SGS-THOMSON MICROELECTRONICS

UAA4000

REMOTE CONTROL TRANSMITTER

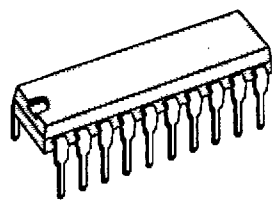
- ULTRASONIC OR INFRA-RED TRANSMISSION
- DIRECT DRIVE FOR ULTRASONIC TRANSDUCER
- DIRECT DRIVE OF VISIBLE LED WHEN USING INFRA-RED
- VERY LOW POWER REQUIREMENTS
- PULSE POSITION MODULATION GIVES EXCELLENT IMMUNITY FROM NOISE AND MULTIPATH REFLECTIONS
- SINGLE POLE KEY MATRIX
- SWITCH RESISTANCE UP TO 1kΩ TOLERATED
- FEW EXTERNAL COMPONENTS
- ANTI-BOUNCE CIRCUITRY ON CHIP

QUICK REFERENCE DATA

- POWER SUPPLY : 9 V, STANDBY 6 µA, OPERATING 8 mA
- MODULATION : PULSE POSITION WITH OR WITHOUT CARRIER
- CODING : 5 BITS WORD GIVING A PRIMARY COMMAND SET OF 32 COMMANDS
- KEY ENTRY : 8 x 4 SINGLE POLE KEY MATRIX
- DATE RATE : SELECTABLE 1 BIT/SEC TO 10 K BIT/SEC
- CARRIER FREQUENCY : SELECTABLE 0HZ (no carrier) TO 200kHz

DESCRIPTION

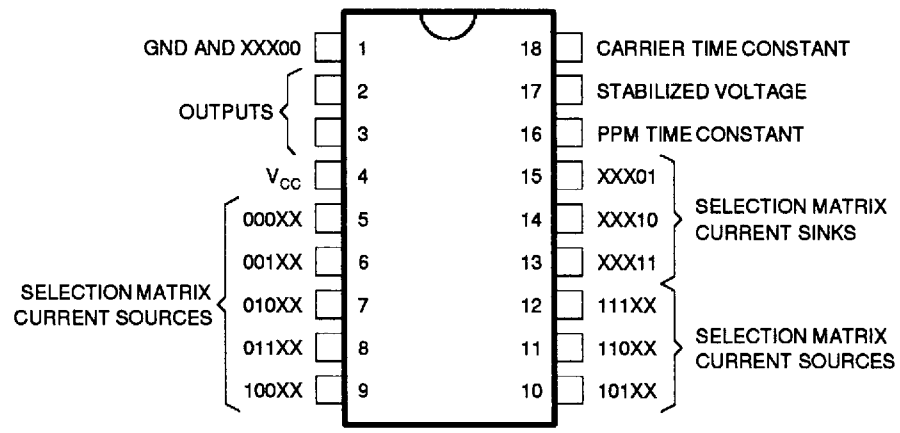
The UAA4000 is an easily expandable, 32 command, pulse position modulation transmitter drawing zero standby current.



DIP18
(Plastic Package)

