

LA8153QA

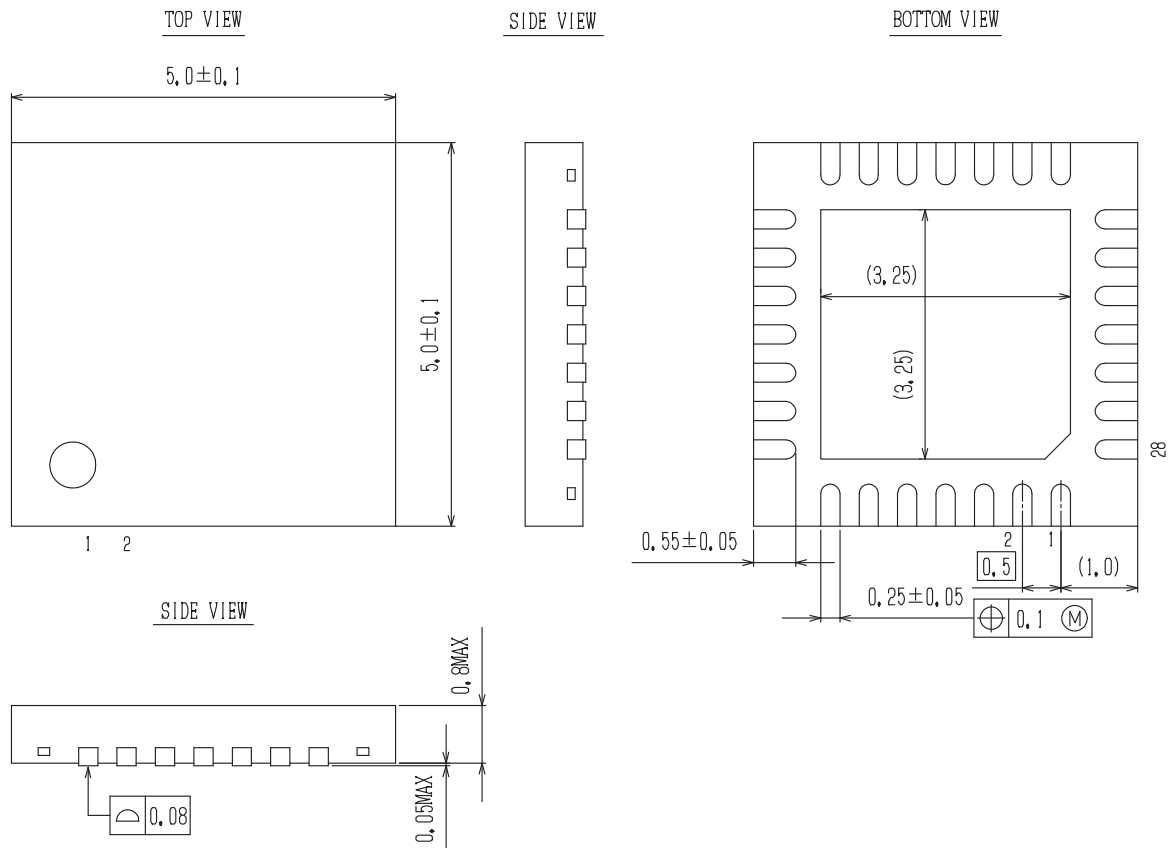
Electrical Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 3.3\text{V}$

