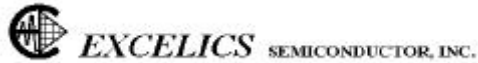


**Large Signal Model Parameters for Curtice-Cubic Model For Low Distortion GaAs Power FETs
(Curtice-Ettenburg Model)**

Parameter	Units	EFA018A	EFA025A		EFA040A		EFA060B	EFA080A		EFA120A	EFA120B	EFA160A	EFA240B	EFA240D	EFA480B	EFA480C	EFA720A	EFA960B	EFA1200A
BETA	1/V	0.0234	0		0		0	0		0	0	0	0	0	0	0	0	0	0
GAMMA	1/V	1.31	2.5		2		1.2	2		2	1.2	2	1.2	1.85	1.2	1.85	1.85	1.85	1.85
VOU0	V	3.9	2		2		2	2		2	2	2	2	2	2	2	2	2	2
VT0	V	-1.7	-2		-2		-2	-2		-2	-2	-2	-2	-2	-2	-2	-2	-2	-2
A0	A	0.0636	0.087		0.1108		0.18	0.2216		0.3324	0.36	0.4432	0.72	0.850	1.440	1.700	2.55	3.4	4.25
A1	A/V	0.0704	0.048		0.067		0.063	0.134		0.201	0.126	0.268	0.252	0.480	0.504	0.960	1.44	1.92	2.4
A2	A/V ²	0.0235	-0.011		-0.0244		-0.018	-0.0488		-0.0732	-0.036	-0.0976	-0.072	-0.075	-0.144	-0.150	-0.225	-0.3	-0.375
A3	A/V ³	0.00232	-0.0067		-0.015		-0.0063	-0.03		-0.045	-0.0126	-0.06	-0.0252	-0.046	-0.050	-0.092	-0.138	-0.184	-0.23
TAU	S	2.00E-12	2.00E-12		2.00E-12		2.00E-12	2.00E-12		2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12	2.00E-12
R1	ohm	0	1.00E+06		1.00E+06		1.00E+06	1.00E+06		1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06
R2	ohm	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
VB0	V	1.50E+01	1.00E+06		1.00E+06		1.00E+06	1.00E+06		1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06
VBI	V	1	0.85		0.85		0.85	0.85		0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85	0.85
RF	ohm	0	1.00E+06		1.00E+06		1.00E+06	1.00E+06		1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06	1.00E+06
IS	A	1.40E-14	1.00E-14		1.00E-14		1.00E-14	1.00E-14		1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14	1.00E-14
N	-	1.4	1		1		1	1		1	1	1	1	1	1	1	1	1	1
RDS	ohm	547	300		250		350	125		83	175	63	88	90	44	45	30	23	18
CRF	F	1.00E-08	1.00E-11		1.00E-11		1.00E-11	1.00E-11		1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11	1.00E-11
RD	ohm	1.3	3		0.37		0.37	0.185		0.123	0.185	0.0925	0.0925	0.800	0.093	0.400	0.267	0.200	0.160
RG	ohm	2.5	4		0.71		0.71	0.355		0.237	0.355	0.178	0.178	1.500	0.178	0.750	0.500	0.375	0.300
RS	ohm	4.3	4		0.8		0.8	0.4		0.267	0.4	0.2	0.2	0.500	0.200	0.250	0.167	0.125	0.100
RIN	ohm	2.1	0		0.8		0	0.4		0.267	0	0.2	0	0	0	0	0	0	0
CGSO	F	1.63E-13	2.70E-13		4.00E-13		5.50E-13	8.00E-13		1.2E-12	1.10E-12	1.60E-12	2.20E-12	4.00E-12	4.40E-12	8.00E-12	1.20E-11	1.60E-11	2.00E-11
CGDO	F	1.80E-14	2.50E-14		4.20E-14		3.20E-14	8.40E-14		1.26E-13	6.40E-14	1.68E-13	1.28E-13	5.00E-14	1.56E-13	1.00E-13	1.50E-13	2.00E-13	2.50E-13
FC	-	0.5	0.5		0.5		0.5	0.5		0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CDS	F	6.00E-14	6.00E-14		1.10E-13		6.00E-14	2.2E-13		3.3E-13	1.20E-13	4.40E-13	2.40E-13	3.00E-13	4.80E-13	6.00E-13	9.00E-13	1.20E-12	1.50E-12
CGS	F	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
CGD	F	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
KF4	-	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
AF	-	1	1		1		1	1		1	1	1	1	1	1	1	1	1	1
TNOM	°C	27	27		27		27	27		27	27	27	27	27	27	27	27	27	27
XTI		3	3		3		3	3		3	3	3	3	3	3	3	3	3	3
EG	eV	1.11	1.11		1.11		1.11	1.11		1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
VTOTC	V/°C	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
BETATCE	%°C	0	0		0		0	0		0	0	0	0	0	0	0	0	0	0
FFE	-	1	1		1		1	1		1	1	1	1	1	1	1	1	1	1
LD	nH	0.3	0.18		0.3		0.33	0.18		0.094	0.13	0.084	0.074	0.49	0.074	0.25	0.16	0.12	0.1
LS	nH	0.04	0.071		0.037		0.035	0.028		0.02	0.023	0.016	0.05	0.12	0.05	0.08	0.06	0.048	0.04
LG	nH	0.2	0.1		0.2		0.2	0.1		0.067	0.1	0.05	0.05	0.28	0.05	0.14	0.09	0.07	0.056