ORDER CODE : UAA4000

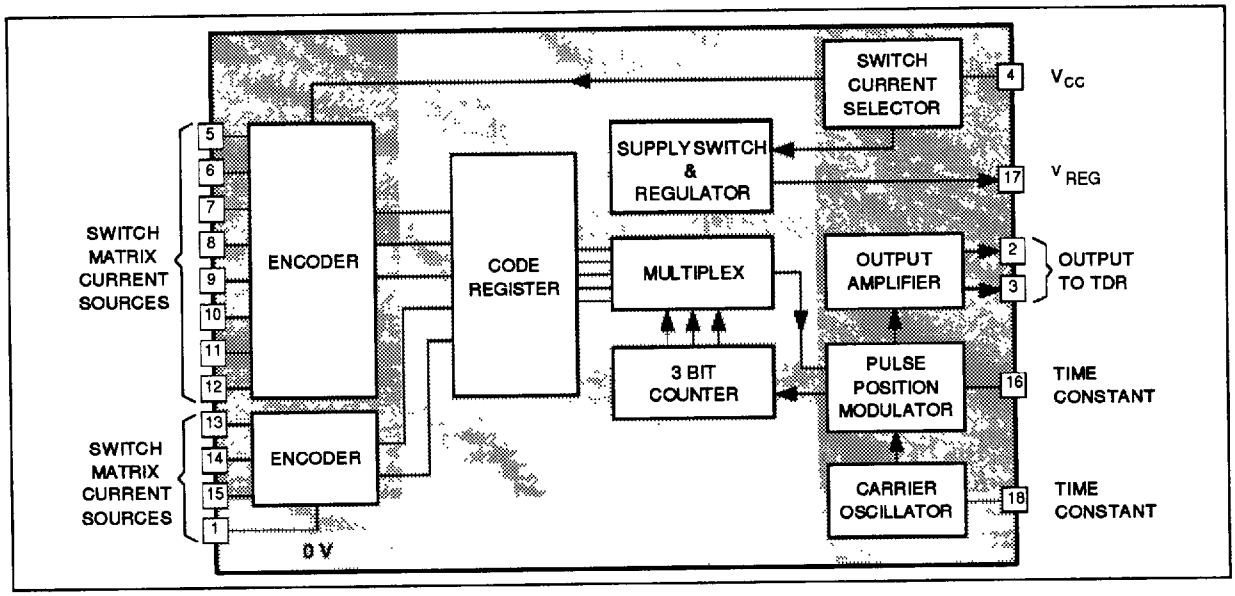
PIN CONNECTIONS



4000-01.EPS

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BLOCK DIAGRAM



ABSOLUTE MAXIMUM RATINGS

Symbol	Parameter	Value	Unit
V_{CC}	Supply Voltage (Pin 4)	11	V
P_{tot}	Maximum Power Dissipation	600	mW
I_C	Maximum Output Current (Pin 3)	5	mA
T_{oper}	Operating Temperature Range	− 10, + 65	°C
T_{stg}	Storage Temperature Range	− 55, + 125	°C

4000-01 TBL

THERMAL DATA

Symbol	Parameter	Value	Unit
$R_{th(j-a)}$	Junction-ambient Thermal Resistance	70	°C/W

4000-02.TBL

ELECTRICAL CHARACTERISTICS T_{amb} = 25°C, V_{CC} = 9V, f_o = 40kHz, t_1 = 18ms 4.7µF Capacitor on Pin 17 (unless otherwise specified) (see test circuit next page)

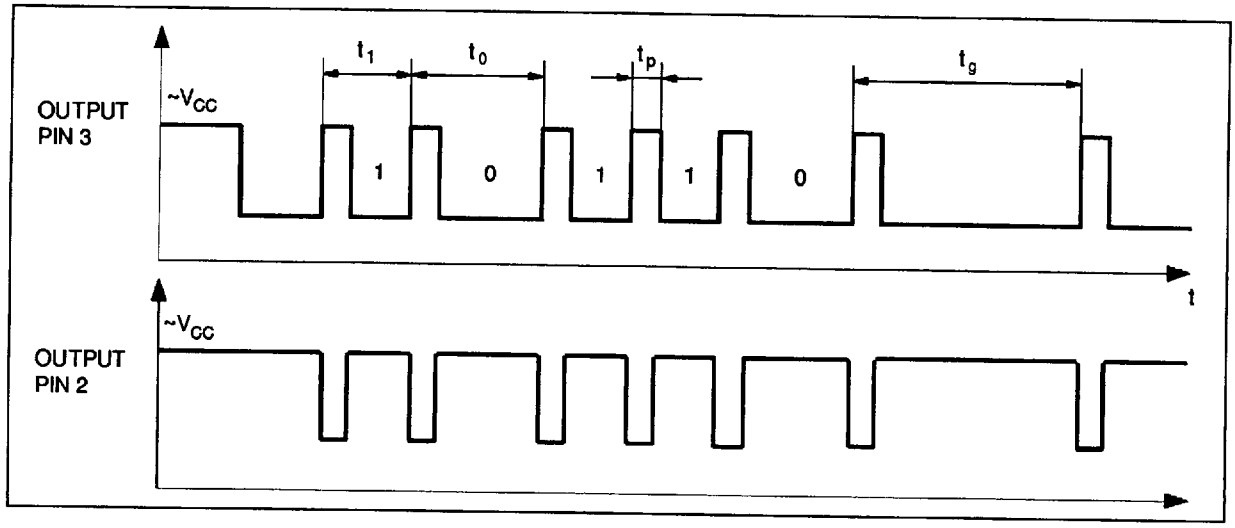
Symbol	Parameter	Pins	Min.	Typ.	Max.	Unit
V_{CC}	Operating Supply Voltage	4	7	9	11	V
	Operating Supply Current	4		8	16	mA
	Standby Supply Current	4			30	µA
	Stabilized Voltage	17	3.9	4.2	4.5	V
	Output Current Available	17			1	mA
	Output Voltage Swing (unloaded)	2, 3		8	V_{CC}	V
	Output Current (peak value)	2,3			5	mA
	External Switch Resistance				1	kΩ
	External Switch Closing Time		6			ms
	External Carrier Oscillator (R2 required, C_2 = 680pF)	18	20	40	80	kΩ
	External PPM Resistor (R1 required, C_1 = 0.68µF)	16	15	30	60	kΩ
	Ratio t0/t1	2, 3	1.4	1.5	1.6	
t_p	Pulse Width	2, 3	2	3	4	ms
t_g	Inter-word Gap	2, 3	50	54	58	ms