Parameter	Symbol	Pin No.	Conditions	Ratings			Unit
				min	typ	max	
Circuit Current	I_{total}	3, 6, 17, 18, 27, 28	No Signal	77	100	130	mA
Power Save Current	I_{ps}	3, 6, 17, 18, 27, 28	No Signal	17	23	32	mA
RF Input Frequency Range	$f(\text{RF})$	8, 9	$f_c = -3\text{dB}$	50		150	MHz
RF AGC Range	GR1	27, 28	$V_{11}=2.5$ to 0V	40	48		dB
Mixer Conversion Gain	CG1	27 / 8 28 / 8	$V_{11}=2.5\text{V}$	23	26	29	dB
Mixer Inter Modulation 1	IM3 (1)	27 / 8 28 / 8	Input= $70\text{dB}\mu\text{V}$ $V_{11}=2.5\text{V}$	40	50		dB
IF Input Frequency Range	$f(\text{IF})$	23, 24	$f_c = -3\text{dB}$	30		100	MHz
IF Amplifier Gain	G(AGC)	19 / 23, 24 20 / 23, 24	$V_{11}=2.5\text{V}$	50	54	58	dB
IF Inter Modulation 2	IM3(2)	19 / 23, 24 20 / 23, 24	Output= $105\text{dB}\mu\text{V}$ ($99\text{dB}\mu\text{V}$ / tone)	50	60		dB
IF AGC Range	GR2	19, 20	IF Output Level $< \pm 1\text{dB}$	3	5		dB
IF AGC Output Level	$V_{O(\text{IF})1}$	19	Single output		0.5		Vp-p
IF AGC Output Level	$V_{O(\text{IF})2}$	20	Single output		0.5		Vp-p

