Q17 Power Transistors Selection Table

Pair of transistors for the driver stage.

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

Q7 v1.3.6

	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	Yes	
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	Yes	
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	Yes	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)

Config S1	DEFAULT		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	Yes	Original config
	Q16	P	n.a	FQA36P15	105	19.5	2550		330	189,13		328,49	190			330	190	Yes	
Config S2	LIVE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	Yes	Overshoot with config D3. Ok with D1, D2
	Q16	P		IXTH48P20P	103	32	5400		330	89,31		155,12	190			150	190	Yes	Need R15=150R to remove overshoot.
Config S5	TESTED		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		FQA46N15	110	36	2500	330		192,92	335,06		190		330		190	Yes	Tested with config D2.
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190			180	285	Yes	Need R15=180R to remove overshoot.
Config S6	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		IXTQ50N20P	70	23	2720	330		177,31	307,96		190		300		190		
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190			270	190		
Config S4	CANDIDATE		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		IXTQ36N30P	70	22	2250	330		214,35	372,29		190		374		190		
	Q16	P		IXTQ36P15P	55	19	3100		330	155,57		270,21	190			270	190		
Config S3	TESTED		Status	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	OK	Comment
	Q15	N		IXTQ50N20P	70	23	2720	330		177,31	307,96		190		300		190	Yes	48v max. Tested with config D2.
	Q16	P		IXTQ52P10P	60	20	2845		330	169,52		294,43	190			170	330	Yes	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	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	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	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	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		