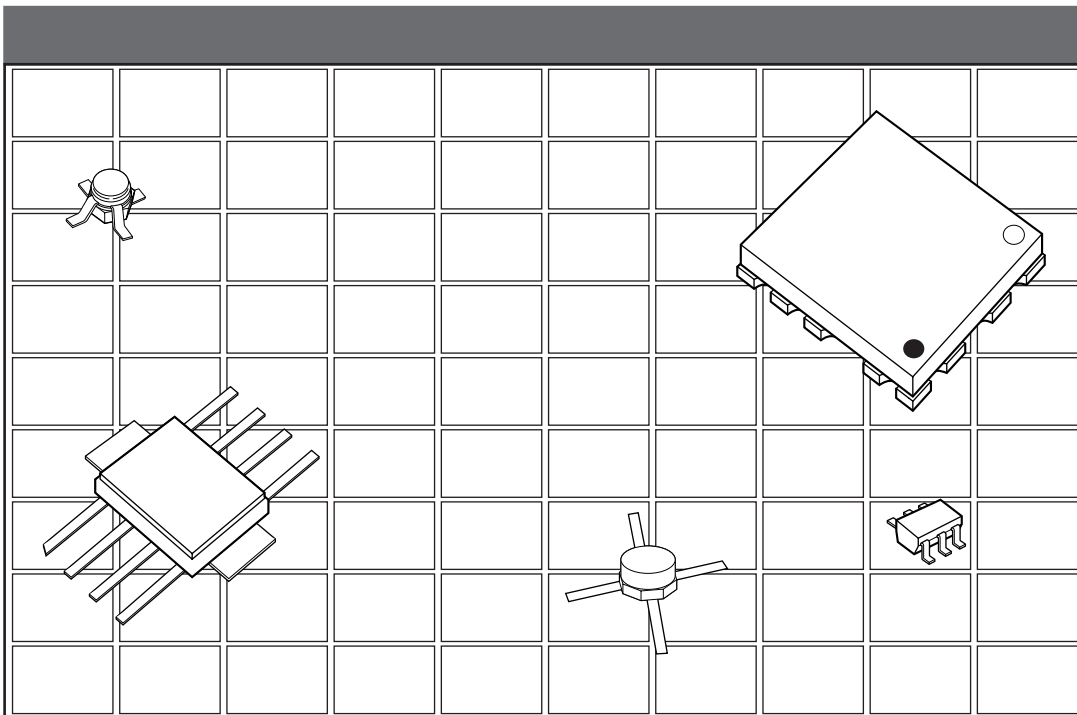


GaAs DEVICES SELECTION GUIDE



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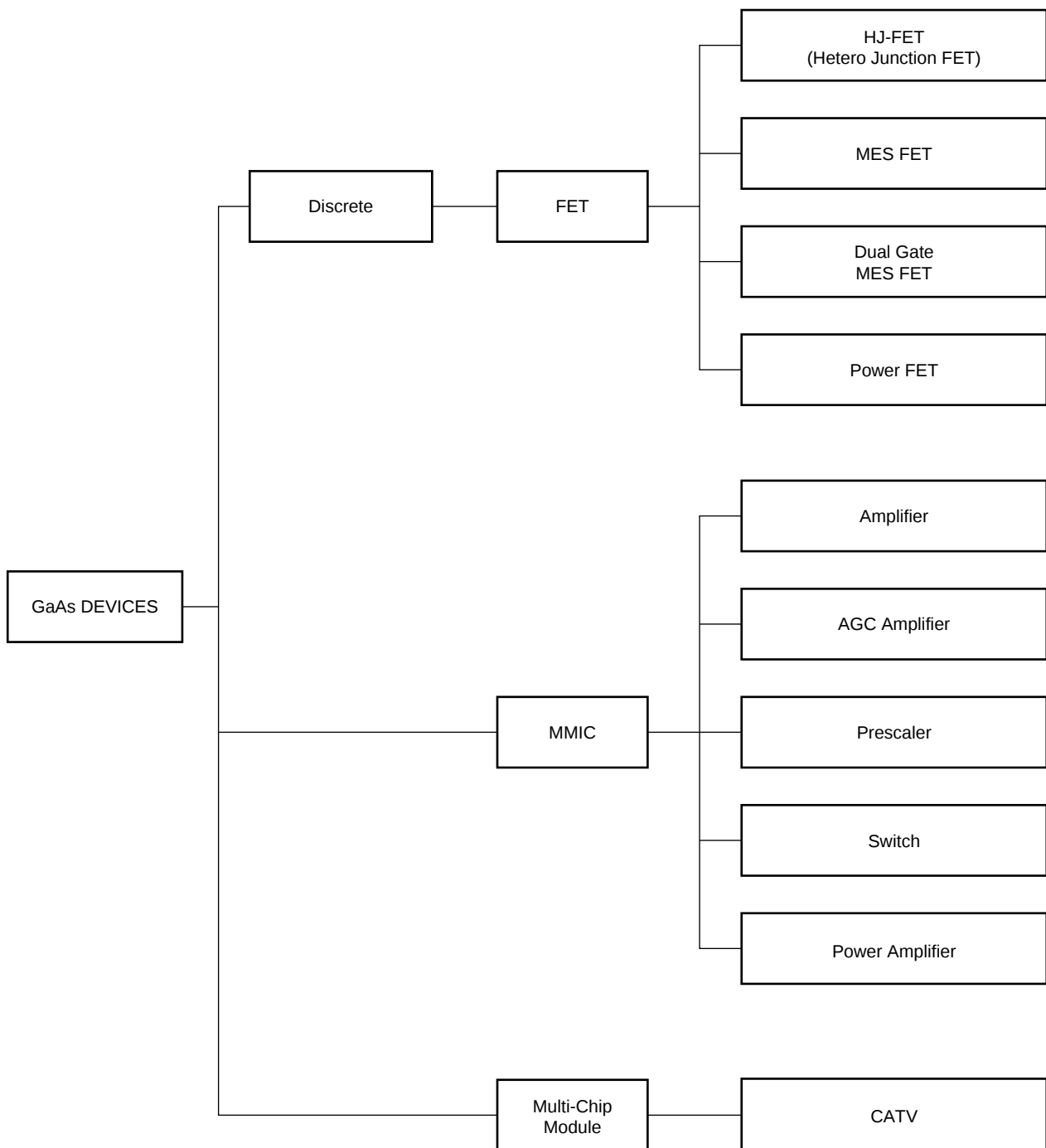
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TABLE OF CONTENTS

