



RF360
Europe GmbH

SAW Components

SAW Rx filter

LTE Band 26 / LTE&WCDMA Band 5

Series/type:	B8825
Ordering code:	B39871B8825P810
Date:	September 07, 2015
Version:	2.2

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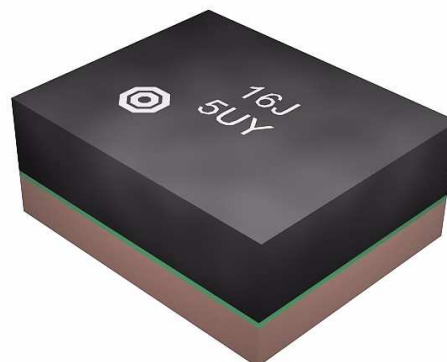
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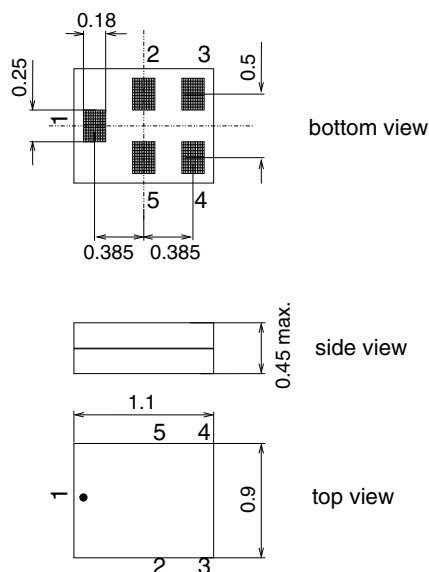
Data sheet

Application

- Low-loss RF filter for mobile telephone
LTE Band 26 / LTE&WCDMA Band 5 system, receive path (Rx)
- Suitable for diversity applications
- Impedance 50 ohm input and output
- Unbalanced to unbalanced operation
- Usable passband 35 MHz


Features

- Package size 1.1 x 0.9 mm²
- Maximum package height 0.45 mm
- RoHS compatible
- Approx. weight 0.001g
- Package for **Surface Mount Technology (SMT)**
- Ni, gold-plated terminals
- **Electrostatic Sensitive Device (ESD)**
- **Moisture Sensitivity Level 3**


Pin configuration

- 1 Input, unbalanced
- 4 Output, unbalanced
- 2,3,5 To be grounded

Data sheet

Characteristics

Temperature range for specification: $T = -30\text{ °C to }+90\text{ °C}$
 Terminating source impedance: $Z_S = 50\ \Omega + 1.5\text{nH}$
 Terminating load impedance: $Z_L = 50\ \Omega + 1.5\text{nH}$

					B8825			
					min.	typ. @ 25°C	max.	
Centre Frequency			f_C B26		—	876.5	—	
			f_C B5		—	881.5	—	
Maximum insertion attenuation								
	859.0 ... 894.0	MHz	α_{max}		—	1.8	3.0	dB
@ $f_{\text{Carrier B26 RX}}$	861.4 ... 891.6	MHz	$\alpha_{\text{WCDMA}}^{1)}$		—	1.8	2.3	dB
	869.0 ... 894.0	MHz	α_{max}		—	1.8	2.8	dB
@ $f_{\text{Carrier B5 RX}}$	871.4 ... 891.6	MHz	$\alpha_{\text{WCDMA}}^{1)}$		—	1.8	2.2	dB
Amplitude ripple (p-p)								
	859.0 ... 894.0	MHz	$\Delta\alpha$		—	0.9	2.0	dB
	869.0 ... 894.0	MHz			—	0.9	1.8	
Error Vector Magnitude 2)								
@ $f_{\text{Carrier B26 RX}}$	861.4 ... 891.6	MHz	EVM		—	2.9	7.0	%
@ $f_{\text{Carrier B5 RX}}$	871.4 ... 891.6	MHz	EVM		—	1.9	5.0	%
Input VSWR								
	859.0 ... 894.0	MHz			—	1.9	2.2	
	869.0 ... 894.0	MHz			—	1.6	2.0	
Output VSWR								
	859.0 ... 894.0	MHz			—	2.0	2.2	
	869.0 ... 894.0	MHz			—	1.6	2.0	
Attenuation								
	10.0 ... 447.0	MHz	α		53	56	—	dB
	814.0 ... 849.0	MHz			46	52	—	dB
@ f_{Carrier}	814.0 ... 846.6	MHz	$\alpha_{\text{WCDMA}}^{1)}$		46	50	—	dB
	849.0 ... 854.0	MHz			2	16	—	dB
	909.0 ... 979.0	MHz			15	22	—	dB
	979.0 ... 6000.0	MHz			26	38	—	dB
	1710.0 ... 1785.0	MHz			42	48	—	dB
	1850.0 ... 1915.0	MHz			40	46	—	dB
	1920.0 ... 1980.0	MHz			40	45	—	dB
	2400.0 ... 2500.0	MHz			37	42	—	dB
	2577.0 ... 2682.0	MHz			36	40	—	dB
	4900.0 ... 5950.0	MHz			35	39	—	dB