4000-03 TBL

SGS-THOMSON MICROELECTRONICS

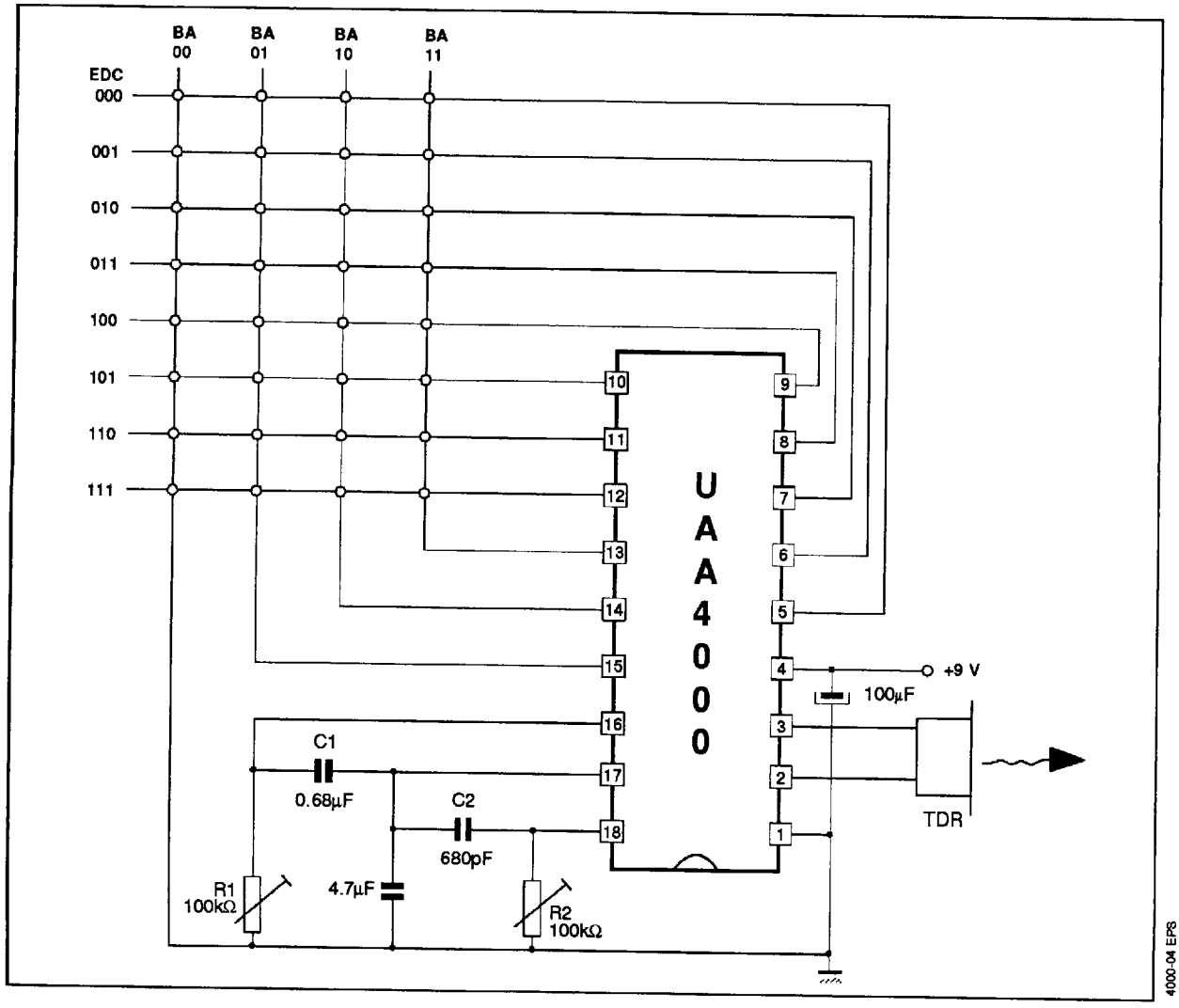
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OUTPUT WAVEFORMS (PPM word notation)