Large Signal Model Parameters for Curtice-Cubic Model For High Efficiency Heterojunction Power FETs
(Curtice-Ettenburg Model)

Parameter	Units	EPA018A	EPA025A	EPA030A	EPA040A	EPA060A	EPA060B	EPA080A	EPA090A	EPA120A	EPA120B	EPA160A	EPA240B	EPA240D	EPA480B	EPA480C	EPA720A	EPA960B	EPA1200A
BETA	1/V	0.00206	0.00206	0.00206	0.0318	0.00206	0	0.0318	0.00206	0.0318	0	0.0318	0	0.0244	0	0.0244	0.0244	0.0244	0.0244
GAMMA	1/V	0.993	0.993	0.993	1.81	0.993	1.6	1.81	0.993	1.81	1.6	1.81	1.6	2.16	1.6	2.16	2.16	2.16	2.16
VOU0	V	3.51	3.51	3.51	3.95	3.51	2	3.95	3.51	3.95	2	3.95	2	4.25	2	4.25	4.25	4.25	4.25
VT0	V	-1.3	-1.3	-1.3	-1	-1.3	-1	-1	-1.3	-1	-1	-1	-1	-0.9	-1	-0.9	-0.9	-0.9	-0.9
A0	A	0.0727	0.101	0.121	0.143	0.242	0.177	0.286	0.364	0.429	0.354	0.572	0.708	0.780	1.410	1.560	2.34	3.16	3.9
A1	A/V	0.113	0.157	0.189	0.144	0.377	0.16	0.288	0.565	0.432	0.32	0.576	0.640	0.840	1.280	1.680	2.52	3.36	4.2
A2	A/V2	0.0549	0.0762	0.0915	-0.096	0.183	-0.062	-0.192	0.2745	-0.288	-0.124	-0.384	-0.248	-0.815	-0.496	-1.630	-2.45	-3.26	-4.08
A3	A/V3	0.00842	0.0117	0.0141	-0.0975	0.0281	-0.049	-0.195	0.0421	-0.2925	-0.098	-0.39	-0.196	-0.865	-0.392	-1.730	-2.60	-3.46	-4.33
TAU	S	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	2.00E-12	3.00E-12	2.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12	3.00E-12
R1	ohm	0	0	0	0	0	1.00E+06	0	0	0	1.00E+06	0	1.00E+06	0	1.00E+06	0	0	0	0
R2	ohm	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
VB0	V	14	14	14	14	14	1.00E+06	14	14	14	1.00E+06	14	1.00E+06	14	1.00E+06	14	14	14	14
VBI	V	1	1	1	1	1	0.85	1	1	1	0.85	1	0.85	1	0.85	1	1	1	1
RF	ohm	0	0	0	0	0	1.00E+06	0	0	0	1.00E+06	0	1.00E+06	0	1.00E+06	0	0	0	0
IS	A	2.40E-14	3.30E-14	4.00E-14	5.50E-14	8.00E-14	1.00E-14	1.10E-13	1.20E-13	1.65E-13	1.00E-14	2.20E-13	1.00E-14	3.25E-10	2.00E-14	6.50E-10	9.75E-10	1.30E-09	1.63E-09
N	-	1.8	1.2	1.8	1.2	1.8	1.8	1.2	1.8	1.2	1.8	1.2	1.8	1.2	1	1.2	1.2	1.2	1.2
RDS	ohm	669	482	402	358	201	350	179	134	119	175	90	88	103	44	51.5	34.3	26	21
CRF	F	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-11	1.00E-08	1.00E-08	1.00E-08	1.00E-11	1.00E-08	1.00E-11	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08	1.00E-08
RD	ohm	1.3	0.96	0.78	0.54	0.39	0.53	0.27	0.26	0.18	0.265	0.135	0.13	0.500	0.065	0.250	0.167	0.125	0.100
RG	ohm	2.5	1.8	1.5	0.74	0.75	0.71	0.37	0.5	0.25	0.355	0.185	0.18	1.200	0.090	0.600	0.400	0.300	0.240
RS	ohm	3.8	2.76	2.28	0.52	1.14	0.35	0.26	0.76	0.17	0.175	0.13	0.09	0.270	0.005	0.135	0.090	0.068	0.054
RIN	ohm	5.7	4.13	3.42	0	1.71	0.8	0	1.14	0	0.4	0	0.2	0	0.1	0	0	0	0
CGSO	F	4.64E-13	6.45E-13	7.75E-13	9.80E-13	1.55E-12	1.00E-12	1.96E-12	2.23E-12	2.94E-12	2.00E-12	3.92E-12	4.00E-12	9.95E-12	8.00E-12	1.99E-11	2.99E-11	3.98E-11	4.98E-11
CGDO	F	3.73E-14	5.18E-14	6.25E-14	1.08E-13	1.25E-13	4.90E-14	2.16E-13	5.00E-01	3.24E-13	9.80E-14	4.32E-13	1.96E-13	3.56E-13	3.92E-13	7.12E-13	1.07E-12	1.42E-12	1.78E-12
FC	-	0.5	0.5	0.5	0.5	0.5	0.5	0.5	3.13E-13	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5	0.5
CDS	F	6.26E-14	8.70E-14	1.04E-13	1.08E-13	2.09E-13	6.40E-14	2.16E-13	3.12E-13	3.24E-13	1.28E-13	4.32E-13	2.56E-13	3.80E-13	5.12E-13	7.60E-13	1.14E-12	1.52E-12	1.90E-12
CGS	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
CGD	F	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
KF4	-	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
AF	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
TNOM	°C	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27	27
XTI		3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3
EG	eV	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11	1.11
VTOTC	V/°C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
BETATCE	%°C	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0	0
FFE	-	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1	1
LD	nH	0.3	0.18	0.33	0.3	0.18	0.33	0.18	0.094	0.094	0.13	0.084	0.074	0.49	0.074	0.25	0.16	0.12	0.1
LS	nH	0.04	0.071	0.035	0.037	0.028	0.035	0.028	0.02	0.02	0.023	0.016	0.05	0.12	0.05	0.08	0.06	0.048	0.04
LG	nH	0.2	0.1	0.2	0.2	0.1	0.2	0.1	0.067	0.067	0.1	0.05	0.05	0.28	0.05	0.14	0.09	0.07	0.056

