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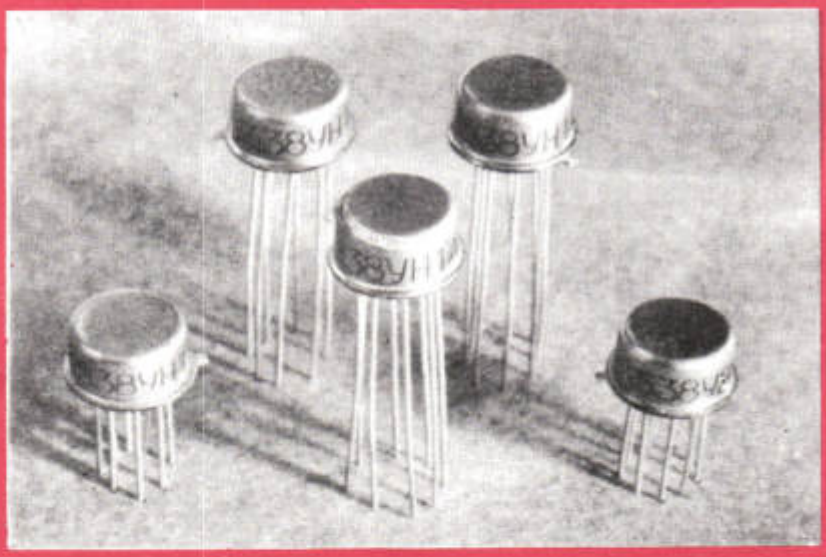


The K538YH1 is a low noise monolithic preamplifier for the amplification of low level audio signals in applications requiring optimum noise performance.

The K538YH1 preamplifier is used in high-performance audio and measuring equipment, including spectral and distortion analysis. Electrical parameters and circuit functions performed will enable the designers to substantially simplify the design and decrease the weight and dimensions of equipment, thereby increasing the reliability.

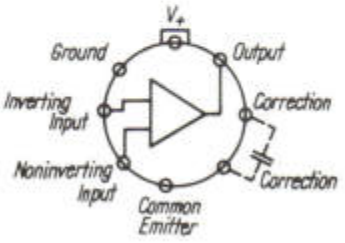
The circuit is supplied in a TO-99 package.

SPECIAL FEATURES

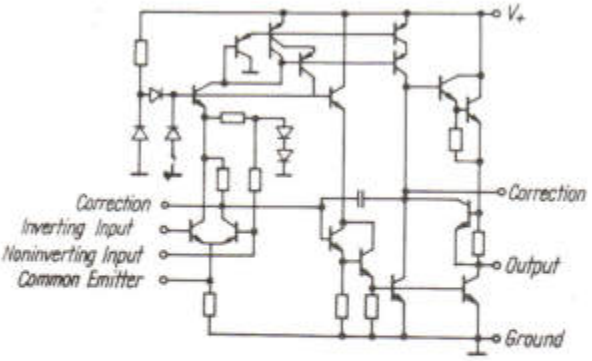
- Low noise - total equivalent input noise 1 μV typical
- Low harmonic distortions - 0.05 % typical, closed loop gain = 50
- Wide bandwidth - 30 MHz typical for unity gain
- Internal stabilization, PSRR - 110 dB typical
- High voltage gain - 10^5 typical
- Internally compensated, to voltage gain = 10
- Wide supply range
- Single supply operation range from +12 to +18 V
- Short circuit protected