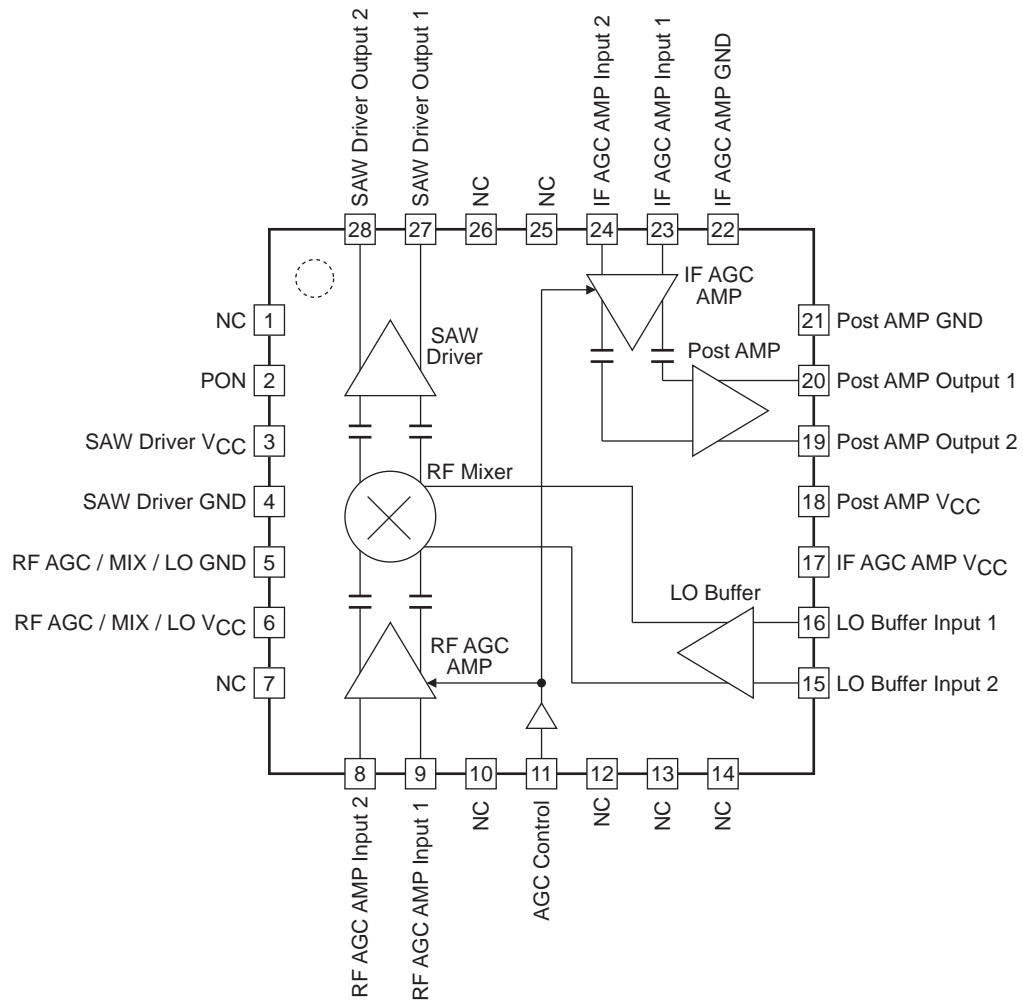
Package Dimensions

unit : mm

VQFN28 5x5, 0.5P / VQFN28U
CASE 508AV
ISSUE O



Pin Assignment and Block Diagram



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Pin Description at $T_a = 25^\circ\text{C}$, $V_{CC} = 3.3\text{V}$

