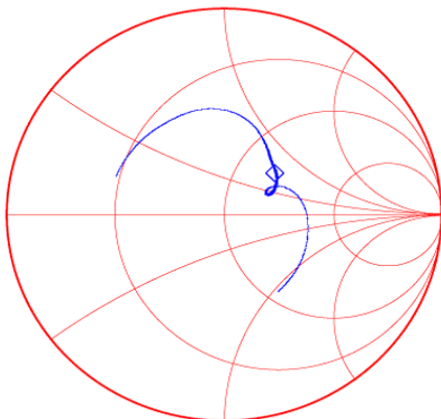
Actual matching values may vary due to PCB layout and parasitics



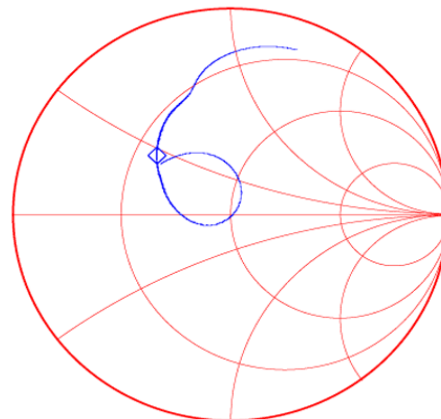
Typical Performance (at room temperature)



Input Smith Chart

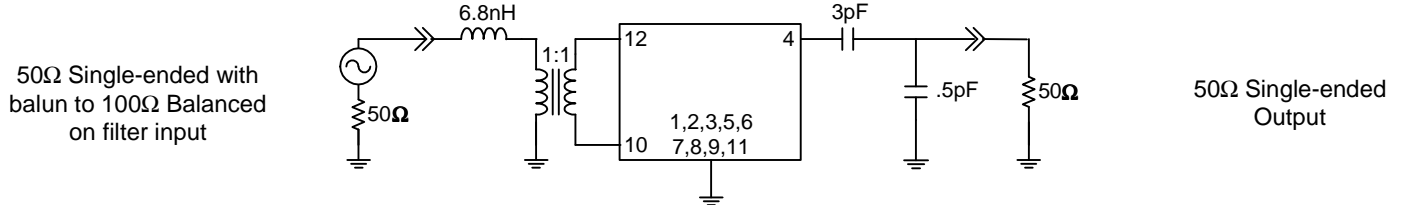


Output Smith Chart

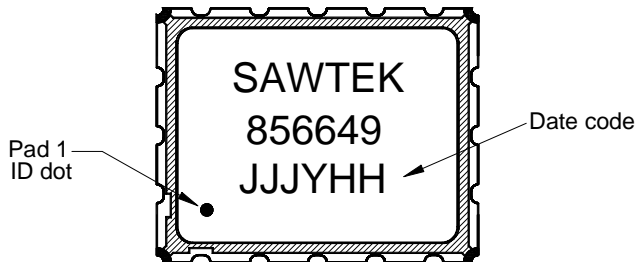


Matching Schematics

Actual matching values may vary due to PCB layout and parasitics

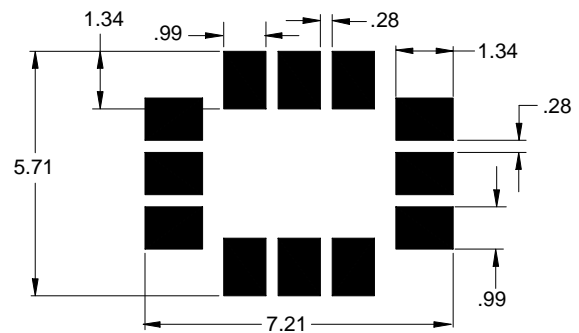


Marking



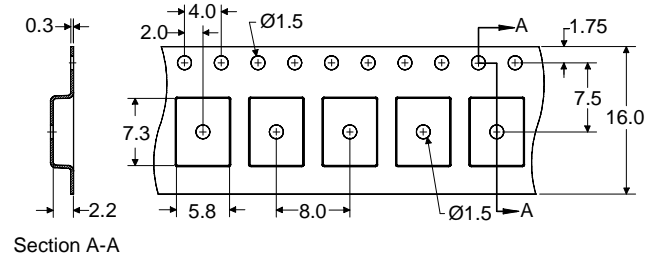
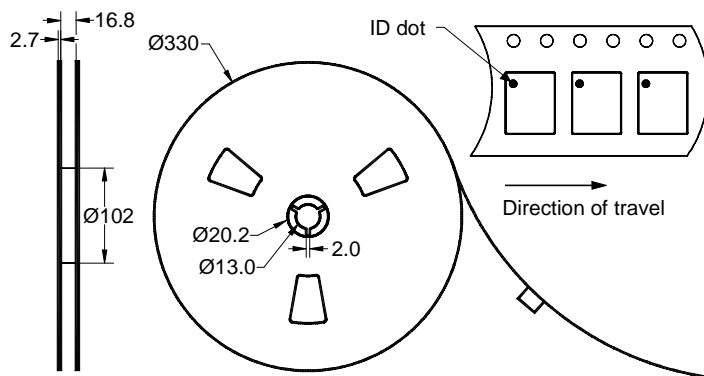
The date code consists of: day of the current year (Julian, 3 digits), last digit of the year (1 digit) and hour (2 digits)

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: 3000 units/reel

Maximum Ratings


Parameter	Symbol	Minimum	Maximum	Unit
Operating Temperature Range	T	-35	+85	°C
Storage Temperature Range	T _{stg}	-40	+85	°C

Important Notes

Warnings

- Electrostatic Sensitive Device (ESD) 
- Avoid ultrasonic exposure

RoHS Compliance

- This product complies with EU directive 2002/95/EC (RoHS) 

Solderability

- Compatible with JESD22-B102, Pb-free process, 260C peak reflow temperature ([see soldering profile](#))

Links to Additional Technical Information

[PCB Layout Tips](#)

[Qualification Flowchart](#)

[Soldering Profile](#)

[S-Parameters](#)

[RoHS Information](#)

[Other Technical Information](#)

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[Representatives or distributors](#)