1. SERIES OF GaAs DEVICE PRODUCTS.....	4
2. MAP OF THE RF PERFORMANCE.....	5
HJ-FET	5
Power GaAs FET	6
3. ELECTRICAL CHARACTERISTICS TABLE.....	7
HJ-FET (Hetero Junction FET).....	7
GaAs MES FET	7
GaAs HBT (Hetero Junction Bipolar Transistor).....	9
HJ-FET (Hetero Junction FET) Chip	9
GaAs MES FET Chip.....	9
GaAs MES FET	11
UHF Dual Gate GaAs MES FET.....	11
L, S-Band Internally Matched Power GaAs FET Series	13
L to C-Band Driver Power GaAs FET	13
Ku-Band Power GaAs FET	13
GaAs Analog MMIC (Wideband Amplifier)	14
GaAs Analog MMIC (AGC Amplifier).....	14
GaAs Analog MMIC (Dual Amplifier)	14
GaAs Analog MMIC (Power Amplifier)	16
DBS IF Switch.....	16
GaAs Switch MMIC.....	16
Multi-Chip Module for CATV	18
4. APPLICATION NOTE.....	19
5. PACKAGE DIMENSIONS	20
FET	20
Power FET	20
MMIC	22
6. INDEX.....	23
7. REFERENCE.....	24
8. WEB SITE INFORMATION	24

