

Type	Ordering code	Package
SAS 580	Q 67000-S28	} DIP 18
SAS 590	Q 67000-S29	

Channel memory for use in radio and TV sets. The four stages can be selected by touching the sensor area. Each stage is provided with an indicator output. The tuning voltage is applied to a common output. SAS 580 is the basic component for the first 4 channels. The number of channels can be increased by 4 with each additionally connected SAS 590 amplifier.

Features

- High input sensitivity
- Low saturation voltage of the driver outputs
- Low temperature drift of the tuning switches
- Driver outputs to control filament lamps, LEDs, neon lamps, or nixie tubes
- Standby operation possible
- Ring counter up to 10 kHz
- No external diode matrix
- Single power supply

Maximum ratings

Supply voltage (without series resistor)	V_{16}	36	V
Current consumption (for operation with higher voltage, a series resistor is required)	I_6	15	mA
Driver current	I_3, I_5, I_7, I_9	55	mA
Max. driver current, $t_{max.} \leq 2$ s	I_3, I_5, I_7, I_9 max.	100	mA
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

Operating range

Supply voltage 1	V_{16}	10 to 36	V
Ambient temperature	T_A	0 to 70	°C

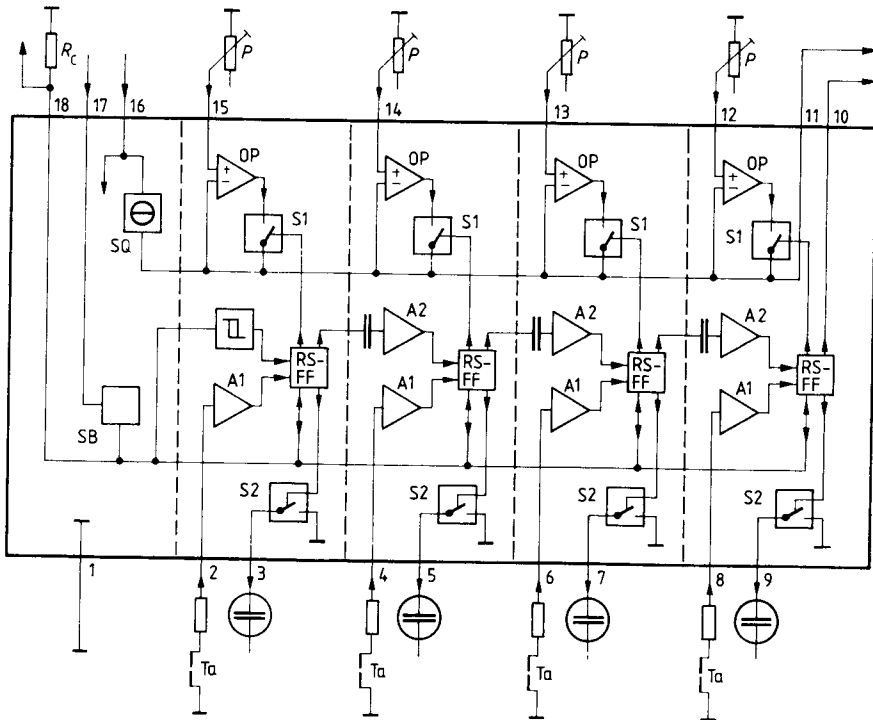
Characteristics

with reference to test circuit, $V_{16} = 30 \text{ V}$, $T_A = 25 \text{ }^\circ\text{C}$