Data sheet


- 1) Attenuation of WCDMA signal ("Powertransferfunction", α_{WCDMA}) is determined by

$$\int_{-\infty}^{\infty} |S_{\text{ds21}}(f)H_{\text{RRC}}(f - f_{\text{Carrier}})|^2 df$$

f_{Carrier} according to 3GPP TS 25.101 (e.g. for band 26 RX passband, f_{Carrier} ranges from 861.4 MHz (lowest Rx channel) to 891.6 MHz (highest Rx channel)). $H_{\text{RRC}}(f)$ is the transfer function of the root-raised cosine transmit pulse shaping filter according to 3GPP TS 25.101 with the following normalization:

$$\int_{-\infty}^{\infty} |H_{\text{RRC}}(f)|^2 df = 1$$

- 2) Error Vector Magnitude (EVM) based on definition given in 3GPP TS 25.141.

Maximum ratings

Storage temperature range	T_{stg}	-40/+85 ¹⁾	°C	
DC voltage	V_{DC}	5 ²⁾	V	
ESD voltage	V_{ESD}	100 ³⁾	V	Machine Model
		250	V	Human Body Model
		600	V	Charge Device Model
Input power at Tx band 814.0 ... 849.0 MHz	P_{IN}	15	dBm	Continuous Wave @ 55°C 2000h

1) extended upper limit: 168h @ 125°C acc. to IEC 60068-2-2 Bb.

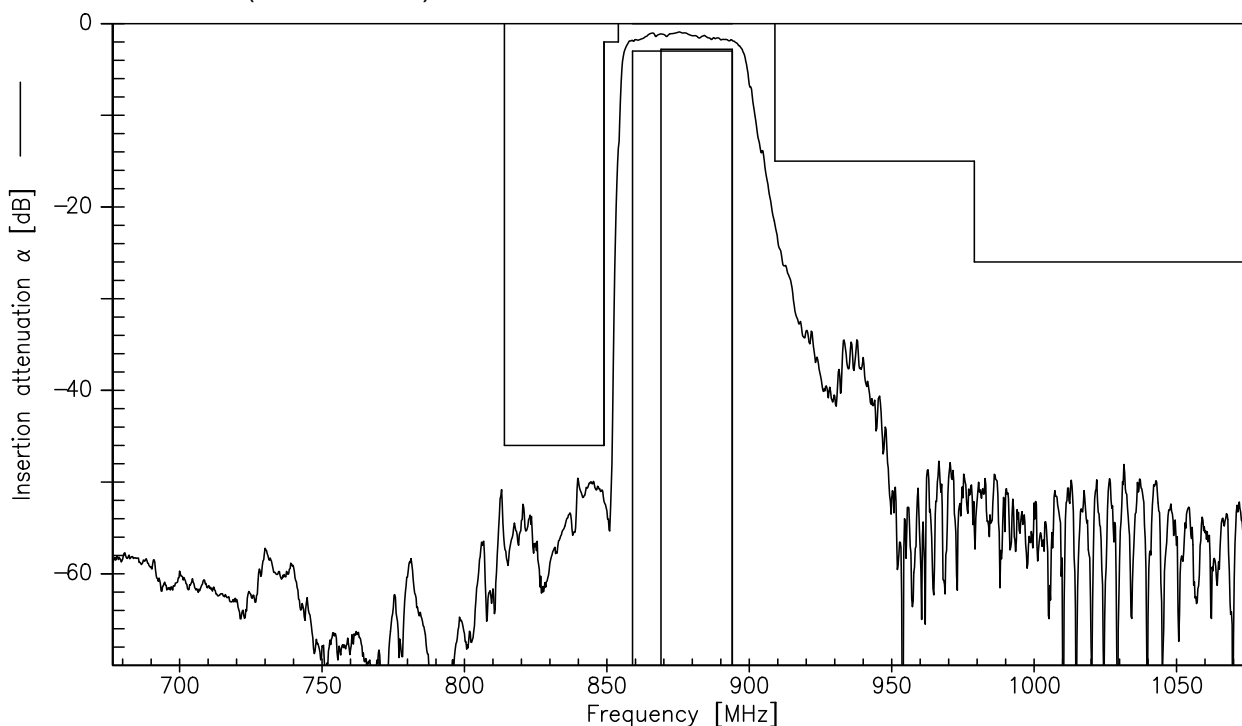
2) 168h Damp Heat Steady State acc. to IEC60068-2-67 Cy.