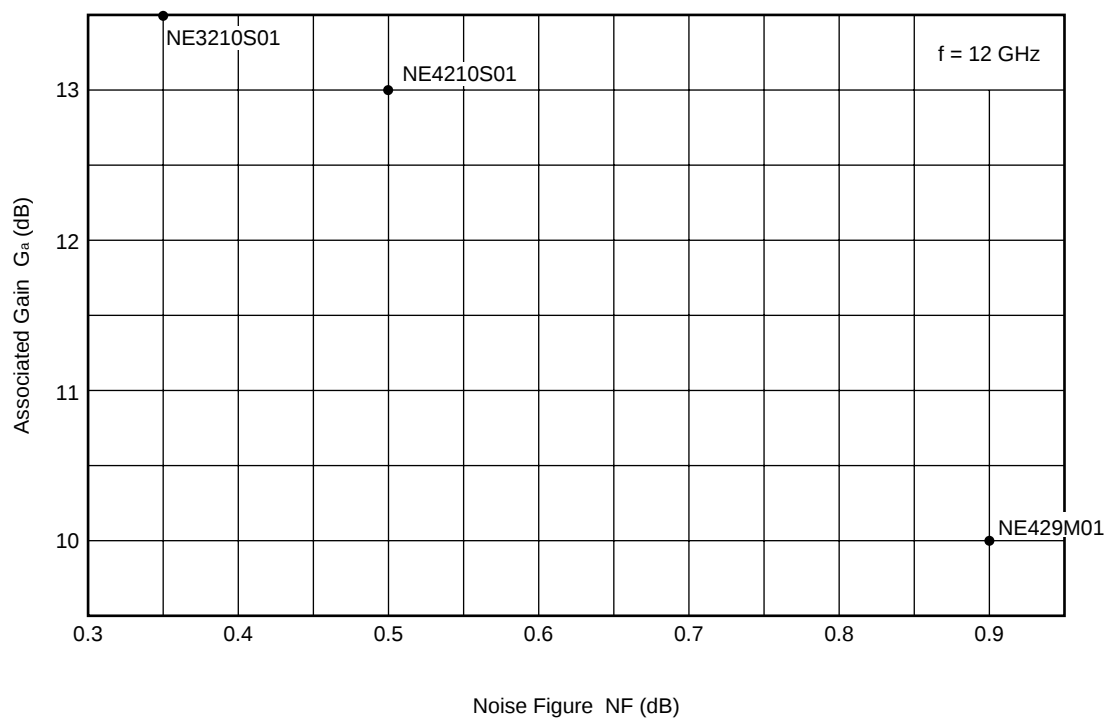
1. SERIES OF GaAs DEVICE PRODUCTS



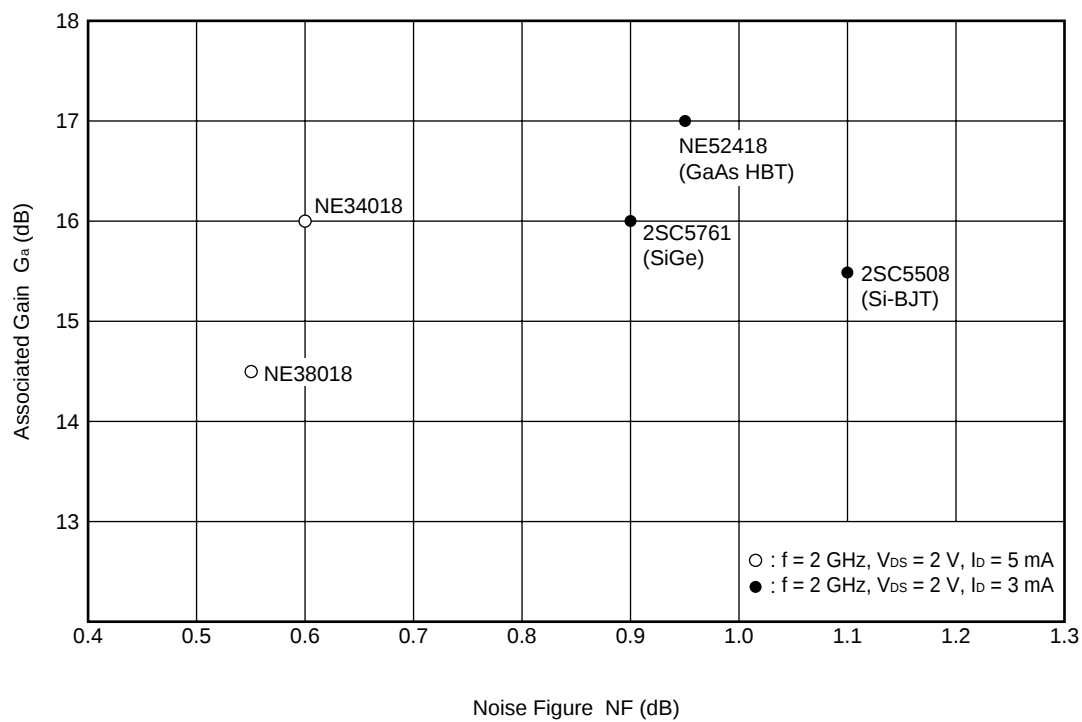
2. MAP OF THE RF PERFORMANCE

HJ-FET

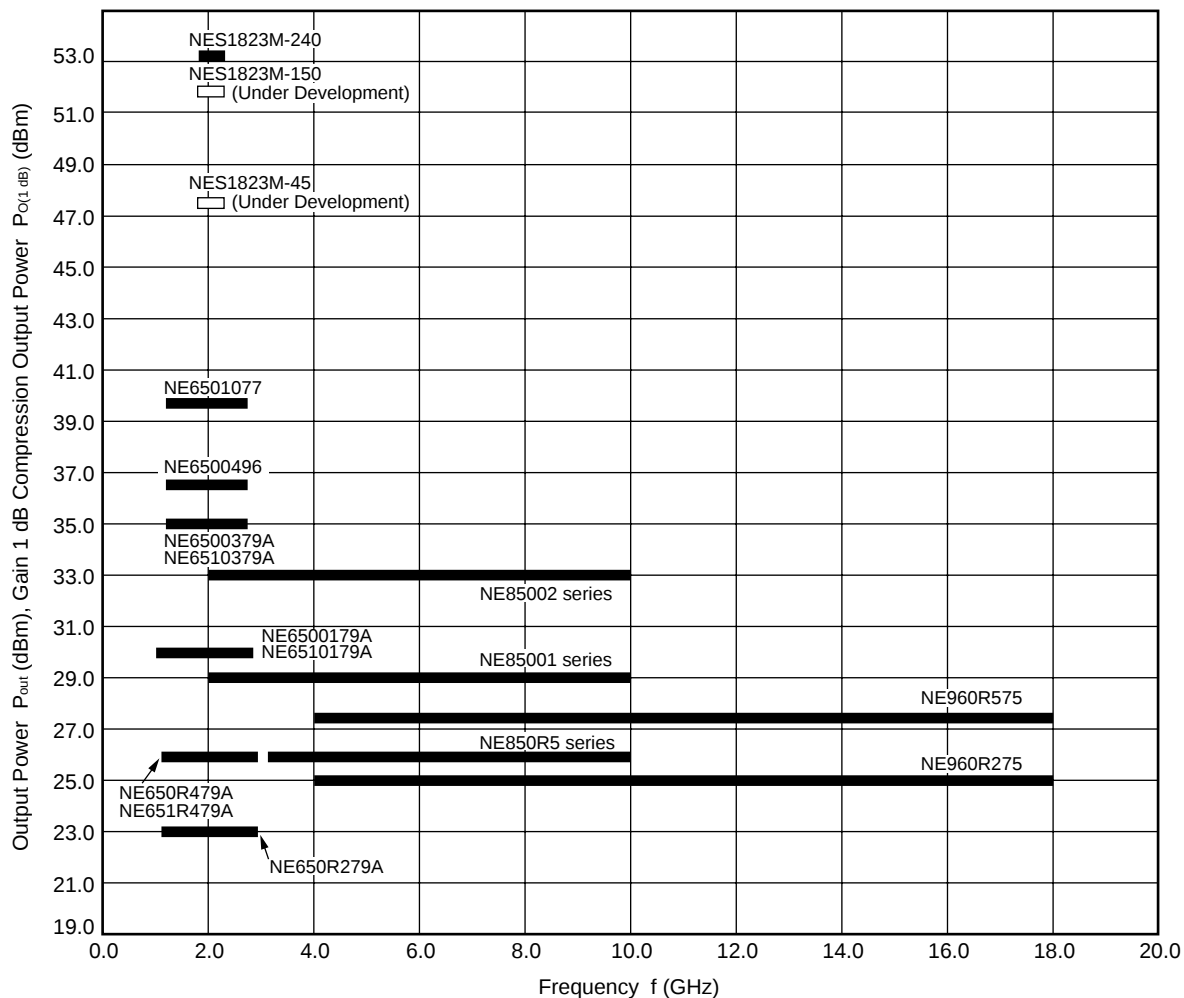
ASSOCIATED GAIN vs. NOISE FIGURE



ASSOCIATED GAIN vs. NOISE FIGURE



OUTPUT POWER, GAIN 1 dB COMPRESSION OUTPUT POWER vs. FREQUENCY



3. ELECTRICAL CHARACTERISTICS TABLE

HJ-FET (Hetero Junction FET)

Part Number	Pack- age Code	Absolute Maximum Ratings (T _A = +25°C)						Electrical Characteristics (T _A = +25°C)											
		V _{DS} (V)	V _{GS} (V)	I _D (mA)	P _{tot} (mW)	T _{ch} (°C)	T _{stg} (°C)	I _{DSS}				V _P				g _m			
								V _{DS} (V)	(mA)			V _{DS} (V)	I _D (mA)	(V)		V _{DS} (V)	I _D (mA)	(mS)	
									MIN.	TYP.	MAX.			MIN.	MAX.			MIN.	TYP.
NE3210S01 ^{Note1}	S01	4.0	-3.0	I _{DSS}	165	125	-65 to +125	2	15	40	70	2	0.1	-0.2	-2.0	2	10	40	55
NE4210S01	S01	4.0	-3.0	I _{DSS}	165	125	-65 to +125	2	15	40	70	2	0.1	-0.2	-2.0	2	10	40	55
NE429M01	M01	4.0	-3.0	I _{DSS}	165	125	-65 to +125	2	20	60	90	2	0.1	-0.2	-2.0	2	10	45	60
NE34018	18	4.0	-3.0	I _{DSS}	150	125	-65 to +125	2	30	-	120	2	0.1	-0.2	-2.0	2	5	30	-
NE38018	18	4.0	-3.0	I _{DSS}	150	125	-65 to +125	2	40	-	170	2	0.1	-0.1	-1.5	2	5	50	-

