

SIEMENS

S 041 P FM IF Amplifier with Demodulator

S 041 P is a symmetrical, six-stage amplifier with symmetrical coincidence demodulator for amplifying, limiting, and demodulating frequency-modulated signals. The IC is particularly suited for sets where low current consumption is of importance, or where major supply fluctuations occur.

The pin configuration corresponds to the well-known TBA 120. Pin 5 of S 041 P, however, is not connected internally. These types are especially suited for applications in narrow-band FM systems (455 kHz) and in conventional or standard FM IF systems (10.7 MHz).

Features

- Good limiting properties
- Wide voltage range
- Low current consumption
- Few external components

Maximum ratings

Supply voltage	V_S	15	V
Junction temperature	T_j	150	°C
Storage temperature range	T_{stg}	-40 to 125	°C
Thermal resistance (system-air)	$R_{th,sa}$	90	K/W

S 041 P

Operating range

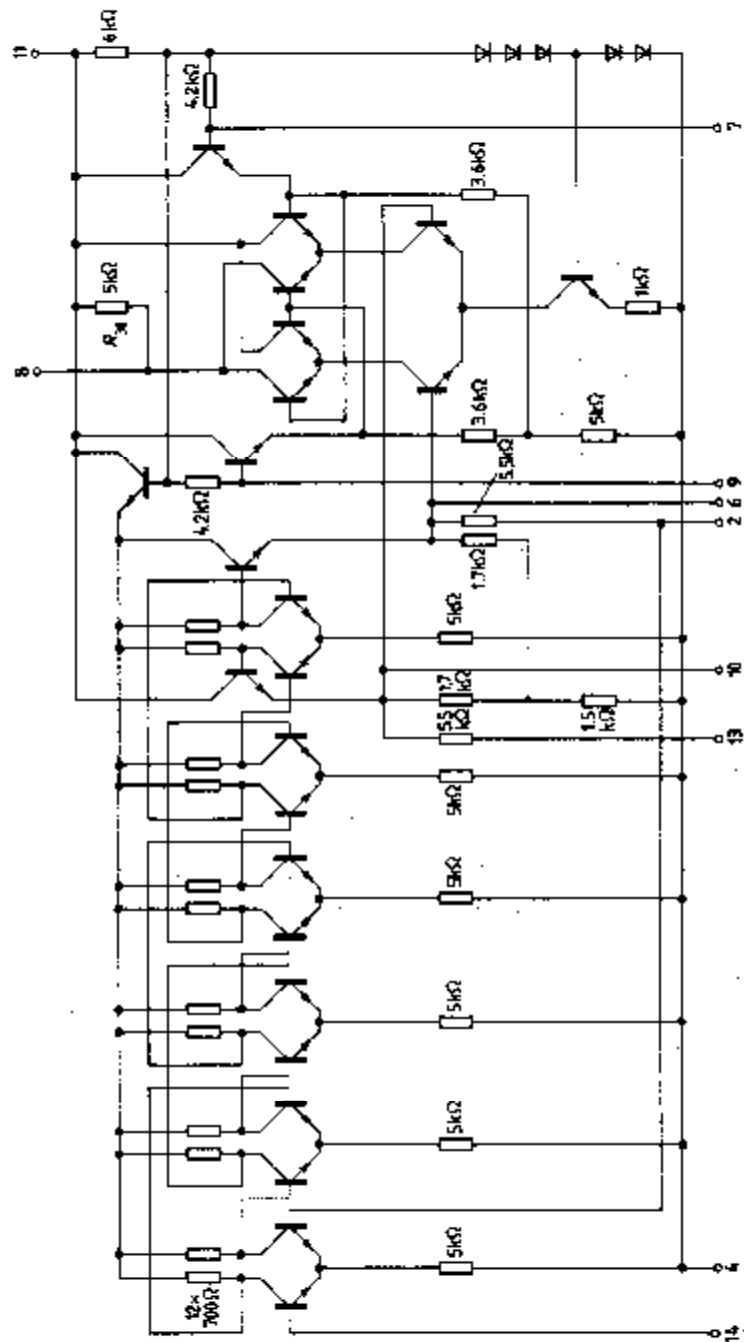
Supply voltage range	V_S	4 to 15	V
Frequency range	f_i	0 to 35	MHz
Ambient temperature range	T_{amb}	-25 to 85	°C