	min	typ	max	
Internal current consumption				
channel switched	I_6	4.5	7	9.5
channel not switched	I_6	2.9	5	8.5
				mA
Voltage at pin 18				
during touching keys 1...8	V_{18s}	3.25	3.7	4.2
after touching keys 1...8	V_{18h}	2.6	2.9	3.2
				V
Saturation voltage of driver outputs				
$R_L = 1 \text{ k}\Omega$	V_3, V_5, V_7, V_9		0.8	1.5
$R_L = 30 \text{ k}\Omega$	V_3, V_5, V_7, V_9		30	60
				V
Reverse voltage of driver outputs				
$I_{rev} = 100 \text{ }\mu\text{A}$	V_3, V_5, V_7, V_9	60		
$I_{rev} = 5 \text{ }\mu\text{A}$	V_3, V_5, V_7, V_9	50		
				V
Tuning voltage				
Input current of tuning voltage inputs	$V_{12}, V_{13}, V_{14}, V_{15}$	0.3		$V_{16} - 2$
Offset voltage of tuning switches ¹⁾	I_2, I_3, I_4, I_5		150	300
	V_{12-11}, V_{13-11}			± 100
	V_{14-11}, V_{15-11}			± 100
				mV
Temperature drift of tuning voltage switches ($T_A = 25$ to $50 \text{ }^\circ\text{C}$) ¹⁾	V_T			5
Resistance of tuning output	R_{q11}		3	
				mV
$I_{11} < \pm 30 \text{ }\mu\text{A}$				k Ω
Input current				
for channel switching amplifiers	I_2, I_4, I_6, I_8	20	80	200
Input threshold voltage of switching amplifiers ($I_2, I_4, I_6, I_8 = 80 \text{ nA}$)	V_2, V_4, V_6, V_8		5.5	
				V
Switching frequency of ring counter	f_{rc}		10	
				kHz
Reset to channel 1				
Switching pulse level	V_{SI18}		15	
Switching pulse duration	T_{SI18}	70		
Switching pulse rise time	t_{SILH18}			1
				μs
Switching to the next stage				
Switching pulse level	V_{SI18}		15	
Switching pulse duration	T_{SI18}		2.5	
Switching pulse rise time	t_{SILH18}			1
				μs
Characteristics of the Z diode				
Z voltage ($I_{16(30V)} + 3 \text{ mA}$)	V_Z	34		39
				V

¹⁾ measured between connected input and pin 11.