Notes 1. -T1: 1000 pcs/reel, -T1B: 4000 pcs/reel (Tape & reel)

2. I_{DSS} rank is specified as follows (V63: 30 to 65 mA, V64: 60 to 120 mA)

3. I_{DSS} rank is specified as follows (V67: 40 to 90 mA, V68: 70 to 170 mA)

GaAs MES FET

Part Number	Pack- age Code	Absolute Maximum Ratings (T _A = +25°C)							Electrical Characteristics (T _A = +25°C)											
		V _{DS} (V)	V _{GS} (V)	I _D (mA)	R _{th(c-c)} (°C/W)	P _{tot} (mW)	T _{ch} (°C)	T _{stg} (°C)	I _{DSS}				V _P				g _m			
									V _{DS} (V)	(mA)			V _{DS} (V)	I _D (mA)	(V)		V _{DS} (V)	I _D (mA)	(mS)	
										MIN.	TYP.	MAX.			MIN.	MAX.			MIN.	TYP.
NE71383B	83B	5.0	-5.0	I _{DSS}	-	270	175	-65 to +175	3	20	40	120	3	0.1	-0.5	-3.5	3	10	20	50

Electrical Characteristics (T _A = +25°C)															Marking	Part Number
MSG./MAG.				NF _{opt}					G _a							
V _{DS}	I _{DS}	f	(dB)	V _{DS}	I _{DS}	f	(dB)		V _{DS}	I _{DS}	f	(dB)				
(V)	(mA)	(GHz)	TYP.	(V)	(mA)	(GHz)	TYP.	MAX.	(V)	(mA)	(GHz)	MIN.	TYP.			
2	10	12	15	2	10	12	0.35	0.45	2	10	12	12.0	13.5	K	NE3210S01 ^{Note1}	
2	10	12	15	2	10	12	0.50	0.70	2	10	12	11.0	13.0	L	NE4210S01	
2	10	12	11	2	10	12	0.9	1.2	2	10	12	9.0	10.0	V72	NE429M01	
2	5	2	18	2	5	2	0.6	1.0	2	5	2	14	16	Note 2	NE34018	
2	5	2	16	2	5	2	0.55	1.0	2	5	2	12.5	14.5	Note 3	NE38018	

Electrical Characteristics (T _A = +25°C)															Marking	Part Number
MSG./MAG.				NF _{opt}					G _a							
V _{DS}	I _{DS}	f	(dB)	V _{DS}	I _{DS}	f	(dB)		V _{DS}	I _{DS}	f	(dB)				
(V)	(mA)	(GHz)	TYP.	(V)	(mA)	(GHz)	TYP.	MAX.	(V)	(mA)	(GHz)	MIN.	TYP.			
–	–	–	–	3	10	12	1.6	1.8	3	10	12	8.5	9.5	–	NE71383B	

GaAs HBT (Hetero Junction Bipolar Transistor)

Part Number	Pack- age Code	Absolute Maximum Ratings (T _A = +25°C)								Electrical Characteristics (T _A = +25°C)													
		V _{CEO} (V)	V _{CB0} (V)	V _{EB0} (V)	I _C (mA)	I _B (mA)	P _{Tot} (mW)	T _J (°C)	T _{stg} (°C)	h _{FE}						I _{CBO}				I _{EBO}			
										V _{CE} (V)	I _C (mA)				V _{CB0} (V)	(μA)			V _{EB0} (V)	(μA)			
												MIN.	TYP.	MAX.		MIN.	TYP.	MAX.		MIN.	TYP.	MAX.	
NE52418	18	5.0	3.0	3.0	40	0.3	150	125	−65 to 125	2	3	110	150	190	3	–	0.2	1.0	3	–	0.2	1.0	

HJ-FET (Hetero Junction FET) Chip

Part Number	Absolute Maximum Ratings (T _A = +25°C)						Electrical Characteristics (T _A = +25°C)							
	V _{DS}	V _{GS}	I _D	P _{tot}	T _{ch}	T _{stg}	I _{DSS}				V _P			
	(V)	(V)	(mA)	(mW)	(°C)	(°C)	V _{DS}	(mA)			V _{DS}	I _D	(V)	
								MIN.	TYP.	MAX.			MIN.	MAX.
NE321000	4	−3	I _{DSS}	200	175	−65 to +175	2	15	40	70	2	0.1	−0.2	−2.0
NE32500	4	−3	I _{DSS}	200	175	−65 to +175	2	20	60	90	2	0.1	−0.2	−2.0

GaAs MES FET Chip

Part Number	Absolute Maximum Ratings (T _A = +25°C)						Electrical Characteristics (T _A = +25°C)							
	V _{DS}	V _{GS}	I _D	P _{tot}	T _{ch}	T _{stg}	I _{DSS}				V _P			
	(V)	(V)	(mA)	(mW)	(°C)	(°C)	V _{DS}	(mA)			V _{DS}	I _D	(V)	
								MIN.	TYP.	MAX.			MIN.	MAX.
NE71300	5	−5	I _{DSS}	400	175	−65 to +175	3	20	40	120	3	0.1	−0.5	−3.5

Electrical Characteristics (T _A = +25°C)															Marking	Part Number
IIP ₃				NF					G _a							
V _{CE}	I _C	f	(dB)	V _{CE}	I _C	f	(dB)		V _{CE}	I _C	f	(dB)				
(V)	(mA)	(GHz)	TYP.	(V)	(mA)	(GHz)	TYP.	MAX.	(V)	(mA)	(GHz)	MIN.	TYP.			
2.5	8	2	+8	2	3	2	0.95	1.35	2	3	2	15	17	V45	NE52418	

Electrical Characteristics (T _A = +25°C)															Part Number
	g _m				NF _{opt}					G _a					
	V _{DS} (V)	I _D (mA)	(mS)		V _{DS} (V)	I _D (mA)	f (GHz)	(dB)		V _{DS} (V)	I _D (mA)	f (GHz)	(dB)		
			MIN.	TYP.				TYP.	MAX.				MIN.	TYP.	
	2	10	40	55	2	10	12	0.35	0.45	2	10	12	12	13.5	NE321000
	2	10	45	60	2	10	12	0.45	0.55	2	10	12	11	12.5	NE32500

