Q17-Mini 3.0 Power Transistors Selection Table

Pair of transistors for the driver stage.

	Minimum Vd	is = 150V	, same V	gs(th) range (4	IV), close t	transduc	tance (Gfs								or transistors i									Q7 v1.5.1	•
	DEFAULT		Chahus	Parts			ult config	Vgs Volt	D.7	no	Freq MHz	D.	Cacu	lated (RCi	ss filter) Freq MHz	D.	Final re		es (scope) Frea MHz				OK	Comment	
Config D1		P	EOL		Qg nC	6 1.2		0	100	K8	8.38	K	104.7	K8	Freq IVIHZ	K.	100	К8	Freq IVIHZ						
	Q6	N	EOL	FQP3N30	7	7 1.7	75	75	100	100	21,22		20-1,7	265,25	8		100	255	8				Yes	Original config	
	1						-	-																	-
Config D2	TESTED OK		Status	FOPE7P20	Qg nC	Gfs S	ie Ciss pF	Vgs Volt	R7	R8	Freq MHz	R	7 02.05	R8	Freq MHz	R:	100	R8	Freq MHz				OK	Comment	
Connig D2	Q5 Q6	, P	FOL	2SK3564	17	7 2	.6 7	00	100	100	2,00		95,95	103.34	2,2	\vdash	100	100	2,2				Yes	Oscillation at 32V output with Q17-Turbo & S5.	
	-							-							_,_				-,-						-
	TESTED OK		Status	Parts	Qg nC	Gfs S	ie Ciss pF	Vgs Volt	R7	R8	Freq MHz	R	7	R8	Freq MHz	R	7	R8	Freq MHz				OK	Comment	
Config D3	Q5	P		FQPF7P20	16.5	5 3	.5 7	70	100	100	2,06		93,95	100 55	2,2	 	100	100	2,2				Yes	Good with Q17-Turbo v2 & S5 Overshoot with config S2	
	Цō	1 15		FUPFSNOUC	. 10.5)	3 /	J5		100	2,23			100,55	2,2			100	2,2					Overshoot with coming 52.	ı
	TESTED		Status	Parts	Qg nC	Gfs Sie	Ciss pF	Vgs Volt	R7	R8	Freq MHz	R	7	R8	Freq MHz	R	7	R8	Freq MHz				OK	Comment]
Config D4	Q5	P		IRF9610	11	_	-	-	100		9,36	$\sqcup \bot$	98,54		9,5		100		9				Yes	The square signals are a little less nice	
	Q6	N		IRF610	8.2	2 0	.8 1	10		100	11,36			119,66	9,5			120	9					than with D2 configurations.	I
	CANDIDATE		Status	Parts	Qg nC	Gfs S	ie Ciss pF	Vgs Volt	R7	R8	Freq MHz	R	7	R8	Freq MHz	R	7	R8	Freq MHz				ОК	Comment	1
	Q5	P		IRF19620G	15				100		4,68		99,59		4,7										
	Q6	N	l I	IRFI620G	14	4 1	.5 2	50		100	6,12			130,24	4,7										
														Pair	of transistors f	or the or	utnut stad	70							
	Minimum Vd	is = 150V	, same V	gs(th) range (4	1V), close t	transduc	tance (Gfs	, Vgs(th) = lo	oaded @ 1	8V170mA				· an C				,							
	DEFAULT		Status	Parts	Qg nC	Gfs Sie	Ciss pF	Vgs Volt	R14	R15	Freq KHz	R	14	R15	Freq KHz	R:	14	R15	Freq KHz	R10-R13 (R)		SNR -dBuA	OK	Comment	Subjective sound review
Config S1	Q15 Q16	N	EOL		110	0 3	36 25	00 4.1	330	220	192,92 189.13		335,06	328.49	190		330	220	190 190	9.1	0,011	90,9	Yes	Original config	Good sound.
Q16 P n.a FQA36P15 105 19.5 2550 3.7 330 189,13 328,49 190 330 190 100 100 100 100 100 100 100 100 10													Well balanced sound.												
	TESTED		Status	Parts	Qg nC	Gfs Sie	Ciss pF	Vgs Volt	R14	R15	Freq KHz	R	14	R15	Freq KHz	R:	14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	Subjective sound review
Config S2		N		FQA46N15					330	·	192,92		335,06		190		330		190	9.1	0,017	88,2	No	Q14=3.6V, Q16=-3.8V - Bad spectrum.	Good sound.
	Q16	P	1	IXTH48P20P	103	3 3	32 54	00 4.2	1	330	89,31	\vdash		155,12	190			150	190					With R10/R13=8R2 consume 400mA.	Low frequency drier than S5.
	TO TEST		Status	Parts	Qg nC	Gfs Sie	Ciss pF	Vgs Volt	R14	R15	Freq KHz	R	14	R15	Freq KHz	R	14	R15	Frea KHz	R10-R13 (R)	THD %	SNR -dBuA	ОК	Comment	Subjective sound review
Config S3	Q15	N		IXTQ50N20I					330		177,31		307,96		190					9.1				48v max.	
	Q16	P		IXTQ52P10P	60	0 2	20 28	15		330	169,52			294,43	190					5.1				Good to try at 35-40V.	
	TESTED		Status	Parts	Og nC	Gfs Sie	Ciss pF	Vgs Volt	R1/I	R15	Freg KHz	P	14	R15	Freg KHz	D.	14	R15	Freg KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	Subjective sound review
Config S4		N	Julia	IXTQ36N30I		0 2	22 22		330)	214,35		372,29	KIJ	190	11.	374	KIJ	190		0,022	87.2 dB		Q14=3.6V, Q16=-3.8V	Good sound.