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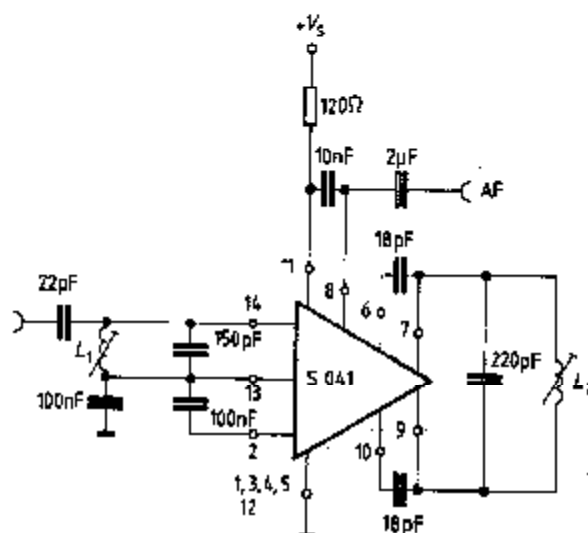
All connections mentioned in the Index refer to S 041 P (e.g. V₁)



Circuit diagram



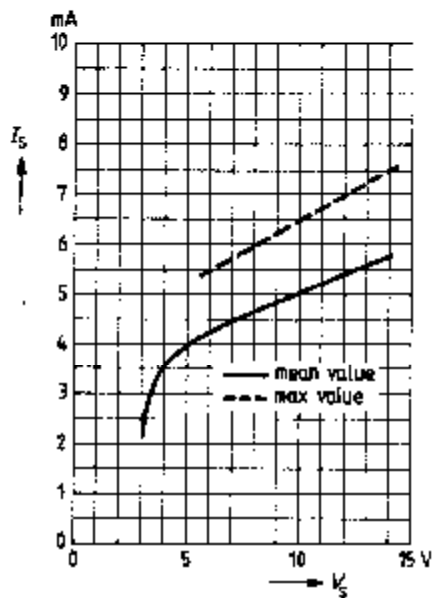
**Application circuit for 10.7 MHz (FM IF)
and 455 kHz (narrow-band FM)**



Data in parentheses for 455kHz (narrow-band FM)

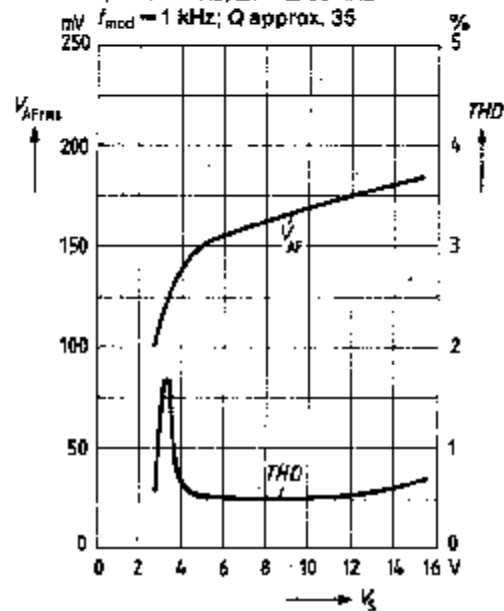
Coils	10.7 MHz	455 kHz
L ₁	15 turns/0.15 CuLS	71.5 turns/12 x 0.04 CuLS
L ₂	12 turns/0.25 CuLS	71.5 turns/12 x 0.04 CuLS
Coil set	D 41-2165	D 41-2393 of Messrs. Vogt

