



**P 4.1.6**

**Transistor circuits**

- P 4.1.6.1 Transistor as amplifier
- P 4.1.6.2 Transistor as switch
- P 4.1.6.3 Transistor as sine-wave generator (oscillator)
- P 4.1.6.4 Transistor as function generator
- P 4.1.6.5 Field-effect transistor as amplifier
- P 4.1.6.6 Field-effect transistor as switch

Transistor as amplifier (P 4.1.6.1)

Cat. No.	Description	P 4.1.6.1 (a)	P 4.1.6.1 (b)	P 4.1.6.2	P 4.1.6.3	P 4.1.6.4	P 4.1.6.5	P 4.1.6.6
576 74	Rastered socket panel DIN A4	1	1	1	1	1	1	1
578 67	STE transistor BD 137, NPN, emitter bottom	1	1	1				
578 76	STE transistor BC 140, NPN, emitter bottom				2	1		
578 762	STE transistor BC 140, NPN, emitter top					1		
578 77	STE FET transistor BF 244						1	1
577 44	STE resistor 1 kΩ, 2 W	1	1	1	2			
577 46	STE resistor 1.5 kΩ, 2 W					2		
577 56	STE resistor 10 kΩ, 0.5 W	1	1		3		1	1
577 58	STE resistor 15 kΩ, 0.5 W				2	2	1	
577 61	STE resistor 33 kΩ, 0.5 W						1	
577 64	STE resistor 47 kΩ, 0.5 W	1	1		2			1
577 657	STE resistor 68 kΩ, 0.5 W						1	
577 68	STE resistor 100 kΩ, 0.5 W				2		1	
577 76	STE resistor 1 MΩ, 0.5 W						1	
577 80	STE regulation resistor 10 kΩ, 1 W	1	1	1				
577 81	STE regulation resistor 4.7 kΩ, 1 W				2			
577 82	STE regulation resistor 47 kΩ, 1 W	1	1					
577 92	STE regulation resistor 1 kΩ, 1 W							1
578 02	STE photoresistor LDR 05			1				
578 06	STE PTC probe 30 W			1				
578 13	STE capacitor 0.22 μF, 250 V					1		
578 16	STE capacitor 4.7 μF, 63 V				2			
578 22	STE capacitor 100 pF, 630 V				2			
578 23	STE capacitor 220 pF, 160 V				3			
578 33	STE capacitor 0.47 μF, 100 V					1		
578 35	STE capacitor 1 μF, 100 V				2		2	
578 36	STE capacitor 2.2 μF, 63 V						1	
578 38	STE electrolytic capacitor 47 μF, 40 V	1	1				1	

Transistor circuits are investigated on the basis of a number of examples. These include the basic connections of a transistor as an amplifier, the transistor as a light-dependent or temperature-dependent electronic switch, the Wien bridge oscillator as an example of a sine-wave generator, the astable multivibrator, basic circuits with field-effect transistors as amplifiers as well as the field-effect transistor as a low-frequency switch.

Cat. No.	Description	P 4.1.6.1 (a)	P 4.1.6.1 (b)	P 4.1.6.2	P 4.1.6.3	P 4.1.6.4	P 4.1.6.5	P 4.1.6.6
578 39	STE electrolytic capacitor 100 μF, 35 V	1	1					
578 40	STE electrolytic capacitor 470 μF, 16 V	1	1			1		
578 41	STE electrolytic capacitor 220 μF, 35 V					1		
578 51	STE Si-diode 1 N 4007					2		
579 06	STE Lamp holder E10, top			1		2		
579 13	STE toggle switch, single-pole			1				
579 38	STE heating element, 100 W, 2 W			1				
501 48	Set of 10 bridging plugs	1	1	1	1	1	1	1
505 08	Set of 10 lamps E 10; 12 V/3 W			1				
505 19	Glow lamp E 10; 15 V/2.0 W					2		
522 621	Function generator S 12, 0.1 Hz to 20 kHz	1	1				1	1
521 485	AC/DC power supply 0...12 V, 230 V/50 Hz	1						
521 45	DC power supply 0...±15 V		1	1	1	1	1	1
575 211	Two-channel oscilloscope 303	1	1		1	1	1	1
575 24	Screened cable BNC/4 mm	2	2		2	2	2	2
531 120	Multimeter LDanalog 20			2	1	1	1	1
501 28	Connecting lead, Ø 2.5 mm <sup>2</sup> , 50 cm, black				1	3	1	1
501 45	Pair of cables, 50 cm, red and blue	1	1	4	2	1	2	2
501 451	Pair of cables, 50 cm, black	1	1					