	Q16	P		IXTQ36P15P	55	5 1	19 31	00 4.1		330	155,57			270,21	190			270	190	8.2			No	With R10/R13=9R1 ou 8R2 - Bad spectrum.	Low frequency less controlled than S5.
	TECTED OF		Chahus	Doubo	loc	Cfe Cie	Cian ar	Vac Valk	D14	Intr	Freg KHz		14	D1F	Freg KHz	l lo	14	D1F	Freg KHz	R10-R13 (R)	THD %	CNID JDA	ОК	I Commont	Subjective sound review
Config S5	015	N	EOL	FOA46N15	110	0 3	36 25	00 4.1	330)	192.92	I.	335.06	KIS	190	N.	330	K15	190		0.011	91.1		O15/O16 well balanced (3.6V).	Good sound.
	Q16	P		IXTQ36P15P	55	5 1	19 31	00 4.1		330	155,57			270,21	190			270	190	8.2			Yes	With R10/R13=8R2. Good spectrum.	Well balanced sound.
							Ta: -													(=\				I a .	1
	CANDIDATE Q15	N		Parts IXTQ50N20I				Vgs Volt	R14 330		Freq KHz 177,31		14 307,96		Freq KHz 190	R.	14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	1
	Q16	P		IXTQ36P15P						330			,	270,21						9.1					1
				-		1				1														T-	- 1
	CANDIDATE Q15			Parts IXFH50N85X			2 Ciss pF 32 44	Vgs Volt	R14 330		Freq KHz 107,65		14 186,97		Freq KHz 190		14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	
	Q16	P		IXTH48P20P			32 54		330	330			100,57	155,12						9.1					
																									1
	CANDIDATE Q15	N	Status	IRFP240	Qg nC			Vgs Volt	R14 330	R15	Freq KHz 370.99		14 644,35	R15	Freq KHz 190	R:	14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	
	Q16	P		IRFP9240	44				330	330	401,90		044,33	698,04						9.1					i
																									<u>.</u>
	SIM NOT WO	ORKING N			Qg nC	Gfs Sie		Vgs Volt			Freq KHz			R15	Freq KHz	R:	14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	
	Q15 Q16	P		ECX10N20 ECX10P20	-	1	.5 5		330	330	964,57 964,57		1675,31	1675,31	190 190	\vdash				9.1					
																								•	<u>.</u>
	SIM NOT WO					Gfs Sie		Vgs Volt		R15	Freq KHz		14	R15	Freq KHz	R:	14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	
	Q15 Q16	N P		ECW20N20 ECW20P20			8 9 3 18		330	330	535,87 267,93		930,73	452,78	190 190	\vdash				9.1					
	QIO	- '	-	LCW20120		1	J ₁ 10	, o	1	330	201,55			432,70	130	L									ı
														Pair of t	ransistors for	op-amp	power su	pply							
	Minimum Vd DEFAULT	ls = 60V,	same Vg	s(th) range (4\ Parts	/)	Cfo Cio	Ciss pF	Vgs Volt	D40	D41	Freq MHz	D	40	R41	Freq MHz	D.	40	R41	Freq MHz	Zener Volt			OV	Comment	1
Config A1	O1	N	Status	IRF610	Qg nC	2 0	.8 1	10	100	K41	11.36		126,31	K41	rreq ivinz	IK.	100	K41	rreq ivinz						
	Q4	P		IRF9610	11	1 0	.9 1	70		100	9,36		,	104,02	9			100	9	18			Yes	Original config	
					-																			1-	- 1
Config A2	TESTED (SMI Q1'	D)	Status	Si2308BDS	Qg nC 6.8	Gfs Sie	Ciss pF		R40 100	R41	Freq MHz 8,37		40 104,70	R41	Freq MHz	R	100	R41	Freq MHz	Zener Volt				Comment Need 16V zener 1N5246B to get 13.5V.	-
Coming AZ	Q1 Q4'	P	1	Si2309CDS	4.1	_			100	100	7,57	+	104,70	94,73	8	++	100	100	8	16			Yes	Source-Gate = 2.15V	1
																									•
Confin A2	TESTED (SMI	D) .	Status	Parts		Gfs Sie	Ciss pF	Vgs Volt	R40	R41	Freq MHz	R	100.24	R41	Freq MHz	R	100	R41	Freq MHz	Zener Volt			OK	Comment	-
Config A3	Q1' Q4'	P	+	DMN6075S0		3 n 4 n	.a 6	12	100	100	2,62 3.10	+	100,34	119.55	2,6	\vdash	100	100	2,6	16			Yes	Need 16V zener 1N5246B to get 13.5V. Source-Gate = 1.6V	1
	15.																'								<u>.</u>
	TESTED OK (Parts	Qg nC	Gfs Sie				R41	Freq MHz	R	40	R41	Freq MHz	R		R41	Freq MHz	Zener Volt			OK	Comment	1
Config A4	Q1'	N	1	SI2328DS		2 2	4 1	10	100	100	10,61	\vdash	350	100	3	\vdash	100	100	10	15			Yes	Need 15V zener 1N5245B to get 13V. Source-Gate = 1.6V	1
	Ų4	P	1	31232505	12	2 2	.2 5	LU	<u> </u>	100	5,12			100	3			100	3					Source-Odite = 1.0V	J