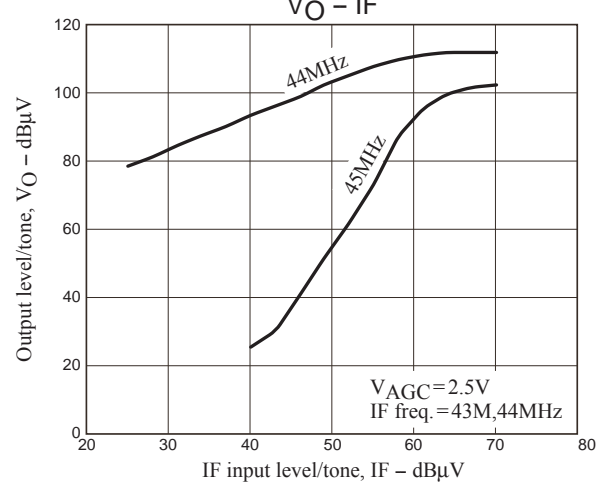
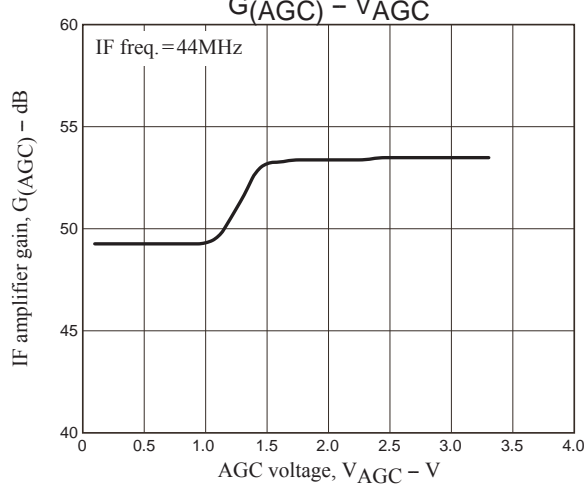
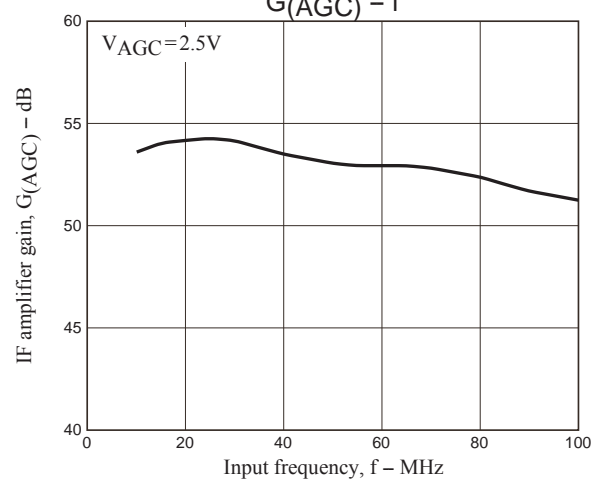
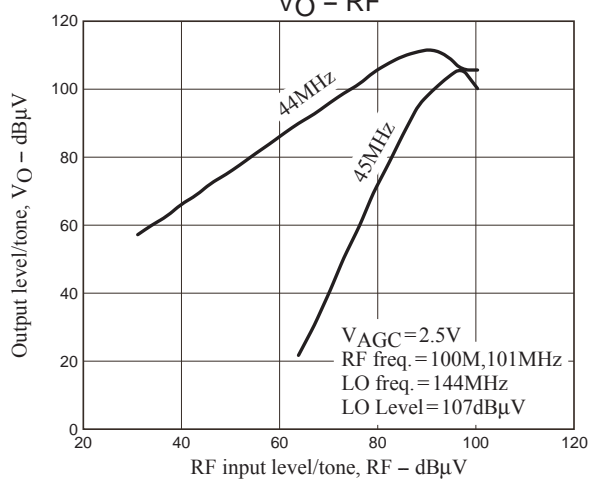
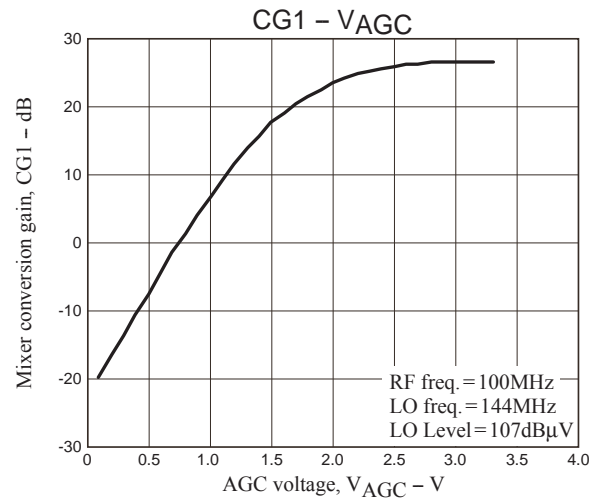
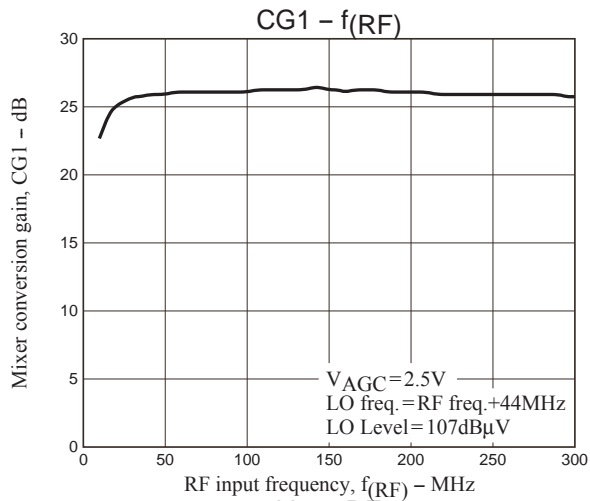
Pin No.	Pin voltage	Description	Equivalent circuit
1	–	NC (connect to GND)	
2	0.3V	PON	
3	3.3V	SAW Driver V_{CC}	
4	0V	SAW Driver GND	
5	0V	RF AGC / MIX / LO GND	
6	3.3V	RF AGC / MIX / LO V_{CC}	
7	–	NC (connect to GND)	
8	1.35V	RF AGC Amplifier Input	
9	1.35V		
10	–	NC (connect to GND)	
11	–	AGC Control	
12, 13, 14	–	NC (connect to GND)	
15	1.6V	LO Buffer Inputs	
16	1.6V		
17	3.3V	IF AGC Amplifier V_{CC}	
18	3.3V	Post Amplifier V_{CC}	
19	1.0V	Post Amplifier Outputs	
20	1.0V		