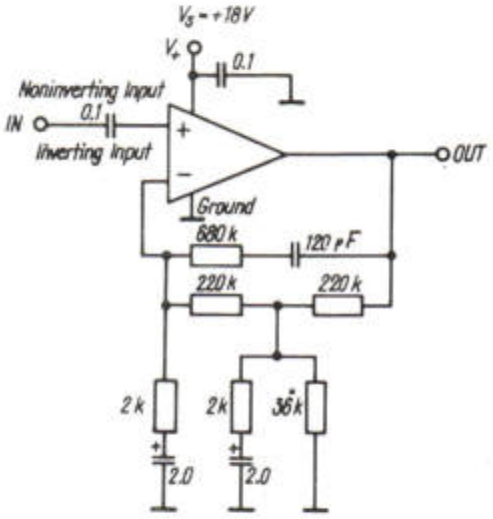
LOW NOISE AMPLIFIER
K538YH1

DIAGRAMS, TYPICAL APPLICATIONS

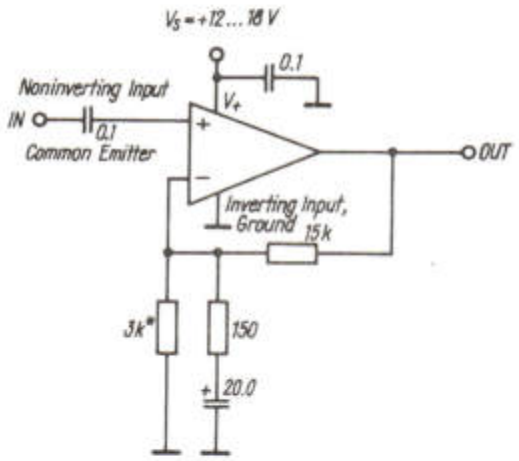


Top View

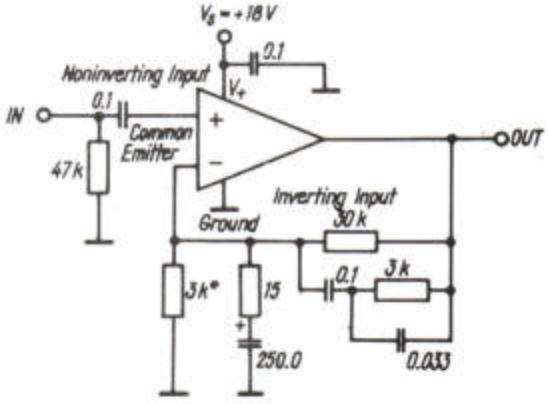




Two-Pole Fast Turn-On
Tape Preamplifier



Linear Mode, Minimum Noise



Typical Magnetic
Phono Preamplifier

K538YH1

ELECTRICAL CHARACTERISTICS (V_S = +15 V $\pm$5 %, T = 25 °C)

Parameter	Units	Min.	Typ	Max.
Open Loop Voltage Gain		3.10^4	10^5	
Input Noise Voltage R_S = 500 Δf = 100 to 10000 Hz	μV		1.0	1.4
Total Harmonic Distortion V_{out} = 2 V A_{CL} = 50 f = 1 kHz	%		0.05	0.1
Unity Gain Bandwidth	MHz	10	30	
Output Voltage Swing (p-p)	V	V_S-3		
Supply Current	mA		6	10
Input Resistance (Positive Input)	kΩ	50		
Output Resistance	Ω		100	
Power Supply Rejection Ratio	dB	100	110	

SPECIFICATIONS FOR T = +1 to +70 °C TEMPERATURE RANGE

Open Loop Voltage Gain		$2.5 \cdot 10^4$		
Output Voltage Swing (p-p)	V	V_S-5		
Supply Current	mA			10

SHORT-TERM OPERATING MODE LIMITS

Power Supply Voltage	+30 V
Input Voltage	300 mV
Load Resistance	0 Ω
Temperature	up to +125 °C

