Q17-Mini 3.0 Power Transistors Selection Table

Pair of transistors for the driver stage.

	Minimum Vds =	150V. same	Vgs(th) range (4V)	. close t	ransductar	nce (Gfs)					Р	air of transis	tors for	r the driver	stage.						Q7 v1.4.9	
	Minimum Vds = 150V, same Vgs(th) range (4V), close transductance (Gfs) Minimum default config								Caculated (RCiss filter)				Final re	Final resistor values (scope)						Q, 11.113]		
	DEFAULT		tus [Parts	Qg nC	Gfs Sie		R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz				OK	Comment	
Config D1	Q5	P EO		FQP3P20 FQP3N30	6	1.23	190	100	100	8,38	104,7	265.25	8	3	100	120	8				Yes	Original config	
	ЦБ	N E	JL I	-QP3N3U	/	1.75	/5		100	21,22		265,25	č	5		120	8						ı
	TESTED OK	Sta	tus I	Parts	Qg nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz				ОК	Comment	1
Config D2	Q5	Р	F	QPF7P20	25	3.5	770	100		2,06	93,95		2,2	2	100		2,2				Yes		
	Q6	N E	OL 2	2SK3564	17	2.6	700		100	2,27		103,34	2,2	2		100	2,2				163		
	TESTED	Sta		Doubo	0==0	Cfa Cia	Ciss pF	0.7	R8	Freq MHz	R7	R8	Freq MHz	1	R7	R8	Freq MHz	1			OV	Comment	1
Config D3	Q5	P		OPF7P20	25 25		770	100	Ro	2.06	93.95	Ro	2.2		100	Ro	2.2					Comment	
	Q6	N	F	QPF3N80C	16.5	3.3	705	100	100	2,25	33,33	108,55	2,2	2	100	100	2,2				Yes	Overshoot with config S2.	1
										, , , ,													_
	TESTED	Sta	tus I		9	Gfs Sie	оно р.	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz				OK	Comment	
Config D4	Q5	P N		RF9610	11		170	100	400	9,36	98,54	440.00	9,5	5	100	100	9				Yes	The square signals are a little less nice	
	Q6	N		RF610	8.2	0.8	140		100	11,36		119,66	9,5)		100	9					than with D2 configurations.	J
	CANDIDATE	Sta	tus f	Parts	Og nC	Gfs Sie	Ciss pF	R7	R8	Freq MHz	R7	R8	Freq MHz		R7	R8	Freq MHz				ОК	Comment	1
	Q5	P		RFI9620G	15		340			4,68	99,59		4,7										1
	Q6	N	ı	RFI620G	14	1.5	260		100	6,12		130,24	4,7	7									
Pair of transistors for the output stage. Minimum Vds = 150V, same Vgs(th) range (4V), close transductance (Gfs) and Qg.																							
	Minimum Vds =	150V, same		th) range (4V) Parts		Gfs Sie	nce (Gts) a	nd Qg.	R15	Freg KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	R10-R13 (R)	THD %	SNR "dRuA	Ok	Comment	Subjective sound review
Config S1	Q15	N	-us	FQA46N15	110	36	2500	330		192,92	335,06		190)	330		190		0,011	90,9			Good sound.
	Q16	P n	.a F	FQA36P15	105	19.5	2550		330	189,13		328,49	190)		330	190	9.1			Yes	Original config	Well balanced sound.
Courtie Co	TESTED	Sta	tus [Parts		Gfs Sie		R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	R10-R13 (R)		SNR -dBuA	OK	Comment	Subjective sound review
Config S2	Q15 Q16	N P	- I	QA46N15 XTH48P20P	110		2500	330	330	192,92	335,06	155 12	190)	330	150	190	9.1	0,017	88,2	No	Q14=3.6V, Q16=-3.8V - Bad spectrum. With R10/R13=8R2 consume 400mA	Good sound.
	410	151		A1114072UP	103	32	3400	1	330	, 09,31	-	133,12	190	1		150	, 190					WIGH NIO/NI3-ONZ CONSUME 400MA.	LOW Trequency uner clidit 35.
	TO TEST	Sta	tus I	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	ОК	Comment	Subjective sound review
Config S3	Q15	N		XTQ50N20P	70		2720	330		177,31	307,96		190)				9.1				48v max.	
	Q16	Р	ı	XTQ52P10P	60	20	2845		330	169,52		294,43	190)				9.1				Good to try at 35-40V.	
		1 1	. 1.			lar a: 1		1	1			I						R10-R13 (R)		SNR -dBuA			Ia
Config S4	TESTED Q15	N Sta	tus [Parts XTO36N30P	Qg nC	Gfs Sie	2250	R14	R15	Freq KHz 214.35	R14 372.29	R15	Freq KHz	,	R14	R15	Freq KHz	R10-R13 (R)		87.2 dB	OK	Comment Q14=3.6V, Q16=-3.8V	Subjective sound review Good sound.
Colling 34	Q16	P		XTQ36P15P	55		3100	330	330		372,29	270,21)	3/4	270	190	8.2	0,022	67.2 UB	No		Low frequency less controlled than S5.
	420		- "	X1Q301131		13	5100	1	330	133,37		270,21	130	-	I	270	130					Willing The State of the State	con requeries ress controlled than 55.
	TESTED OK	Sta	itus	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	Subjective sound review
Config S5	Q15	N	F	QA46N15	110	36	2500	330		192,92	335,06		190)	330		190	8.2	0,011	91,1	Yes	Q15/Q16 well balanced (3.6V).	Good sound.
