

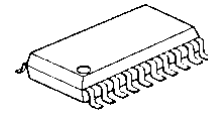
470MHz INPUT 455kHz FM IF DEMODULATOR

■ GENERAL DESCRIPTION

The **NJM2592** is a low-voltage, low-current FM IF demodulator IC with 455kHz (standard) IF frequency. It includes an oscillator, mixer, limiting amplifier, quadrature detector, active filter, and FSK comparator.

The **NJM2592** also has a RSSI circuit and RSSI comparator for carrier sense.

■ PACKAGE OUTLINE

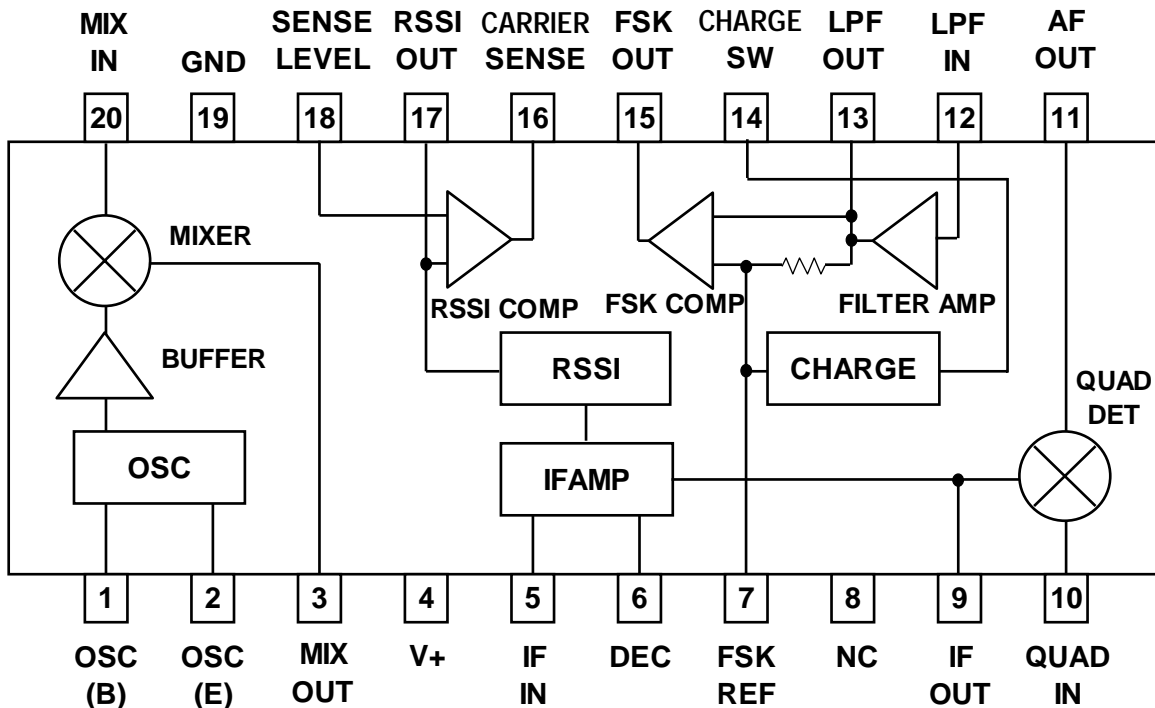


NJM2592V

■ FEATURES

- Low Operating Voltage 1.8V to 5.5V
- Low Operating Current 3.5mA at $V^+ = 2.0V$
- Operating Frequency up to 470MHz (reference value)
- IF Input Frequency 455kHz (standard)
- Ceramic Discriminator or LC resonant Circuit
- FSK Comparator with Open-collector Output
- Quick Charge /Discharge Circuit for FSK Reference Voltage
- Bipolar Technology
- Package Outline SSOP20

■ BLOCK DIAGRAM



NJM2592

■ ABSOLUTE MAXIMUM RATINGS

(Ta=25°C)

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V ⁺	7.0	V
Power Dissipation	P _D	300	mW
Operating Temperature	T _{opr}	- 40 to +85	°C
Storage Temperature	T _{stg}	- 40 to +125	°C

■ RECOMMENDED OPERATIONAL CONDITION

(Ta=25°C)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Supply Voltage	V ⁺		1.8	2.0	5.5	V