K538YH1

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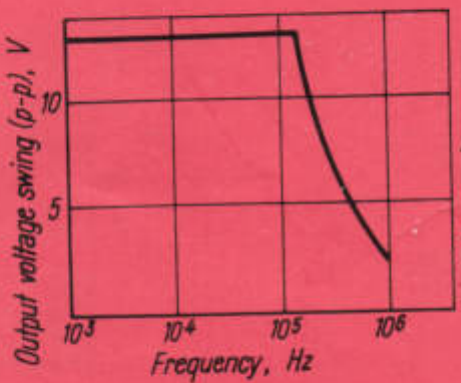
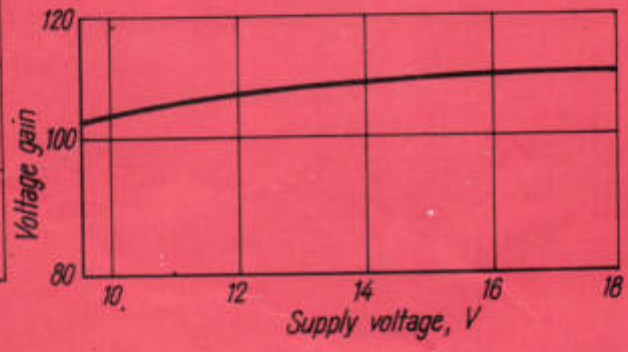
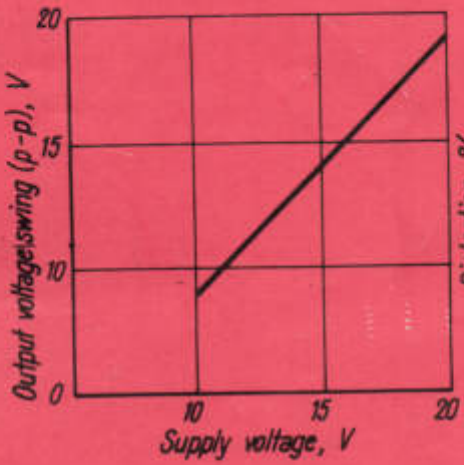
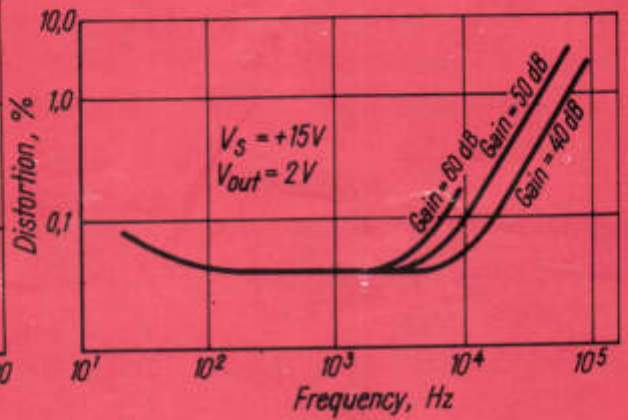
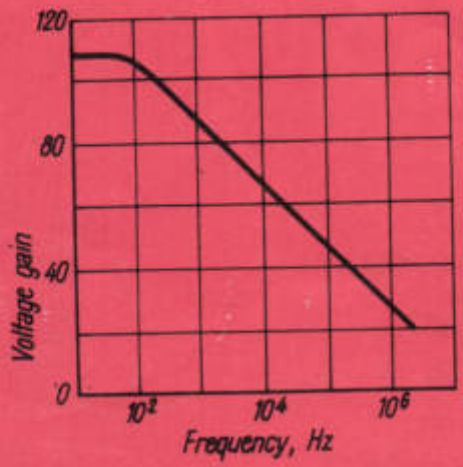
TYPICAL PERFORMANCE CURVES

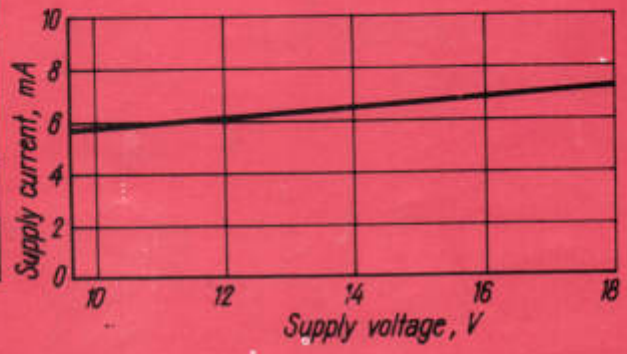












ЕК "ПИ", 3, XI 1977, 77-1317, 1000.