

FEATURES

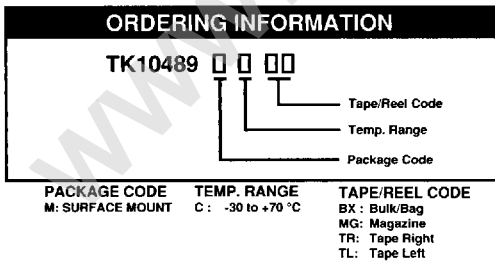
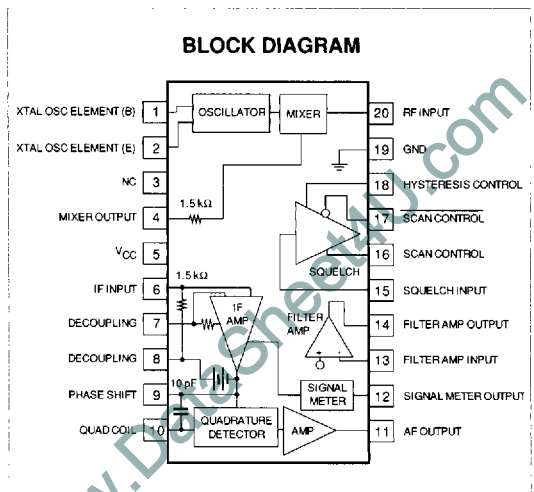
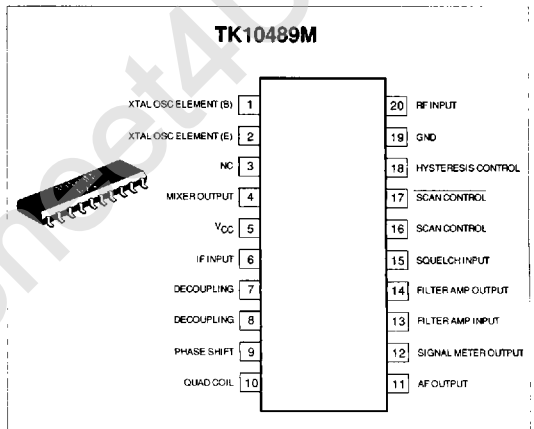
- Input Frequency 60 MHz
- Low Operating Current
- Low Operating Voltage
- Signal Strength Meter Output
- Small Surface Mount Package

DESCRIPTION

The TK10489 is a narrow band FM IF IC with built-in squelch, filter amp and mixer for dual conversion IF applications. The RF input can be as high as 60 MHz and the mixer output frequency is typically 455 kHz, suitable for ceramic filtering. The device has a signal strength meter output, and adjustable squelch. The TK10489 is available in an MFP-20 surface mount package.

APPLICATIONS

- Amateur Radio Transceivers
- Cordless Telephones
- Scanners
- Communications Devices



TK10489

ABSOLUTE MAXIMUM RATINGS

Input Voltage V_{CCMAX}	10 V	Storage Temperature Range	-55 to +150 °C
Power Dissipation (Note 1)	410 mW	Operating Temperature Range	-30 to +70 °C
Junction Temperature	150 °C	Lead Soldering Temp. (10 sec.)	300 °C
Operating Voltage Range	2.5 to 8.0 V		