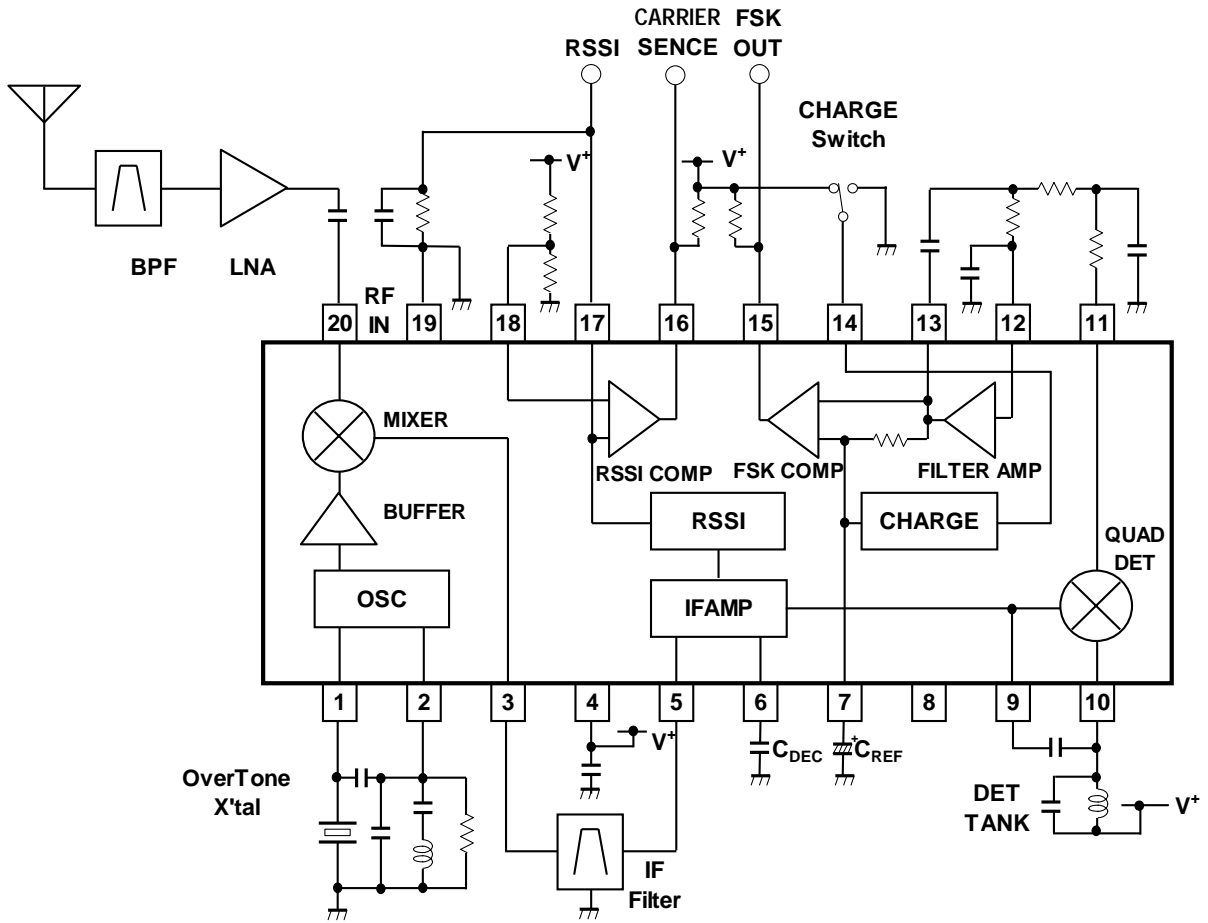
■ ELECTRICAL CHARACTERISTICS

(Ta=25°C, V⁺=2V, f_{mix}=470MHz, f_{if}=455KHz, f_{mod}=600Hz, f_{dev}=±4KHz, unless otherwise noted)

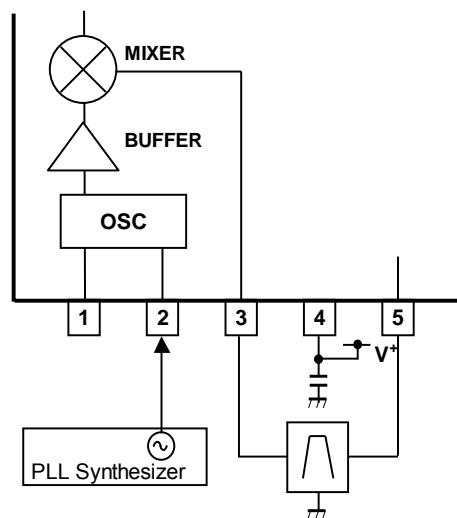
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Current Consumption	I _{ccq}	No Signal	-	3.5	-	mA
Mixer Conversion Gain1	G _{mix1}	Pin3 is terminated with 2kΩ.	-	20	-	dB
Mixer Conversion Gain2	G _{mix2}	Pin3 is terminated with 2kΩ.	-	TBD	-	dB
Mixer 3rd Order Intercept	IP		-	95	-	dBuV
Mixer Input Resistance	R _{inM}	f _{mix} =470MHz	-	50	-	Ω
Mixer Input Capacitance	C _{inM}	f _{mix} =470MHz	-	TBD	-	pF
Mixer Output Resistance	R _{oM}		-	2	-	kΩ
Signal to Noise Ratio 1	S/N1	Mixer input V _{in} =60dBuVEMF	-	60	-	dB
Signal to Noise Ratio 2	S/N2	Mixer input V _{in} =60dBuVEMF	-	60	-	dB
Signal to Noise Ratio 3	S/N3	Mixer input V _{in} =25dBuVEMF	-	30	-	dB
-3dB limiting Sensitivity	V _{In(lim)}	IF input	-	22	-	dBuVEMF
AM Rejection Raito	AMR	IF input, AM=30% V _i =60dBuVEMF	-	50	-	dB
IF Amplifier Input Resistance	R _{inIF}		-	2	-	kΩ
RSSI Output Voltage	V _{rssi}	IF input V _i =40dBuVEMF	-	0.9	-	V
Demodulated Output Level	V _{od}	IF input V _i =60dBuVEMF	-	60	-	mVrms

■ Oscillator Circuit

● Crystal and LC resonant Element



● PLL Frequency Synthesizer IC



[CAUTION]
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