Block diagram SAS 580



SQ: Current source
SB: Standby
OP: Operational amplifiers
 T_a : Key

Figure 1

Circuit diagram: one channel

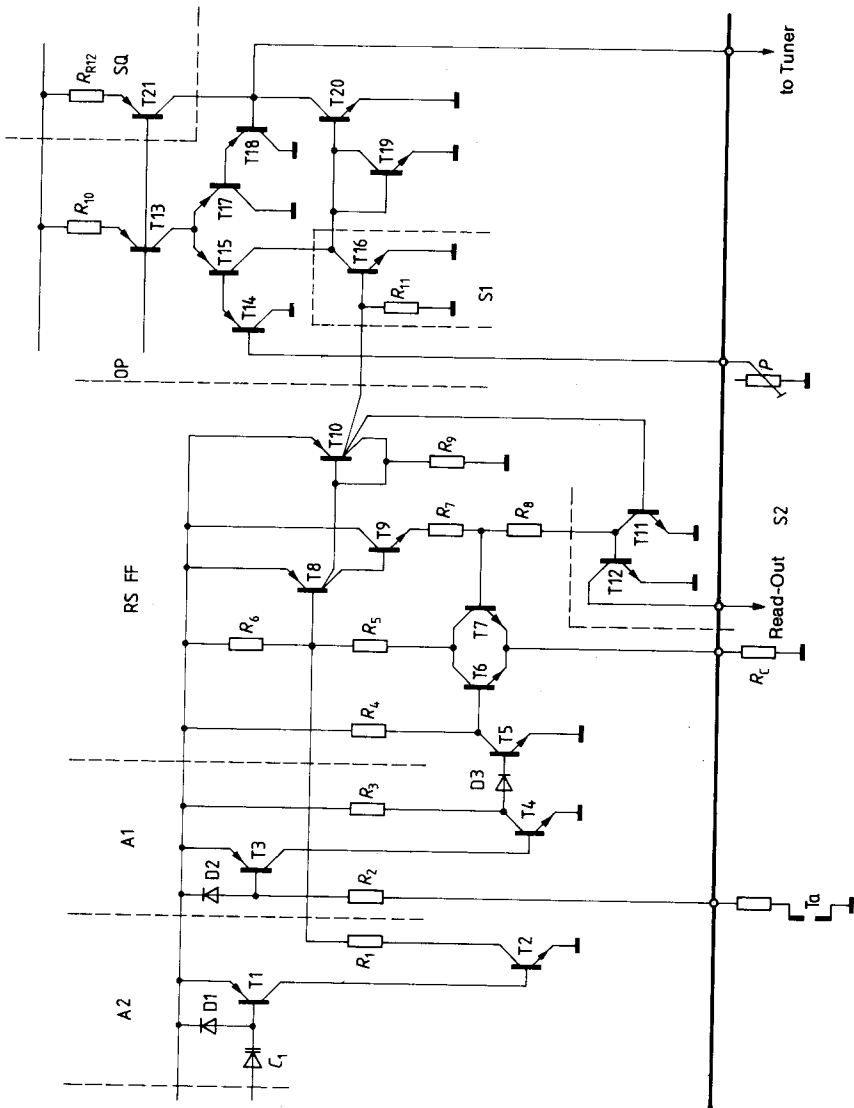


Figure 2

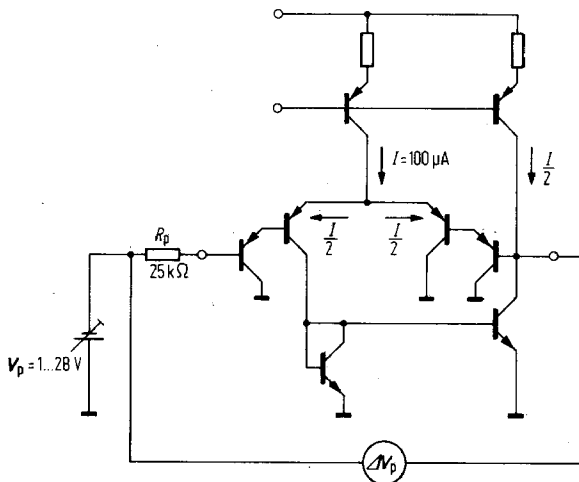


