Q17 Power Transistors Selection Table

Pair of transistors for the driver stage.

Minimum Vds = 150V, same Vgs(th) range (4V), close transductance (Gfs)

Q7 v1.4.0

	Minimum default config										Caculated (RCiss filter)				Final resistor values (scope)						
Config D1	DEFAULT		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz			OK	Comment
	Q5	P	EOL	FQP3P20	6	1.23	190	100		8,38	104,7		8		100		8			Yes	Original config
	Q6	N	EOL	FQP3N30	7	1.75	75		100	21,22		265,25	8			120	8				

Config D2	LIVE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz			OK	Comment
	Q5	P		FQPF7P20	25	3.5	770	100		2,06	93,95		2,2		100		2,2			Yes	Small oscillation at clip (Q6).
	Q6	N	EOL	2SK3564	17	2.6	700		100	2,27		103,34	2,2			100	2,2				

Config D3	TESTED		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz			OK	Comment
	Q5	P		FQPF7P20	25	3.5	770	100		2,06	93,95		2,2		100		2,2			Yes	
	Q6	N		FQPF3N80C	16.5	3	705		100	2,25		108,55	2,2			100	2,2				Overshoot with config S2.

	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz			OK	Comment
	Q5	P		IRF9610	11	0.9	170	100		9,36	98,54		9,5								
	Q6	N		IRF610	8.2	0.8	140		100	11,36		119,66	9,5								

	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz			OK	Comment
	Q5	P		IRFI9620G	15	1,3	340	100		4,68	99,59		4,7								
	Q6	N		IRFI620G	14	1.5	260		100	6,12		130,24	4,7								

Pair of transistors for the output stage.

Minimum Vds = 150V, same Vgs(th) range (4V), close transductance (Gfs) and Qg.

Config S1	DEFAULT		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR -dBu	OK	Comment	Subjective sound review
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	0,012	86,8	Yes	Original config	
	Q16	P	n.a	FQA36P15	105	19.5	2550		330	189,13		328,49	190			330	190					

Config S2	ON TEST		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment	Subjective sound review
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	0,013	87,1	Yes	Overshoot with config D3.	
	Q16	P		IXTH48P20P	103	32	5400		330	89,31		155,12	190			330	190				Need R15=150R to remove overshoot.	

Config S5	ON TEST		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment	Subjective sound review
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	0,012	91,1	Yes	Tested with config D2.	
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190			330	285				With R10/R13=8.2R/8.4R	

Config S4	ON TEST		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment	Subjective sound review
	Q15	N		IXTQ36N30P	70	22	2250	330		214,35	372,29		190		374		190	0,022	87.2 dB	Yes	Tested with config D2.	
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190			160	320				Need R15=160R to remove overshoot.	

Config S3	ON TEST		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		IXTQ50N20P	70	23	2720	330		177,31	307,96		190		300		190	0,017	87.3	Yes	48v max. Tested with config D2.
	Q16	P		IXTQ52P10P	60	20	2845		330	169,52		294,43	190			170	330				Need R15=170R to remove overshoot.

	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		IXTQ50N20P	70	23	2720	330		177,31	307,96		190								
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190								

	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		IXFH50N85X	152	32	4480	330		107,65	186,97		190								
	Q16	P		IXTH48P20P	103	32	5400		330	89,31		155,12	190								

	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		IRFP240	70	6.9	1300	330		370,99	644,35		190								
	Q16	P		IRFP9240	44	9.4	1200		330	401,90		698,04	190								

	SIM NOT WORKING		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		ECX10N20		1	500	330		964,57	1675,31		190								
	Q16	P		ECX10P20		1.5	500		330	964,57		1675,31	190								

	SIM NOT WORKING		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	THD+N %	SNR dBu	OK	Comment
	Q15	N		ECW20N20		8	900	330		535,87	930,73		190								
	Q16	P		ECW20P20		3	1850		330	267,93		452,78	190								

Pair of transistors for op-amp power supply

Minimum Vds = 60V, same Vgs(th) range (4V)

Config A1	DEFAULT		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R40	R41	Freq MHz	R40	R41	Freq MHz		R40	R41	Freq MHz			OK	Comment
	Q1	N		IRF610		0.8	140	100		11,36	126,31		9		120		9				Original config
	Q4	P		IRF9610		0.9	170		100	9,36		104,02	9			100	9				