Electrical Characteristics (T _A = +25°C)															Part Number	
	g _m				NF _{opt}					G _a		P _{O(1 dB)}				
	V _{DS} (V)	I _D (mA)	(mS)		V _{DS} (V)	I _D (mA)	f (GHz)	(dB)		(dB)		V _{DS} (V)	I _D (mA)	f (GHz)		(dBm)
			MIN.	TYP.				TYP.	MAX.	MIN.	TYP.					TYP.
	3	10	20	50	3	10	12	1.6	1.8	8.5	9.5	3	30	12	14.5	NE71300

GaAs MES FET

Part Number	Pack- age Code	Absolute Maximum Ratings (T _A = +25°C)						Electrical Characteristics (T _A = +25°C)											
		V _{DS} (V)	V _{GS} (V)	I _D (mA)	P _{tot} (mW)	T _{ch} (°C)	T _{stg} (°C)	I _{DSS}				V _P				g _m			
								V _{DS} (V)	(mA)			V _{DS} (V)	I _D (mA)	(V)		V _{DS} (V)	I _D (mA)	(mS)	
									MIN.	TYP.	MAX.			MIN.	MAX.			MIN.	TYP.
NE722S01	S01	5.0	−6.0	I _{DSS}	250	125	−65 to +125	3	60	90	120	3	0.1	−0.5	−4.0	3	30	20	40
NE72218	18	5.0	−6.0	I _{DSS}	250	125	−65 to +125	3	30	60	120	3	0.1	−0.5	−4.0	3	30	20	45

Note I_{DSS} rank is specified as follows (V57: 30 to 120 mA, V58: 65 to 120 mA, V59: 30 to 75 mA)

UHF Dual Gate GaAs MES FET

Part Number	Pack- age Code	Absolute Maximum Ratings (T _A = +25°C)							Electrical Characteristics (T _A = +25°C)													
		V _{DSX} (V)	V _{G1S} (V)	V _{G2S} (V)	I _D (mA)	P _T (mW)	T _{ch} (°C)	T _{stg} (°C)	BV _{DSX}				I _{DSS}			V _{G1S(off)}			V _{G2S(off)}	I _{G1SS}		
									V _{G1S} (V)	V _{G2S} (V)	I _D (μA)	(V)	V _{DS} (V)	(mA)		V _{DS} (V)	I _D (mA)	(V)	(V)	V _{DS} (V)	V _{G1S} (V)	
														MIN.	MAX.							MAX.
3SK299 (NE25118)	18	13	−4.5	−4.5	40	120	125	−55 to +125	−	−	−	−	5	5	40	5	0.1	−3.5	−3.5	0	−4	

Note I_{DSS} rank is specified as follows (U71: 5 to 15 mA, U72: 10 to 25 mA, U73: 20 to 35 mA, U74: 30 to 40 mA)

Electrical Characteristics (T _A = +25°C)														Marking	Part Number
MSG./MAG.				PN (10 kHz offset)				G _S							
V _{DS} (V)	I _{DS} (mA)	f (GHz)	(dB)	V _{DS} (V)	I _{DS} (mA)	f (GHz)	dBc/Hz	V _{DS} (V)	I _{DS} (mA)	f (GHz)	(dB)				
			TYP.								MIN.	TYP.			
3	10	12	7	3	30	11	−90	3	30	12	−	6.0	P	NE722S01	
−	−	−	−	3	30	11	−90	3	30	12	−	5.0	Note	NE72218	

Electrical Characteristics (T _A = +25°C)																			Marking	Part Number
I _{G1SS}			I _{G2SS}	y _{fs}					f	C _{iss}	C _{rss}	NF					G _{PS}			
V _{G2S} (V)	(μA)	(μA)	V _{DS} (V)	V _{G2S} (V)	I _D (mA)	f (kHz)	(mS)	f (MHz)	(pF)	(pF)	V _{DS} (V)	V _{G2S} (V)	I _D (mA)	f (MHz)	(dB)		(dB)			
	MAX.	MAX.							TYP.	TYP.					TYP.	TYP.	MIN.	TYP.		
0	10	10	5	1	10	1.0	18	1	1.0	0.02	5	1	10	900	1.1	2.5	16	20	Note	3SK299 (NE25118)

L, S-Band Internally Matched Power GaAs FET Series

Part Number	V _{DS} (V)	I _{DSset} (mA)	f (GHz)	P _{out} (dBm)	G _L (dB)	IM ₃ (dBc)	Frequency Range (GHz)	Package
				TYP.	TYP.	TYP.		
NES1823M-240	12.0	3 000	2.17	53.5	12.0	–	1.8 to 2.3	T-92M

L to C-Band Driver Power GaAs FET

Part Number	V _{DS} (V)	I _{DSset} (mA)	f (GHz)	P _{O(1 dB)} (dBm)	G _L (dB)	η _{add} (%)	Frequency Range (GHz)	Package
				TYP.	TYP.	TYP.		
NE6500379A	6.0	500	1.9	35.0	10.0	50	0.8 to 3.0	79A
NE6500496	10.0	≤ 400	2.3	36.0 ^{Note1}	11.5 ^{Note2}	45	2.3	96
NE6501077	10.0	≤ 1 000	2.3	39.5 ^{Note1}	10.5	40	2.3	77
NE650R279A	6.0	50	1.9	23.0	16.0	45	0.8 to 3.0	79A
NE650R479A	6.0	100	1.9	26.0	14.0	45	0.8 to 3.0	79A
NE6500179A	6.0	200	1.9	30.0	12.0 ^{Note4}	45	0.8 to 3.0	79A
NE6510179A	3.5	200	1.9	32.5 ^{Note3}	10.0	58	0.8 to 3.0	79A
NE6510379A	3.5	200	1.9	32.5 ^{Note3}	8.0	52	0.8 to 3.0	79A
NE651R479A	3.5	50	1.9	27.0 ^{Note3}	12.0	60	0.8 to 3.0	79A
NE8500199	10.0	200	7.2	28.5 ^{Note1}	9.0 ^{Note2}	–	2.0 to 10.0	99
NE8500295-4	10.0	450	4.2	33.8 ^{Note1}	10.5 ^{Note2}	–	3.5 to 5.5	95
NE8500295-6	10.0	450	6.5	33.8 ^{Note1}	9.5 ^{Note2}	–	5.5 to 7.5	95
NE8500295-8	10.0	450	8.5	33.5 ^{Note1}	8.0 ^{Note2}	–	7.5 to 8.5	95
NE850R599A	10.0	100	7.2	25.5 ^{Note1}	9.5 ^{Note2}	–	2.0 to 10.0	99

