Bipolar IC

Type	Ordering Code	Package
TBB 2469 G	Q67000-A2392	P-DSO-20-L (SMD)

The TBB 2469 G is an FM narrowband IC particularly intended for radio receivers. It is suited for the conversion, limiting, demodulation, and AF processing of an FM-modulated signal.

The input signal is routed via an RF amplifier to a crystal-controlled mixer. The IF signal is routed via an external selection, to a limiter amplifier followed by a coincidence demodulator. The AF signal is routed via a lowpass to an AF amplifier. Gain and frequency response of the first amplifier can be set externally. The second amplifier contains the volume control.

Absolute Maximum Ratings

$T_A = -40\,°C$ to $85\,°C$

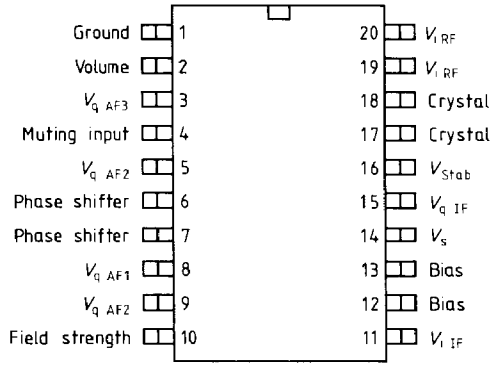
Parameter	Symbol	Values		Unit
		min.	max.	
Supply voltage	V_S	0	15	V
Load current of V_{stab}	I_{Stab}	0	50	µA
Junction temperature	T_j		125	°C
Storage temperature	T_{stg}	−40	125	°C
Thermal resistance (system-air)	$R_{th\,SA}$		120	K/W

Operating Range

Supply voltage	V_S	3	12	V
Ambient temperature	T_A	−30	80	°C

Pin Configuration

(top view)



Characteristics

$V_S = 4.5$ V, $T_A = -30$ °C to 60 °C

Parameter	Symbol	Values			Unit	Test Condition
		min.	typ.	max.		
Current consumption	I_S		3.0	5.0	mA	
Reference voltage	V_{stab}	1.9	2.2	2.5	V	
RF Prestage						
Voltage gain	G_V	36	42	48	dB	$f_i = 10...50$ MHz[1] (−3 dB)
Input impedance	Z_i		10//3		kΩ//pF	
Noie figure	NF		6		dB	

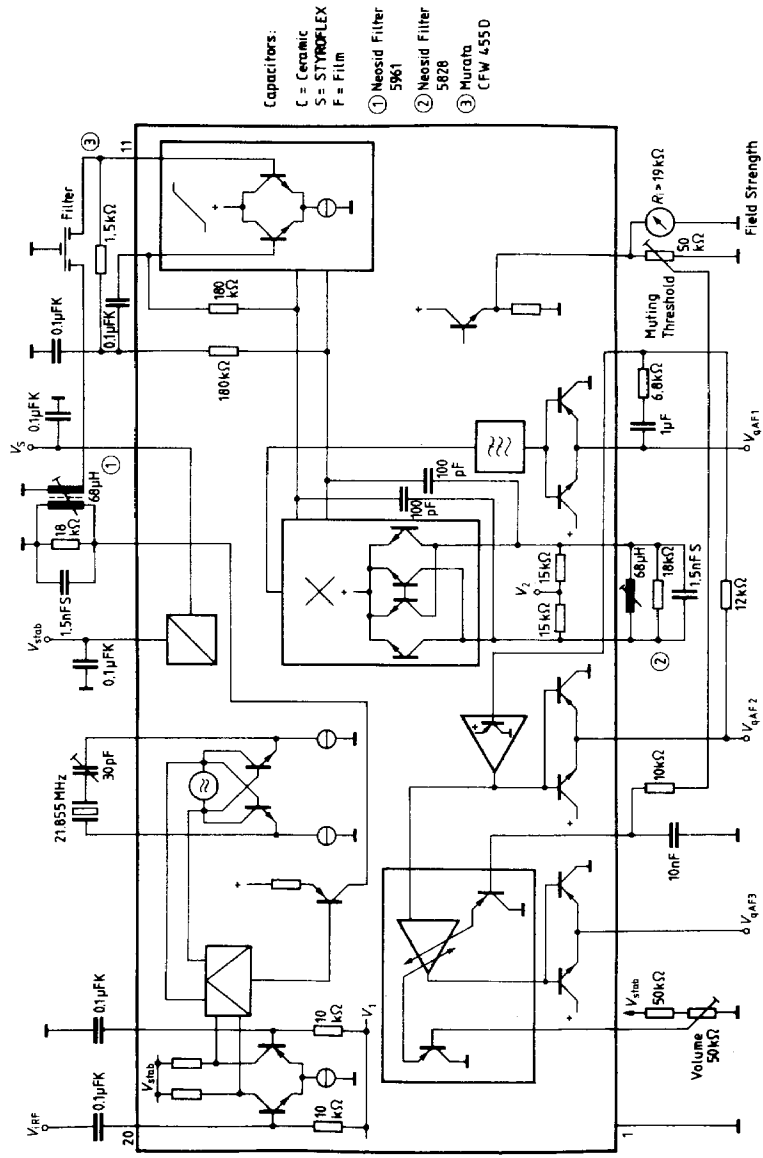
IF Limiter Amplifier at $\Delta f = \pm 2.8$ kHz, $f_{i\,IF} = 455$ kHz[1]
$f_{mod} = 1$ kHz, $V_{i\,IF\,rms} = 10$ mV, Q factor appr. 15

Parameter	Symbol	Values			Unit	Test Conditions
		min.	typ.	max.		
Input resistance	R_i		20		kΩ	
IF bandwidth	B_{IF}	500			kHz	$V_{1\,AF1} = -3$ dB
AM suppression	AMS	40			dB	$m = 30\%$
Signal-to-noise ratio	$a_{S/N}$		40		dB	
Field strength	V_{10} V_{10}		 1.9	100	mV V	$V_{i\,IF} = 0$ V $V_{i\,IF} = 10$ mV
AF output voltage	$V_{q\,AF1}$	30	60		mV	
Min. load resistance	R_{q1}	300			Ω	
AF bandwidth	B_{AF}	20	35		kHz	$V_{q\,AF1} = -3$ dB
Total harmonic distortion[1]	THD		1	2	%	
AF Amplifier 2						
Voltage gain	G_V		37		dB	$V_{i\,AF1} = 1$ mV
Min. load resistance	R_{q2}	1			kΩ	
Input impedance	R_i	10			kΩ	
Signal-to-noise ratio	$a_{S/N}$		40		dB	
Total harmonic distortion[1]	THD		2		%	
AF Amplifier 3						
Voltage gain	G_V		10		dB	$V_2 = 0$ V, $V_{11} = 1$ V
Max. output voltage	$V_{q\,AF3\,rms}$			300	mV	$THD = 10\%$
Min. load resistance	R_{q3}	5			kΩ	
Total harmonic distortion[1]	THD		2		%	
Volume control range	G_{vol}		80		dB	
Disturbance voltage in acc. with DIN 45405[2]	V_d		20	50	μV_{0s}	$V_2 = 1/2\ V_{stab}$

[1] dependent on external components

[2] AQL = 2.5

Application Circuit



Test Circuit