APPLICATION CIRCUITS

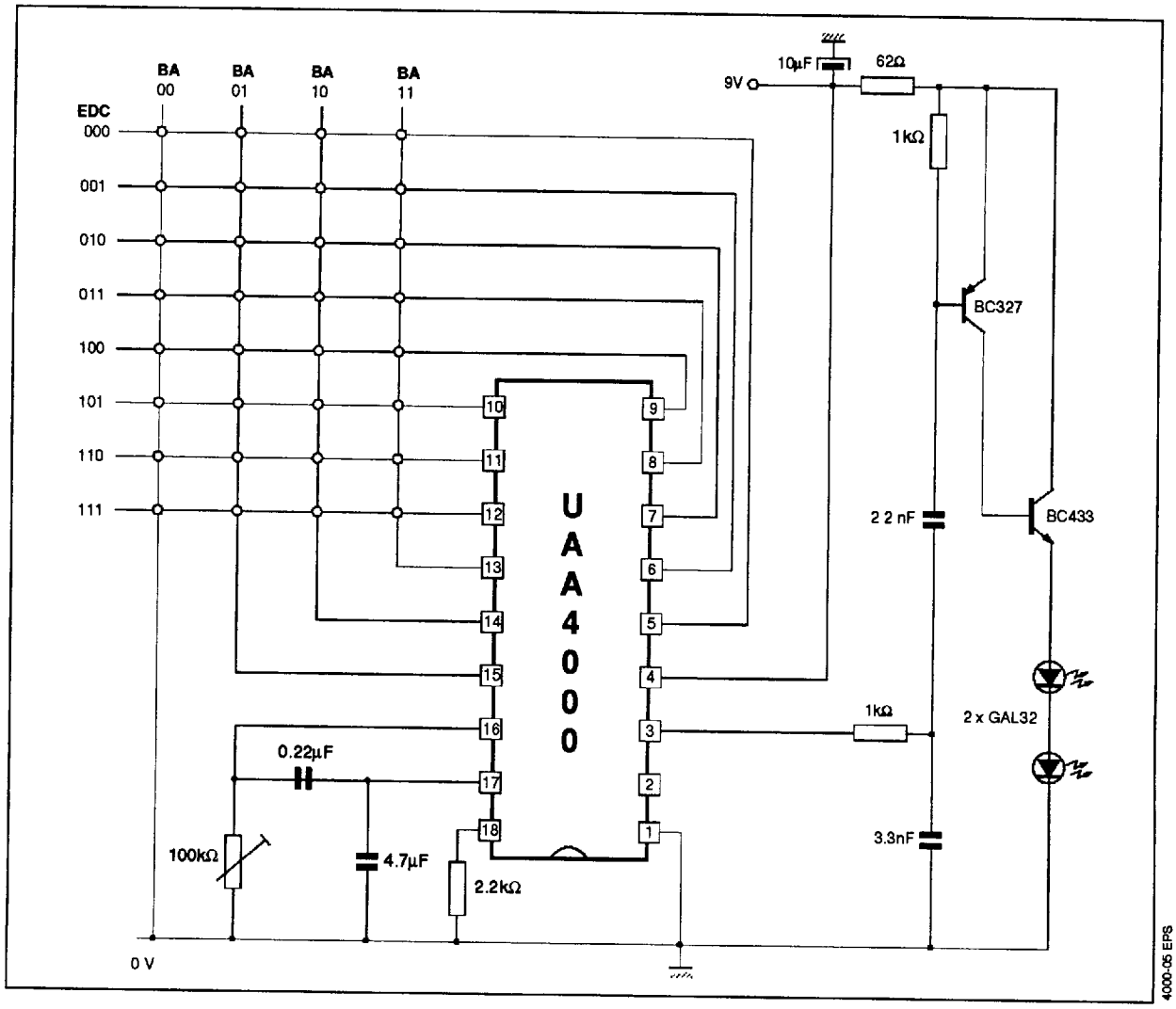
TEST AND ULTRASONIC APPLICATION CIRCUIT



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APPLICATION CIRCUITS (continued)

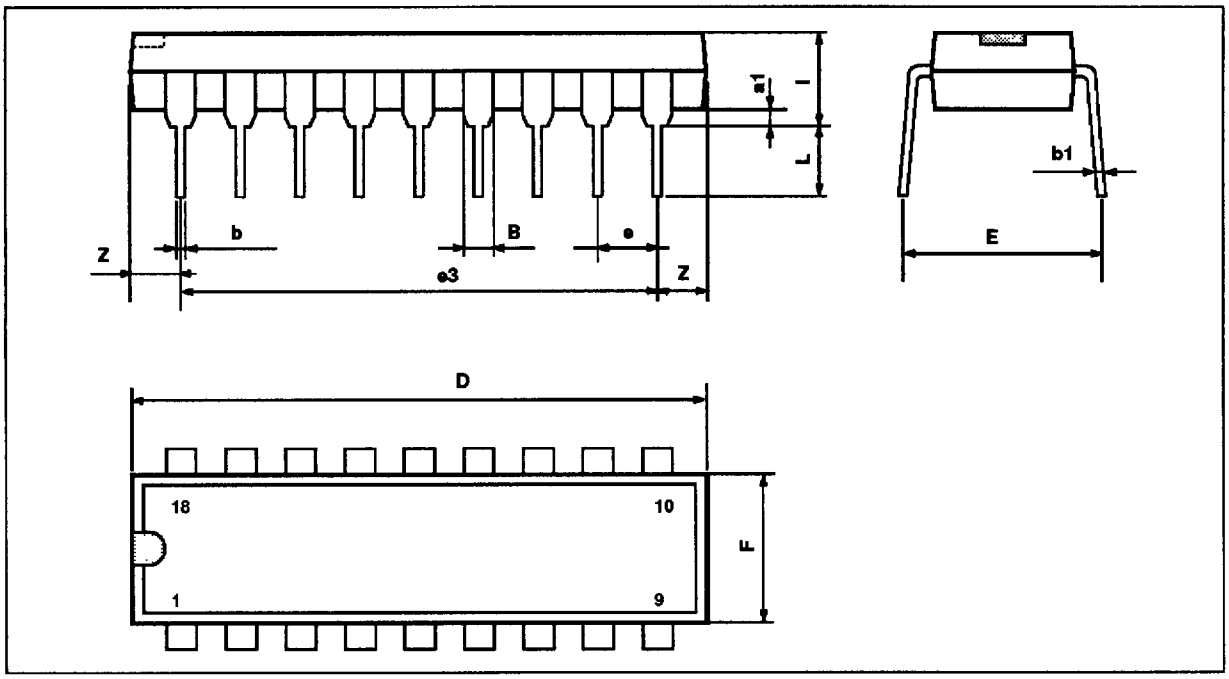
INFRARED APPLICATION CIRCUIT



SGS-THOMSON MICROELECTRONICS

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PACKAGE MECHANICAL DATA
18 PINS - PLASTIC DIP



PM-DIP18.EPS

Dimensions	Millimeters			Inches		
	Min.	Typ.	Max.	Min.	Typ.	Max.
a1	0.254			0.010		
B	1.39		1.65	0.055		0.064
b		0.46			0.018	
b1		0.25			0.010	
D			23.24			0.914
E		8.5			0.335	
e		2.54			0.100	
e3		20.32			0.800	
F			7.1			0.280
i			3.93			0.155
L		3.3			0.130	
Z		1.27	1.59		0.050	0.062

DIP18.TBL

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