Notes 1. P_O (MIN.) (–4: P_{in} = 24.5 dBm, –6: P_{in} = 25.5 dBm, –8: P_{in} = 27.0 dBm)

2. G_L (MIN.)

3. P_{out}

4. P_{in} = 0 dBm

Ku-Band Power GaAs FET

Part Number	V _{DS} (V)	I _{DSset} (mA)	f (GHz)	P _{O(1 dB)} (dBm)	G _L (dB)	η _{add} (%)	Frequency Range (GHz)	Package
				TYP.	TYP.	TYP.		
NE960R275	9.0	90	14.5	25.0	10.0	35	4 to 18	75
NE960R575	9.0	180	14.5	27.5	9.0	30	4 to 18	75

GaAs Analog MMIC (Wideband Amplifier)

Part Number	Absolute Maximum Ratings (T _A = +25°C)							Electrical Characteristics (T _A = +25°C)					
	V _{DD1} (V)	V _{DD2} (V)	V _{AGC} (V)	P _{in} (dBm)	P _T ^{Note} (W)	T _{stg} (°C)	T _A (°C)	Condition				I _{DD} (mA)	
								V _{DD1} (V)	V _{DD2} (V)	V _{AGC} (V)	f (GHz)	TYP.	MAX.
μPG2115TB	+6	–	–	0	0.14	–35 to +150	–30 to +90	+3	–	–	0.89 to 0.96	12	16

Note Mounted on double-sided copper-clad 50 × 50 × 1.6 mm epoxy glass PWB, T_A = +85°C

GaAs Analog MMIC (AGC Amplifier)

Part Number	Absolute Maximum Ratings (T _A = +25°C)							Electrical Characteristics (T _A = +25°C)					
	V _{DD1} (V)	V _{DD2} (V)	V _{AGC} (V)	P _{in} (dBm)	P _T ^{Note1} (W)	T _{stg} (°C)	T _A (°C)	Condition				I _{DD} (mA)	
								V _{DD1} (V)	V _{DD2} (V)	V _{AGC} (V)	f (GHz)	TYP.	MAX.
μPG2106TB	+6	+6	+6	–8	0.14	–35 to +150	–30 to +90	+3	+3	+2.5	0.89 to 0.96	25	35
μPG2110TB	+6	+6	+6	–8	0.14	–35 to +150	–30 to +90	+3	+3	+2.5	1.429 to 1.453	25	35
μPG2128TB	+6	+6	+6	–8	0.14	–35 to +150	–30 to +90	+3	+3.5	+2.5	1.429 to 1.453	40	48
μPG2130TB	+6	+6	+6	–8	0.14	–35 to +150	–30 to +90	+3	+3.5	+2.5	1.429 to 1.453	25	35

Notes 1. Mounted on double-sided copper-clad 50 × 50 × 1.6 mm epoxy glass PWB, T_A = +85°C

2. Δf = ±50 kHz, π/4DQPSK modulated signal input.

3. Δf = ±100 kHz, π/4DQPSK modulated signal input.

GaAs Analog MMIC (Dual Amplifier)

Part Number	Absolute Maximum Ratings (T _A = +25°C)							Electrical Characteristics (T _A = +25°C)					
	V _{DD1} (V)	V _{DD2} (V)	V _{DD3} (V)	P _{in} (dBm)	P _T ^{Note} (W)	T _{stg} (°C)	T _A (°C)	Condition				I _{DD} (mA)	
								V _{DD1} (V)	V _{DD2} (V)	V _{DD3} (V)	f (GHz)	TYP.	MAX.
μPG2126TB	+6	–	–	+4	0.14	–35 to +150	–30 to 90	+3.6	–	–	0.93 to 0.96	16	20
	–	+6	+6	–4				–	+3.6	+3.6	1.429 to 1.453	28	32
μPG2304TK	+4	–	–	+10	0.125	–65 to +150	–30 to +85	+2.8	–	–	0.68 to 0.77 1.27 to 1.37	3.5	4.0

Note Mounted on double-sided copper-clad 50 × 50 × 1.6 mm epoxy glass PWB, T_A = +85°C

Electrical Characteristics (T _A = +25°C)												Package	Part Number
I _{AGC} (mA)		G _P (dB)		GCR (dB)		P _{adj1} (dBc)		P _{adj2} (dBc)		P _{out} (dBm)			
TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.			
–	–	14	17	–	–	–60	–55	–70	–65	+8	6SMM	μPG2115TB	

Electrical Characteristics (T _A = +25°C)												Package	Part Number
I _{AGC} (mA)		G _P (dB)		GCR (dB)		P _{adj1} ^{Note2} (dBc)		P _{adj2} ^{Note3} (dBc)		P _{out} (dBm)			
TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.	MAX.	TYP.			
0.2	0.5	26	30	35	40	−60	−55	−70	−65	+8	6SMM	μPG2106TB	
0.2	0.5	24	27	35	40	−60	−55	−70	−65	+8	6SMM	μPG2110TB	
0.2	0.5	26	28	35	40	−60	−55	−70	−65	+12	6SMM	μPG2128TB	
0.2	0.5	28	30	37	42	−60	−55	−70	−65	+10	6SMM	μPG2130TB	

Electrical Characteristics (T _A = +25°C)										Package	Part Number
G _P (dB)		ISL (dB)		P _{adj1} (dBc)		P _{adj2} (dBc)		P _{out} (dBm)			
TYP.	MAX.	MIN.	TYP.	TYP.	MAX.	TYP.	MAX.	TYP.			
16 26	18 28	– –	– –	–60 –60	–55 –55	–70 –70	–65 –65	+8 +8	6SMM	μPG2126TB	
0	+2	30	35	–	–	–	–	–	6L2MM	μPG2304TK	

GaAs Analog MMIC (Power Amplifier)