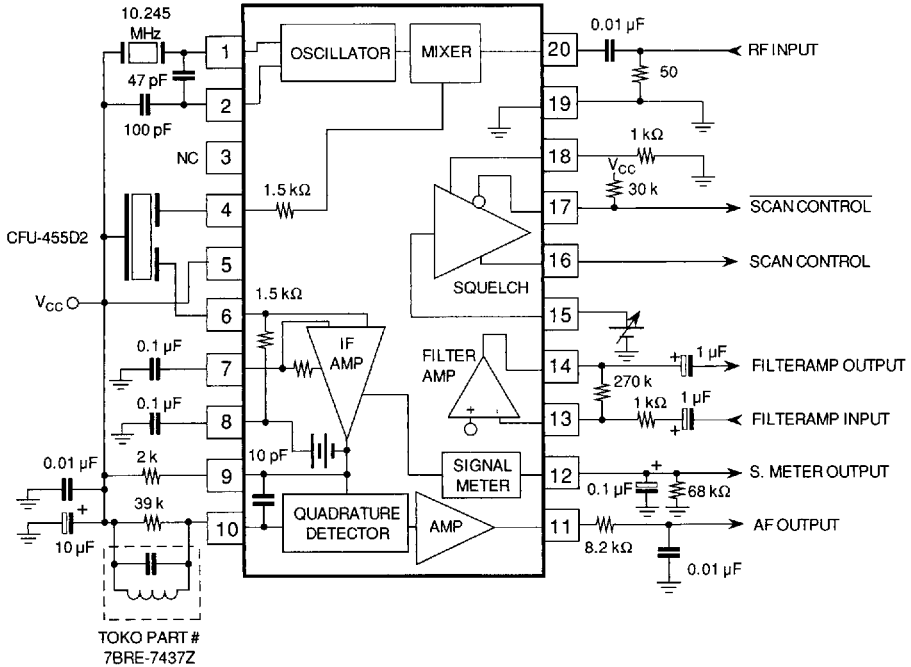
ELECTRICAL CHARACTERISTICS

Test conditions: $V_{CC} = 5.0$ V, $T_A = 25$ °C, $F_{(RF IN)} = 10.7$ MHz, $\Delta f = \pm 3$ kHz, $f_m = 1$ kHz, unless otherwise specified.

SYMBOL	PARAMETER	TEST CONDITIONS	MIN	TYP	MAX	UNITS
I_{CC1}	Supply Current	No input, squelch off		2.6	4.0	mA
I_{CC2}	Supply Current	No input, squelch on		3.2	5.0	mA
Limit	Limiting Sensitivity	-3 dB Point		2.0	6.0	μ V
V_{OUT}	Detector Output	$V_{IN} = 10$ mV; dev., ± 3 kHz	170	250	350	mV(rms)
Z_{OUT}	Impedance	$V_{IN} = 10$ mV		800		Ω
THD	Distortion	$V_{IN} = 10$ mV		1.0	2.5	%
F_G	Filter Amplifier Gain	$F_{IN} = 10$ kHz; $V_{IN} = 3$ mV	40	46		dB
F_{DC}	Output Voltage	No input		0.7		V
S_H	Scan Control High Level	Squelch input = 0 V	4.3			V
S_L	Scan Control Low Level	Squelch input = 2.5 V			0.5	V
$\overline{S_H}$	Scan Control High Level	Squelch input = 2.5 V	2.3			V
$\overline{S_L}$	Scan Control Low Level	Squelch input = 0 V			0.5	V
HYS	Squelch Hysteresis	$R_{HYS} = 1$ k Ω		80		mV
M_G	Mixer Conversion Gain			28		dB
M_{INR}	Mixer Input Resistance	DC measurement		3.6		k Ω
S_{DY}	Signal Meter Output Dynamic Range		70	80		dB
S_{OUT0}	Signal Meter Output (0)	$V_{IN} = 0$ mV, $R_s = 68$ k Ω		0.25	0.50	V
S_{OUT1}	Signal Meter Output (1)	$V_{IN} = 0.01$ mV, $R_s = 68$ k Ω	0.15	0.50	0.80	V
S_{OUT2}	Signal Meter Output (2)	$V_{IN} = 0.1$ mV, $R_s = 68$ k Ω	0.70	1.05	1.40	V
S_{OUT3}	Signal Meter Output (3)	$V_{IN} = 1$ mV, $R_s = 68$ k Ω	1.25	1.65	2.00	V
S_{OUT4}	Signal Meter Output (4)	$V_{IN} = 10$ mV, $R_s = 68$ k Ω	1.85	2.20	2.60	V
S_{OUT5}	Signal Meter Output (5)	$V_{IN} = 100$ mV, $R_s = 68$ k Ω	2.05	2.40	2.80	V

Note 1: Power dissipation must be derated at the rate of 3.3 mW/°C for operation at $T_A = 25$ °C and above.

TEST CIRCUIT



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