	Q16	P	I	XTQ36P15P	55	19	3100		330	155,57		270,21	190)		330	285	0.2			103	With R10/R13=8R2. Good spectrum.	Well balanced sound.
	CANDIDATE	Sta	+115 [Darte	Og nC	Gfc Sig	Ciss pF	D14	R15	Freq KHz	R14	R15	Freq KHz	1	R14	R15	Eron VIII	R10-R13 (R)	TUD %	CND dDuA	OK	Comment	1
	O15	N Sta	itus i	XTQ50N20P	70 70	23		330	KID	177,31	307,96	KID	190		K14	K12	Freq KHZ		IND %	SINK -UDUA	UK	Comment	
	Q16	Р	ı	XTQ36P15P	55				330			270,21	190)				9.1					1
																							•
	CANDIDATE	Sta					Ciss pF		R15	Freq KHz		R15	Freq KHz		R14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	ОК	Comment	
	Q15	N P		XFH50N85X XTH48P20P	152 103				330	107,65 89.31	186,97	155,12	190					9.1					
	Q16	I P I	!	ATH46PZUP	103	32	5400	'	330	09,31		155,12	190	/	<u> </u>		1	1					J
	CANDIDATE	Sta	tus F	Parts	Qg nC	Gfs Sie	Ciss pF	R14	R15	Freq KHz	R14	R15	Freq KHz		R14	R15	Freg KHz	R10-R13 (R)	THD %	SNR -dBuA	ОК	Comment	1
	Q15	N	I	RFP240	70	6.9	1300			370,99	644,35		190)				9.1					
	Q16	P	I	RFP9240	44	9.4	1200		330	401,90		698,04	190)				9.1]
	SIM NOT WORK	NG C-	tuc I.	Darte	000	Cfc Ci-	Cies of	D14	R15	Freg KHz	R14	R15	Eron VII-	-	R14	R15	Eron VII-	R10-R13 (R)	TUD º/	CND do4	O۲	Comment	1
	Q15	NG Sta		ECX10N20	Qg nC	ais Sie	Ciss pF 500	R14 330	V12	964,57	1675,31	K12	Freq KHz 190		K14	V12	Freq KHz		שנחו %	SINK -GRNA	UK	Comment	1
	Q16	P		ECX10N20	t	1.5	500	330	330		2073,31	1675,31					1	9.1					1
																							•
	SIM NOT WORK				Qg nC		Ciss pF		R15	Freq KHz			Freq KHz		R14	R15	Freq KHz	R10-R13 (R)	THD %	SNR -dBuA	OK	Comment	
	Q15	N		CW20N20		8				535,87	930,73		190					9.1					
	Q16	Р	[E	CW20P20	<u> </u>	3	1850	L	330	267,93		452,78	190	7	<u> </u>		<u> </u>	l .					J
												Pair	of transistor	s for or	o-amp now	er supply							
	Minimum Vds =	60V, same	Vgs(th	n) range (4V)											,p pow								
	DEFAULT	Sta			Qg nC	Gfs Sie	Ciss pF	R40	R41	Freq MHz	R40	R41	Freq MHz		R40	R41	Freq MHz	Zener Volt			OK	Comment	
Config A1	Q1	N		RF610	8.2	0.8	140	100		11,36	126,31		9	9	100		9	18			Yes	Original config	
	Q4	Р	I	RF9610	11	0.9	170		100	9,36		104,02	9	9		100	9	18					J
	TESTED OK (SMI	O) Sta	tue Ir	Parts	Og nC	Gfs Sie	Cicc nE	R40	R41	Freq MHz	R40	R41	Freq MHz	1 1	R40	R41	Freq MHz	Zener Volt			OK	Comment	1
Config A2		N Sta		Si2308BDS	Ug nc 6.8		190	100	WAT	8,37	104,70	1191	r req iVITIZ	3	100	1.44.1	rieq ivinz	Zener voit				Need 16V zener 1N5246B to get 13.5V.	1
	Q4'	P		Si2309CDS	4.1		210	100	100	7,57	10.,70	94,73	8	3	100	100	8	16			Yes	Source-Gate = 2.15V	1
																							<u>.</u>
	TESTED OK (SMI					Gfs Sie		R40	R41	Freq MHz		R41	Freq MHz		R40	R41	Freq MHz				OK	Comment]
Config A3	Q1'	N		DMN6075SQ	12.3	n.a	606	100	1	2,62	100,34	410.5-	2,6	5	100		2,6	16			Yes	Need 16V zener 1N5246B to get 13.5V.	1
	Q4'	P	[DMPH6250S	4	n.a	512	<u> </u>	100	3,10		119,55	2,6	P		100	3	16				Source-Gate = 1.6V	J
	TESTED OK (SMI)) S+o	tus F	Parts	Og n€	Gfs Sie	Ciss pF	R40	R41	Freq MHz	R40	R41	Freq MHz		R40	R41	Freq MHz	Zener Volt			ОК	Comment	1
Config A4	Q1'	N N	9	SI2328DS	5	4	150	100		10,61	350		3	3	100		10	15				Need 15V zener 1N5245B to get 13V.	1
L -	Q4'	Р		Si2325DS	12	2.2	510		100	3,12		100	3	3		100	3	15			Yes	Source-Gate = 1.6V	1
				_	_			_											_	_	_		-