Part Number	Application	Absolute Maximum Ratings(T _A = +25°C)									Electrical Characteristics (T _A = +25°C)			
		V _{CC1} (V)	V _{CC2} (V)	V _{cont} (V)	V _{enable} (V)	I _{CC} (mA)	P _{in} (dBm)	P _D (mW)	T _{stg} (°C)	T _A (°C)	Condition			
											V _{CC1} (V)	V _{CC2} (V)	V _{cont} (V)	V _{enable} (V)
μPG2301TQ	Bluetooth™	5	5	3.6	3.6	400	10	700	−55 to +150	−40 to +85	3.3	3.3	3.3	3.3

DBS IF Switch

Part Number	Function	Absolute Maximum Ratings (T _A = +25°C)				Electrical Characteristics (T _A = +25°C)					
		V _{cont} (V)	P _T (W)	T _A (°C)	T _{stg} (°C)	Condition	L _{INS} (dB)		ΔL _{INS} (dB)		
						f (GHz)	TYP.	MAX.	TYP.	MAX.	
μPG181GR	DBS 2 × 2 IF Switch	−6 to +6	2	−40 to +85	−65 to +150	0.95 to 2.15	5.0	7.0	0.8	1.5	
μPG183GR	DBS 4 × 2 IF Switch	−1 to +6	2	−40 to +85	−65 to +150	0.95 to 2.15	7.0	9.0	1.5	3.0	
μPG186TQ	DBS SPDT IF Switch	−1 to +6	2	−40 to +85	−65 to +150	0.95 to 2.15	1.5	2.5	0.4	1.0	
μPG187GR	DBS Twin SPDT IF Switch	−1 to +6	2	−40 to +85	−65 to +150	0.95 to 2.15	1.8	3.0	0.4	1.2	
μPG188GR	DBS 4 × 2 IF Switch	−1 to +6	2	−40 to +85	−65 to +150	0.95 to 2.15	7.0	9.0	1.5	3.0	

GaAs Switch MMIC

Part Number	Function	Absolute Maximum Ratings (T _A = +25°C)				
		V _{cont} (V)	P _T (W)	P _{in} (dBm)	T _C (°C)	T _{stg} (°C)
μPG152TA	L-Band SPDT Switch	−6 to +6	0.4	+31	−50 to +80	−65 to +150
μPG153TB	L-Band SPDT Switch	−6 to +6	0.15	+33	−45 to +85	−55 to +150
μPG154TB	L-Band SPDT Switch	−6 to +6	0.15	+31	−45 to +85	−55 to +150
μPG155TB	L-Band SPDT Switch	−6 to +6	0.15	+34	−45 to +85	−55 to +150
μPG158TB	L-Band SPDT Switch	−6 to +6	0.15	+28	−45 to +85	−55 to +150
μPG2006TB	L-Band 1.8 V SPDT Switch	−6 to +6	0.15	+23	−45 to +85	−55 to +150
μPG2008TK	L-Band Small SPDT Switch	−6 to +6	0.15	+28	−45 to +85	−55 to +150
μPG2009TB	L-Band High Power SPDT Switch	−6 to +6	0.15	+36	−45 to +85	−55 to +150
μPG2010TB	L-Band High Power Single Control SPDT Switch	+6	0.15	+36	−45 to +85	−55 to +150
μPG2012TB	L-Band Single Control Switch	+6	0.15	+28	−45 to +85	−55 to +150
μPG2012TK	L-Band Single Control Switch	+6	0.15	+28	−45 to +85	−55 to +150

Note @ f = 2 GHz, C_x = 2 pF

Electrical Characteristics (T _A = +25°C)											Package	Part Number
I _{CC} (mA)		f (GHz)	G _P (dB)	P _{out1}		P _{out2}		GCR (dB)	PAE (%)			
MIN.	MAX.			MIN.	MAX.	MIN.	MAX.					
110	130	2.4 to 2.5	23	+21	+24.5	–	+1	23	50	10TSON	μPG2301TQ	

Electrical Characteristics (T _A = +25°C)						Package	Part Number
	ISL (dB)		RL _{out} (dB)		Condition		
	MIN.	TYP.	MIN.	TYP.			
	30	33	13	16	@ V _{cont} = +5V/0V	16HTSSOP	μPG181GR
	24	26.5	10	14	@ V _{cont} = +5V/0V	16HTSSOP	μPG183GR
	45	48	10	15	@ V _{cont} = +5V/0V	10TSON	μPG186TQ
	42	44	10	15	@ V _{cont} = +5V/0V	16HTSSOP	μPG187GR
	29	32	10	15	@ V _{cont} = +5V/0V	16HTSSOP	μPG188GR