3) acc. to JESD22-A115B (MM - Machine Model), 10 negative & 10 positive pulses.

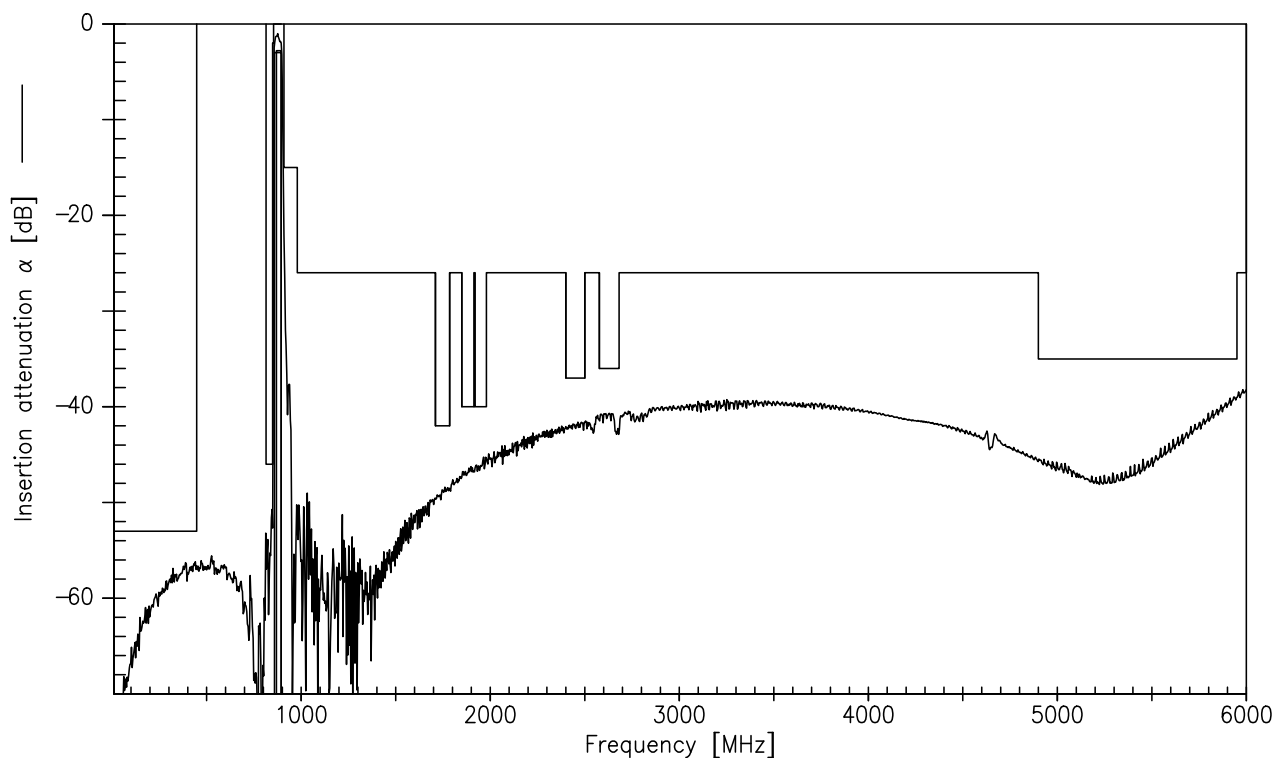
Data sheet

SMD

Transfer function (narrowband)



Transfer function (wideband)