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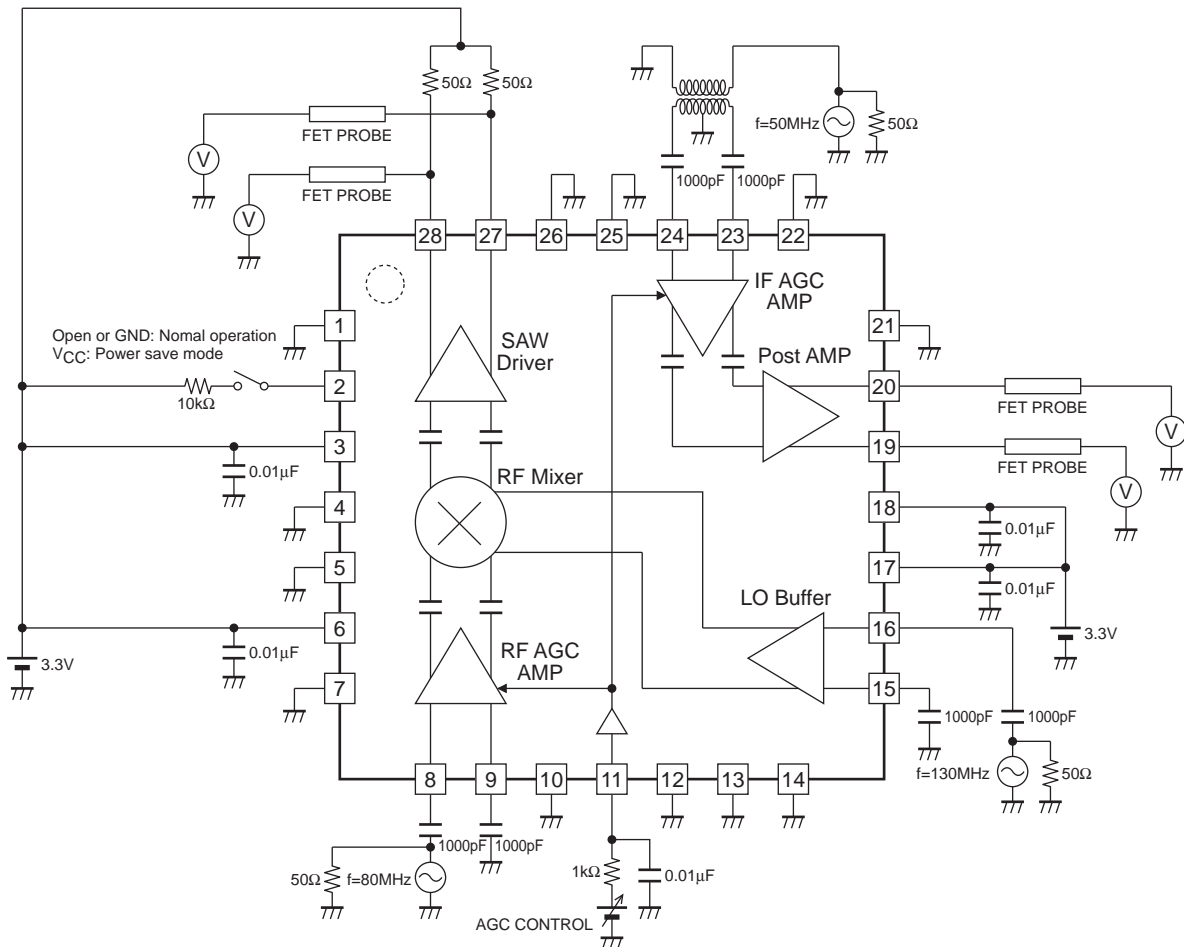
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Pin No.	Pin voltage	Description	Equivalent circuit
21	0V	Post Amplifier GND	
22	0V	IF AGC Amplifier GND	
23 24	2.5V 2.5V	IF AGC Amplifier Inputs	
25, 26	–	NC (connect to GND)	
27 28	2.4V 2.4V	SAW Driver Outputs	

AC Characteristics at $T_a = 25^\circ\text{C}$, $V_{CC} = 3.3\text{V}$ 

Test Circuit



Attention

Electrostatic capacity of some pins is $\pm 100\text{V}$ under the condition of $C = 200\text{pF}$ and $R = 0\Omega$, so please handle carefully enough.

ORDERING INFORMATION

Device	Package	Shipping (Qty / Packing)
LA8153QA-WH	VQFN28 5x5, 0.5P / VQFN28U (Pb-Free / Halogen Free)	2000 / Tape & Reel

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