

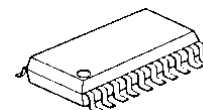
470MHz INPUT 455kHz FM IF DEMODULATOR

■ 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

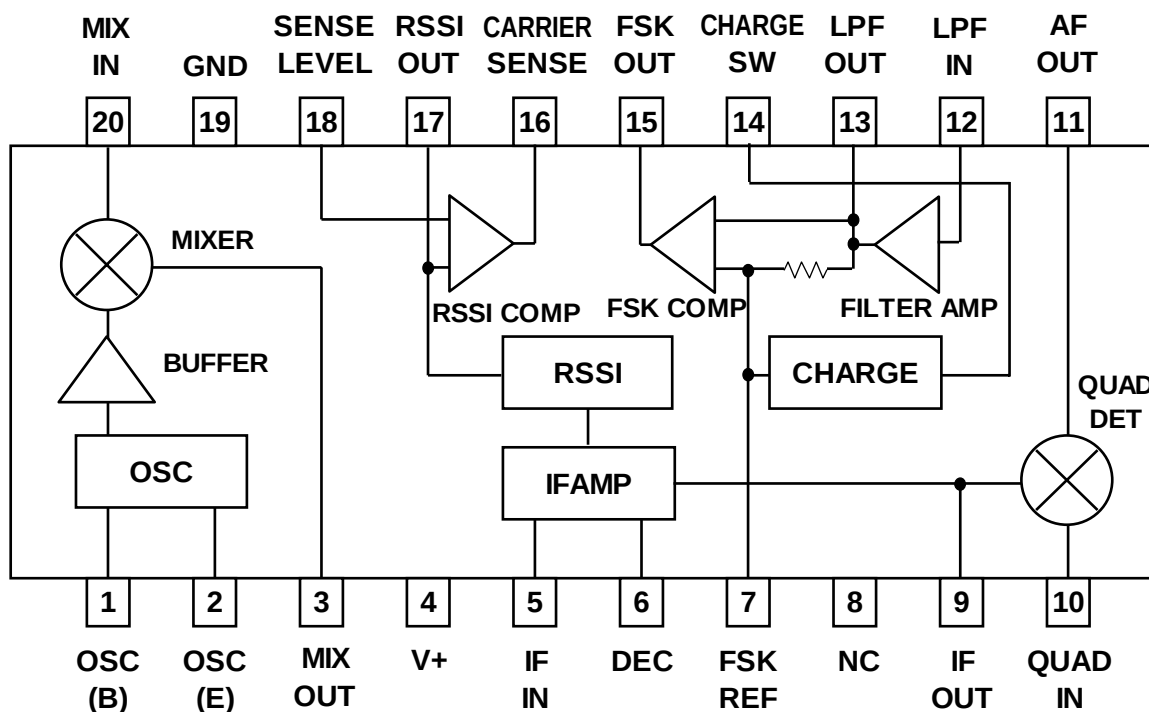


NJM2592V

■ 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

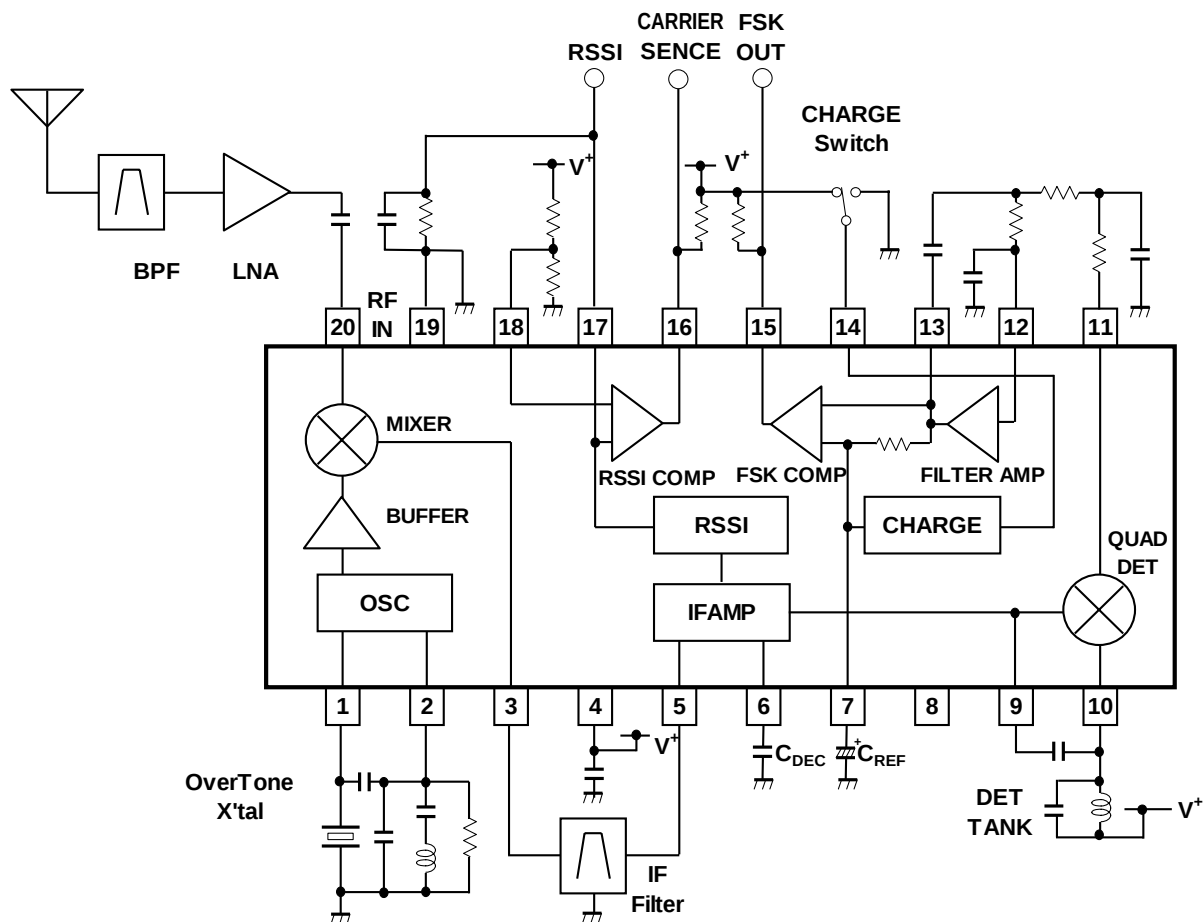
■ ELECTRICAL CHARACTERISTICS

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

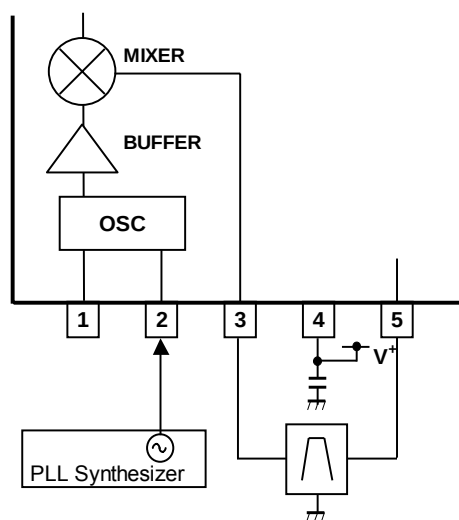
PARAMETER	SYMBOL	TEST CONDITIONS	MIN.	TYP.	MAX.	UNIT
Current Consumption	I _{ccq}	No Signal	-	3.5	-	mA
Mixer Conversion Gain1	G _{mix1}	Pin3 is terminated with 2kΩ.	-	20	-	dB
Mixer Conversion Gain2	G _{mix2}	Pin3 is terminated with 2kΩ.	-	TBD	-	dB
Mixer 3rd Order Intercept	IP		-	95	-	dBuV
Mixer Input 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]
The specifications on this databook are only given for information, without any guarantee as regards either mistakes or omissions. The application circuits in this databook are described only to show representative usages of the product and not intended for the guarantee or permission of any right including the industrial rights.