Excelics EPB018A**Curtice-Cubic GaAsFET Model CURTICE3**

(Curtice-Ettenberg model)

<i>Parameter</i>	<i>Description</i>	<i>Unit</i>	<i>Value</i>
BETA	Coefficient for pinch-off change with respect to V_{ds}	1/V	0.0511
GAMMA	Hyperbolic tangent function parameter	1/V	1.47
VOU0	Output voltage (V_{ds}) at which A0, A1, A2, A3 were evaluated	V	2.51
VT0	Value of V1 below which $I_{ds}=I_{ds}(V1=VT0, V_{ds})$	V	-0.9
A0	Cubic polynomial I_{ds} equation coefficient 1	A	0.0524
A1	Cubic polynomial I_{ds} equation coefficient 2	A/V	0.0839
A2	Cubic polynomial I_{ds} equation coefficient 3	A/V ²	0.0257
A3	Cubic polynomial I_{ds} equation coefficient 4	A/V ³	-0.00493
TAU	Transit time under gate	S	2.00E-12
R1	Approximate breakdown resistance	ohm	0
R2	Resistance relating breakdown voltage to channel current	ohm	0
VB0	Gate-drain junction reverse bias breakdown voltage (gate-source junction reverse bias breakdown voltage with $V_{ds}<0$)	V	8
VBI	Built-in gate potential	V	1
RF	Gate-source effective forward-bias resistance	ohm	0
IS	Gate junction reverse saturation current (diode model)	A	1.70E-14
N	Gate junction ideality factor (diode model)	-	1.2
RDS	Additional output resistance for RF operation	ohm	400
CRF	Used with RDS to model frequency dependent output conductance	F	1.00E-08
RD	Drain ohmic resistance	ohm	1
RG	Gate resistance	ohm	0.5
RS	Source ohmic resistance	ohm	1
RIN	Channel resistance	ohm	2.07
CGSO	Zero bias gate-source junction capacitance (diode model)	F	2.60E-13
CGDO	Zero bias gate-drain junction capacitance (diode model)	F	9.00E-14
FC	Coefficient for forward bias depletion capacitance (diode model)	-	0.5
CDS	Drain-source capacitance	F	6.40E-14
CGS	Gate-source capacitance	F	0
CGD	Gate-drain capacitance	F	0
KF4	Flicker noise coefficient	-	0
AF	Flicker noise exponent	-	1
TNOM	Nominal ambient temperature at which these model parameters were derived	°C	27
XTI	Temperature exponent for saturation current		3
EG	Energy gap for temperature effect of IS	eV	1.11
VTOTC	VTO temperature coefficient	V/°C	0
BETATCE	Drain current exponential temperature coefficient	%°C	0
FFE	Flicker noise frequency exponent	-	1