SWITCHING AMPLIFIERS FOR 4-CHANNEL TOUCH TUNING

- HIGH INPUT SENSITIVITY WITH GUARANTEED MIN./MAX. LIMITS
- HIGH NOISE IMMUNITY
- LOW SATURATION VOLTAGE AND TEMPERATURE DRIFT OF SWITCHING TRANSISTORS
- THE INDICATING OUTPUTS (E. G. LAMPS) PROVIDE HIGH LOAD CURRENT
- MINIMUM OF EXTERNAL COMPONENTS
- STANDBY FEASIBILITY

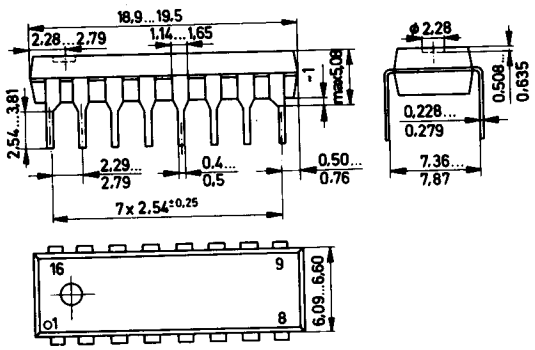
GENERAL DESCRIPTION – Electronic sensor switches (touch driven quadruple switch unity) for program selection of radio and television receivers, lift controls, test equipments etc. The function of a ring counter is possible by adding a few external components (C_R = 7.5 pF). In the test circuit shown in Fig. 2 the ring counter frequency range is between 0 and 3 kHz. (The voltage of the clock pulses is 10 V_{pp}. The pulse rise time is $\leq$10 µs.)
If sensor contacs (on chassis side and/or voltage side) are in contact with the mains phase, the noise voltage at the respective tuning output is lower than 8 mV (chassis grounded).
After simultaneous touching of several sensor contacts only one channel will remain switched on.
Differences in the supply-voltage rise times don't cause IC disturbance.
The selected programme is retained at voltage V_{IL} (Pin 8), turned off and voltage V_{IA} at Pin 7 = 17 V . . . 36 V (Standby operation).

NOTES TO SAS6600
SAS6600 incorporates a priority circuit which automatically causes the first stage to be activated when the equipment is initially switched on, independently of the rise time of the two supply voltages.

NOTES TO SAS6700
SAS6700 has incorporated four equivalent electronic switches.
Together with SAS6600 an eight-channel touch-controlled programme selector switch can be built. When switching-on the power supplies, channel No. 1 (SAS6600) is automatically selected. Each adding of a SAS6700 extendes the programme selector to 4 more switching stages.
The pins No. 2 of the IC's are to connect with one another.

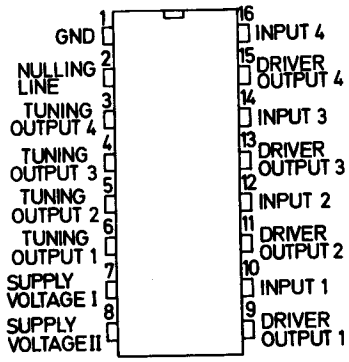
PACKAGE OUTLINE

(P) 9B-E 16-Lead Molded Dual In-line



CONNECTION DIAGRAM

(TOP VIEW)



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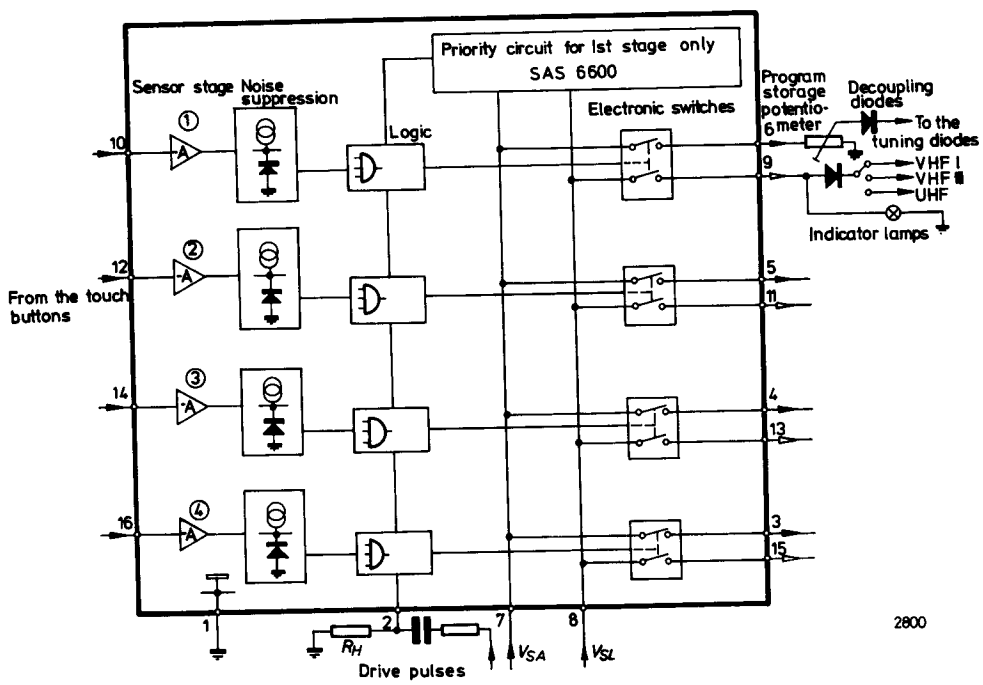
BLOCK DIAGRAM