Current consumption
versus supply voltage

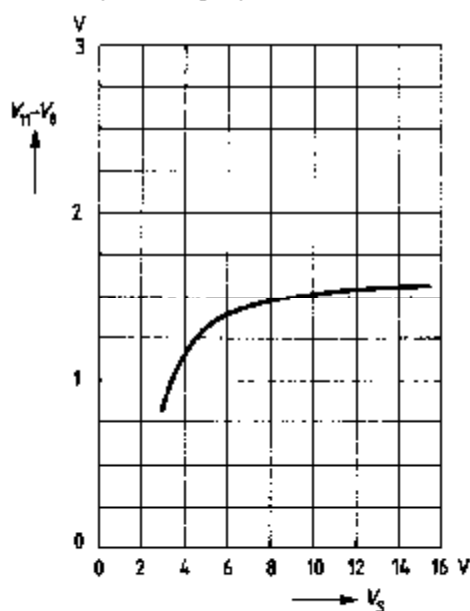


AF output voltage and total
harmonic distortion versus
supply voltage

$f_1 = 10.7$ MHz; $\Delta f = \pm 50$ kHz
 $f_{\text{mod}} = 1$ kHz; Q approx. 35

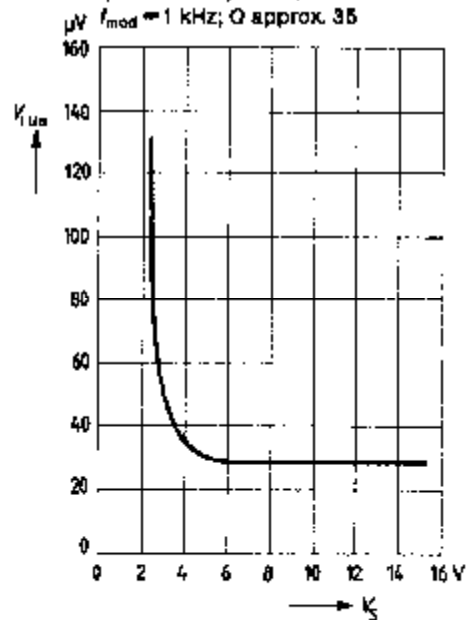


DC output voltage difference
versus supply voltage
(without signal)

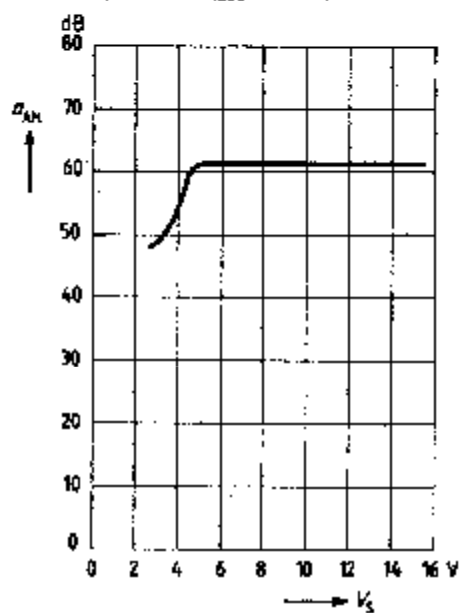


Input voltage for limiting
versus supply voltage

$f_1 = 10.7$ MHz; $\Delta f = \pm 50$ kHz
 $f_{\text{mod}} = 1$ kHz; Q approx. 35



AM suppression versus
supply voltage
 $f_i = 10.7 \text{ MHz}$; $\Delta f = \pm 50 \text{ kHz}$;
 $V_i = 10 \text{ mV}$, $f_{mod} = 1 \text{ kHz}$, $m = 30\%$



AF output voltage and total
harmonic distortion versus Q-factor
 $V_S = 12 \text{ V}$; $f_i = 10.7 \text{ MHz}$;
 $\Delta f = \pm 50 \text{ kHz}$, $f_{mod} = 1 \text{ kHz}$