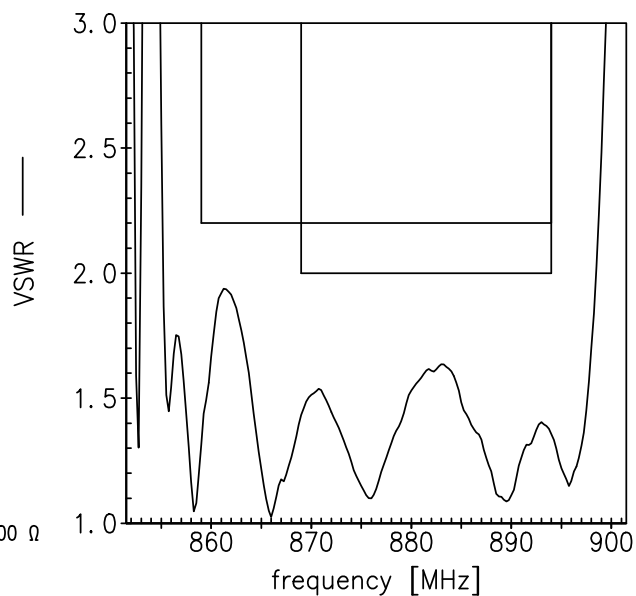
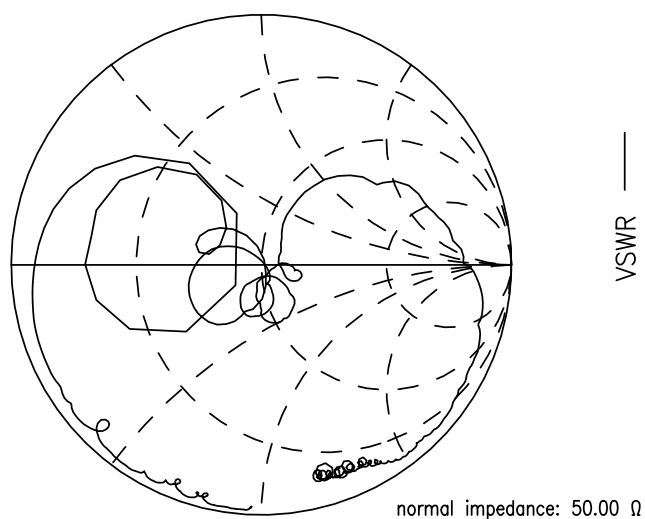


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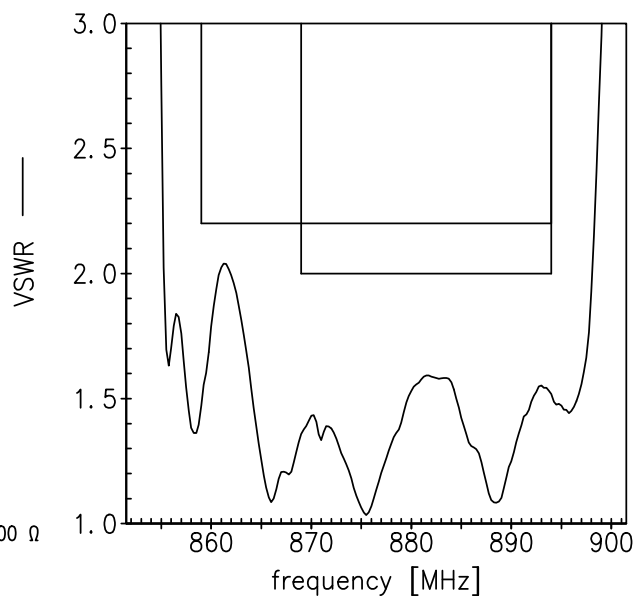
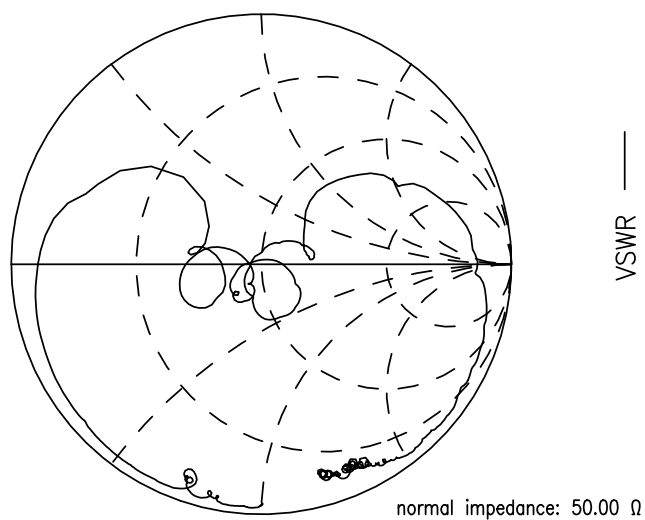
SMD

Smith charts

S₁₁ function



S₂₂ function



References

Type	B8825
Ordering code	B39871B8825P810
Marking and package	C61157-A8-A56
Packaging	F61074-V8255-Z000
Date codes	L_1126
S-parameters	B8825_NB.s2p, B8825_WB.s2p see file header for port/pin assignment table
Soldering profile	S_6001
RoHS compatible	ROHS-compatible means that products are compatible with the requirements according to Art. 4 (substance restrictions) of Directive 2011/65/EU of the European Parliament and of the Council of June 8th, 2011, on the restriction of the use of certain hazardous substances in electrical and electronic equipment ("Directive") with due regard to the application of exemptions as per Annex III of the Directive in certain cases.
Moldability	Before using in overmolding environment, please contact your EPCOS sales office.
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