Figure 3

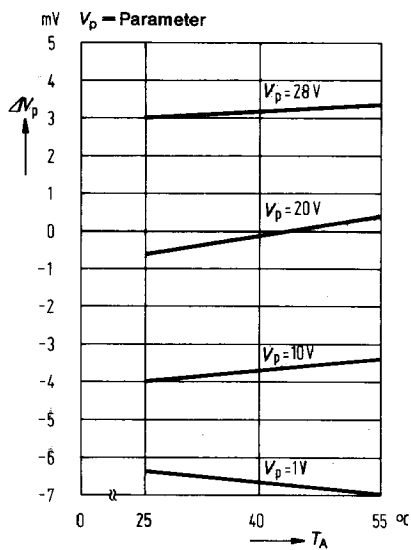


Figure 4

Application circuit 1

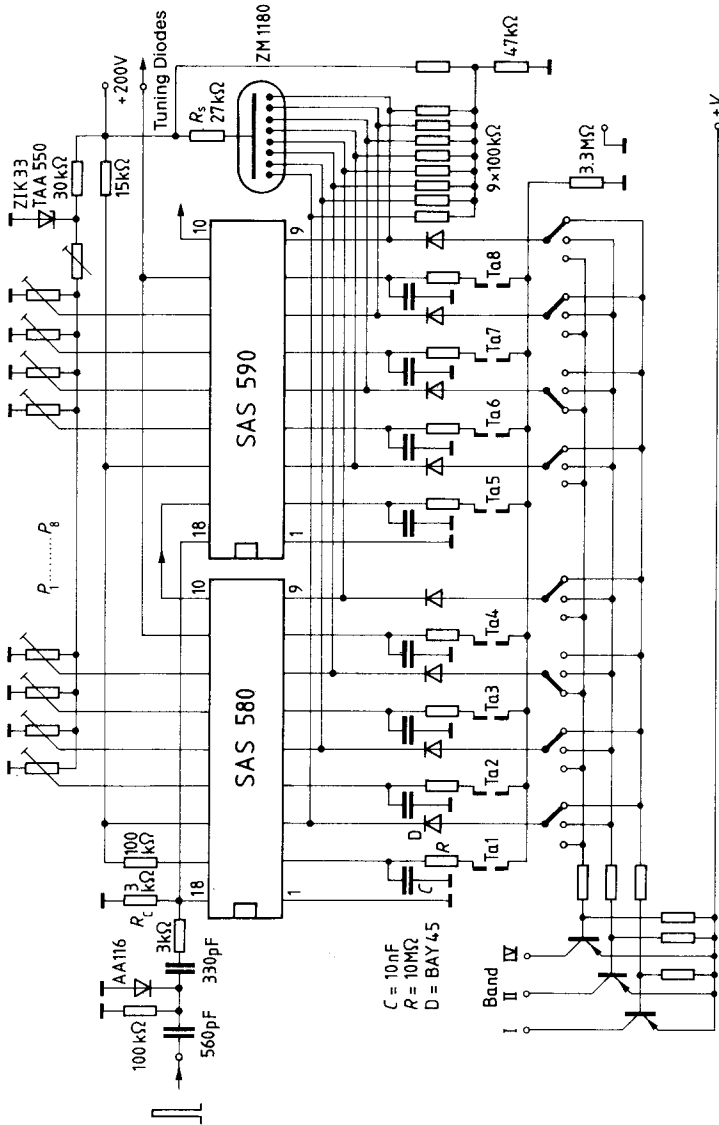


Figure 5

Application circuit 2

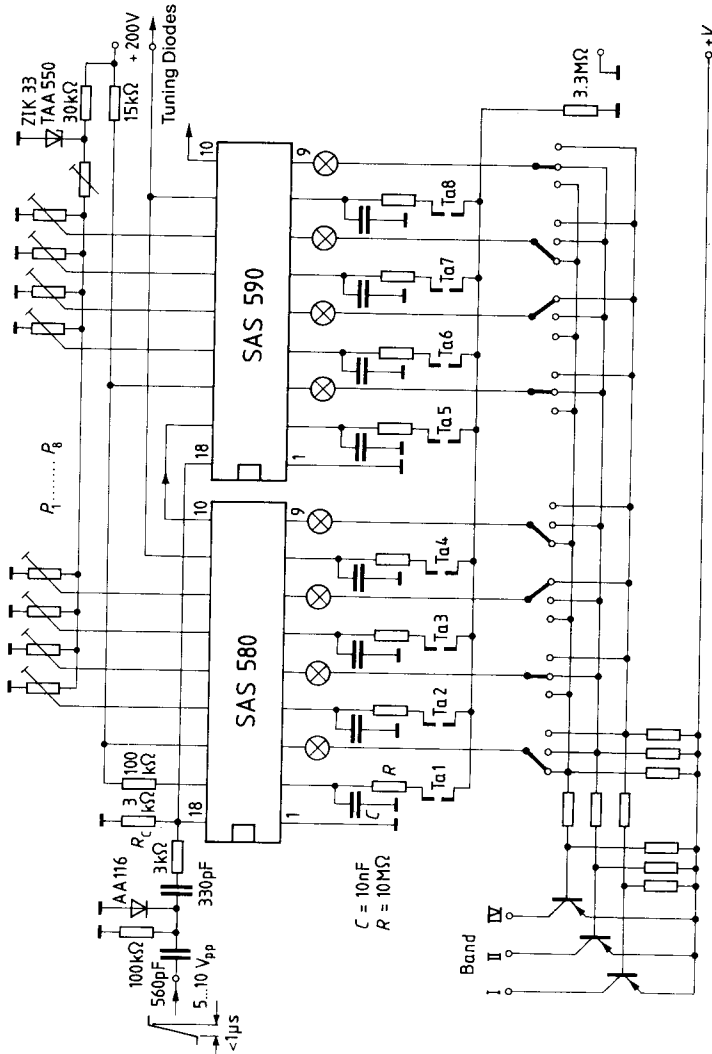


Figure 6