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ABSOLUTE MAXIMUM RATINGS

Supply Voltage Ranges (Note 1)			
Tuning Voltage	Pin 7	V_{SA}	17 . . . 36 V
Indicator Voltage	Pin 8	V_{SL}	10 . . . 25 V
Supply Currents			
Tuning Current	Pin 7	I_{SA}	5.0 mA
Peak Tuning Current (Note 2)	Pin 7	I_{SAS}	8.0 mA
Open Loop Indicator Current	Pin 8	I_{SLO}	6.0 mA
Indicator Current of one Output, V_{SL} = 13.5 V	Pin 8	I_{SL}	55 mA
Peak Indicator Current, t ≤ 100 ms	Pin 8	I_{SLS}	250 mA
Power Dissipation, T_A = 25°C		P_{tot}	440 mW
Ambient Temperature Range		T_A	0 . . . +70°C
Storage Temperature Range		T_{stg}	–25 . . . +125°C

NOTES
(1) Voltages are with respect to the ground pin (pin 1).
(2) Discharge of capacity 1 µF through 5 kΩ.

THERMAL RESISTANCE

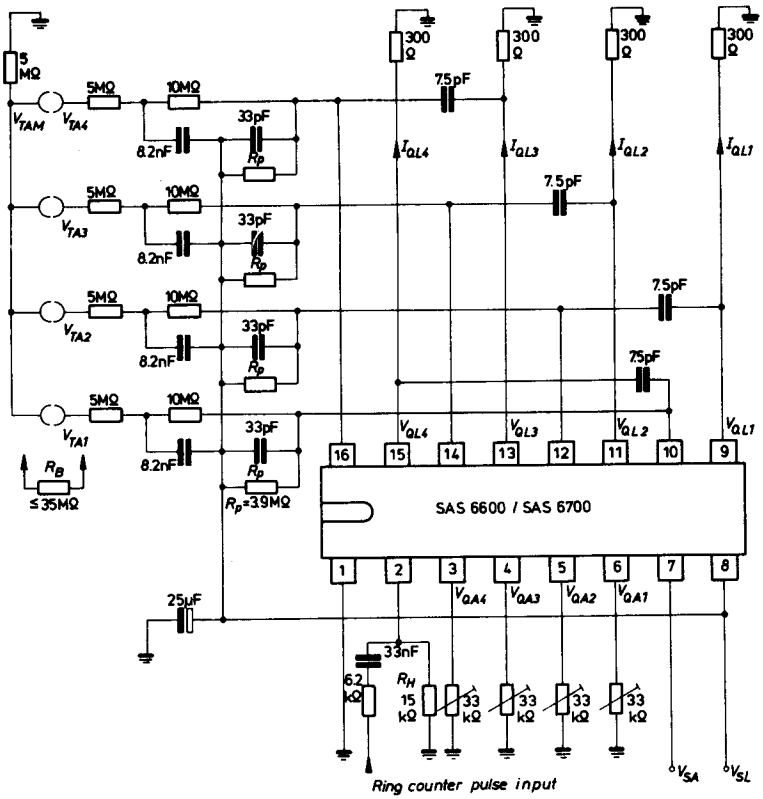
Junction Ambient	R_{thja}	200°C/W

ELECTRICAL CHARACTERISTICS (R_H = 15 kΩ ± 10%, see Test Circuit)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNITS
Current of a Blocked Tuning Output V_{SA} = 33 V, R_A = 33 kΩ	Pin 3, 4, 5, 6	I_{QAoff}			5.0	µA
Current of a Blocked Indicating Output V_{IL} = 13.5 V, R_L = 300 Ω	Pin 9, 11, 13, 15	I_{QLoff}			100	µA
Switching Sensitivity for Sensor "on" V_{SA} = 33 V, V_{SL} = 13.5 V, R_p = 3.9 MΩ ± 10%		I_{ITA}	20		250	nA
Holding Voltage at Sensor Touch after Sensor Touch	Pin 2	 V_{RH} V_{RH}	 6.0 5.0		 7.0 5.6	 V V
Changing of the Current I_{SA} between Holding Position and Sensor Touch	Pin 7	ΔI_{SA}			0.3	mA
Current Supply at Holding Position		I_{SAH}	2.8	3.5	5.0	mA
Current Supply Deviation	Pin 7	ΔI_{SA}			1.0	mA
Saturation Voltage of the Tuning Voltage Switches I_{QA} = 1 mA	Pin 3, 4, 5, 6	$V_{SA} - V_{QA}$			250	mV
Temperature Drift of Saturation Voltage of Tuning Voltage Switches T_A = 10 . . . 55°C Reference Point Pin 7	Pin 3, 4, 5, 6	$\frac{\Delta(V_{SA} - V_{QA})}{\Delta t}$			0.5	mV/°C
Saturation Voltage of the Indicating Voltage Switches I_{QL} = 55 mA Reference Point Pin 8	Pin 9, 11, 13, 15	$V_{SL} - V_{QL}$			1.35	V
Voltage Difference between the Single Indicating Outputs $I_{QL1} = I_{QL2} = I_{QL3} = I_{QL4}$	Pin 9, 11, 13, 15	ΔV_{QL}			0.6	V
Noise Immunity Toward Mains Influence f_{Br} = 50 Hz $V_{TA1,2,3,4}$ = 220 V V_{TAM} = 220 V	 Pin 3, 4, 5, 6 Pin 3, 4, 5, 6	 k_{SVR} k_{SVR}			 8.0 8.0	 mV mV

NOTES
(1) Voltages are with respect to the ground pin (pin 1) unless otherwise specified.
(2) The two touch buttons of a switched-on sensor stage can be connected by $R_B \leq 35$ MΩ.

TEST CIRCUIT



NOTE
Supply voltage must be disconnected before inserting the integrated circuit in the socket.

SCHEMATIC DIAGRAM