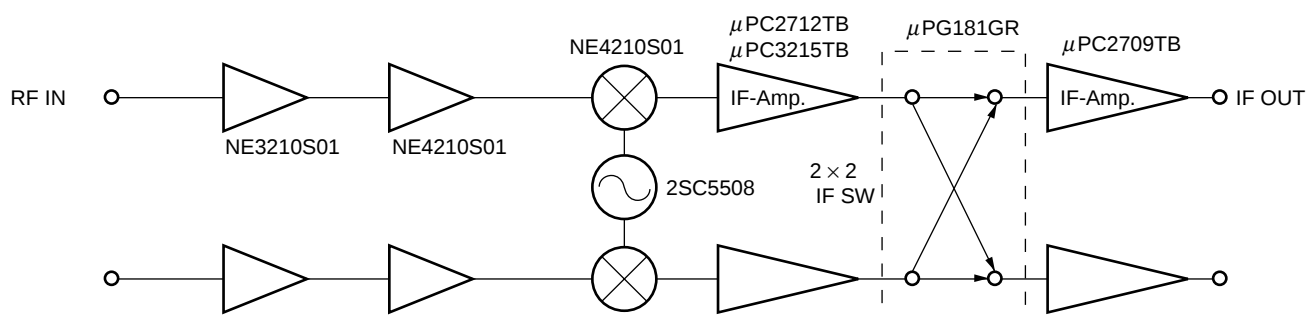
Electrical Characteristics (T _A = +25°C)											Package	Part Number
Condition	L _{ins} (dB)		RL _{in} (dB)		Condition	P _{in(1dB)} (dBm)	t _{sw} (ns)	ISL (dB)				
f (GHz)	TYP.	MAX.	MIN.	TYP.		TYP.	TYP.	MIN.	TYP.			
0.1 to 2.5	0.60	1.0	11	–	@ 2 GHz, V _{cont} = +3 V/0 V	+30	30	20	22	6MM	μPG152TA	
0.1 to 2.5	0.70	0.9	11	15	@ 2 GHz, V _{cont} = +3 V/0 V	+33	30	10	13	6SMM	μPG153TB	
0.1 to 2.5	0.65	0.9	11	15	@ 2 GHz, V _{cont} = +3 V/0 V	+30	30	18 ^{Note}	21 ^{Note}	6SMM	μPG154TB	
0.1 to 2.5	0.75	1.0	11	15	@ 2 GHz, V _{cont} = +3 V/0 V	+34	30	13	16	6SMM	μPG155TB	
0.1 to 2.5	0.40	0.65	13	19	@ 2 GHz, V _{cont} = +3 V/0 V	+26.5	50	22	27	6SMM	μPG158TB	
0.5 to 2.5	0.30	0.55	10	21	@ 1 GHz, V _{cont} = +1.8 V/0 V	+20	50	25	24	6SMM	μPG2006TB	
0.5 to 2.5	0.40	0.70	13	20	@ 1 GHz, V _{cont} = +2.8 V/0 V	+25	50	22	25	6L2MM	μPG2008TK	
0.5 to 2.5	0.25	0.45	15	20	@ 1 GHz, V _{cont} = +2.8 V/0 V	+34 @ P _{in(0.1 dB)}	150	24	28	6SMM	μPG2009TB	
0.5 to 2.5	0.25	0.45	15	20	@ 1 GHz, V _{cont} = +2.8 V/0 V	+33 @ P _{in(0.1 dB)}	1 (μs)	24	28	6SMM	μPG2010TB	
0.5 to 2.5	0.27	0.45	15	20	@ 1 GHz, V _{cont} = +2.8 V/0 V	+24	300	24	28	6SMM	μPG2012TB	
0.5 to 2.5	0.27	0.45	15	20	@ 1 GHz, V _{cont} = +2.8 V/0 V	+24	300	24	30	6L2MM	μPG2012TK	

Multi-Chip Module for CATV

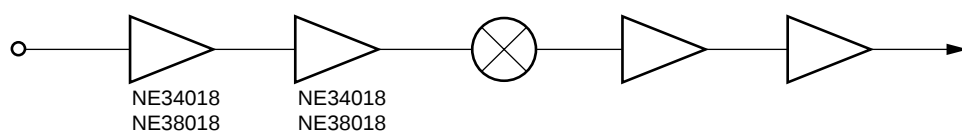
Part Number	Function	Remark	Package
MC-78xx series	Wideband Amplifier for 50 M to 860 MHz CATV Push-Pull Amp.	To need some information, contact your nearby sales office.	7-pin special package
	Wideband Amplifier for 50 M to 860 MHz CATV Power Doubler Amp.		

4. APPLICATION NOTE

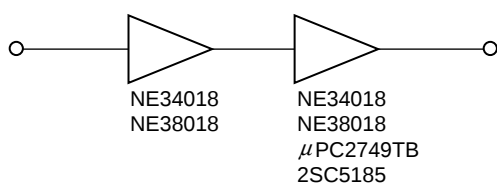
• X to Xu-Band DBS Converter



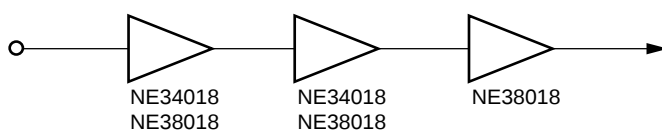
• S-Band MMDS (RX Block)



• GPS Antenna



• Satellite Radio



5. PACKAGE DIMENSIONS

FET (UNIT: mm)

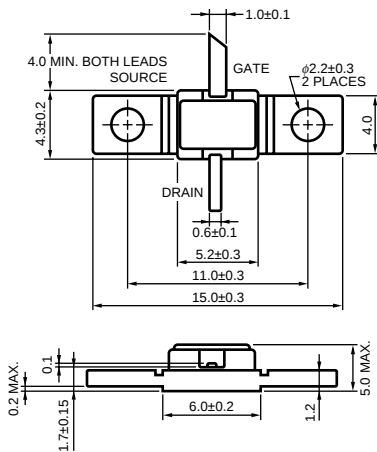
18 (4-pin super minimold)	39 (4-pin minimold)	83A, 83B
84, 84A, 84C L { (-SL) 1.7 MIN. (-T1) 1.0±0.2	S01	M01 (6-pin super minimold)

Power FET 1/2 (UNIT: mm)

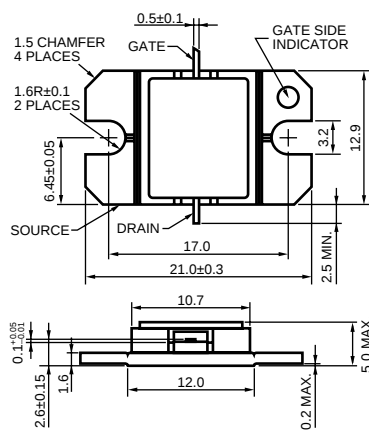
75	77	95
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Power FET 2/2 (UNIT: mm)

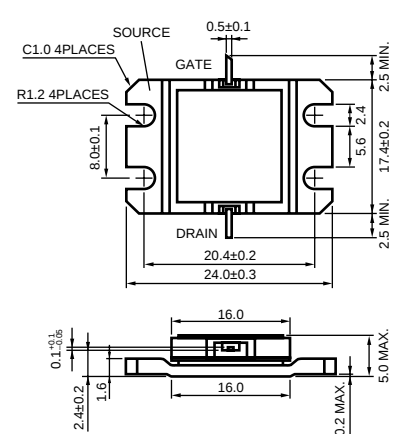
96/99



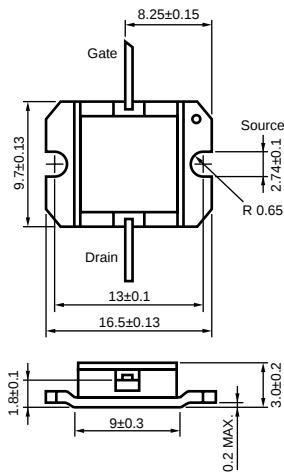
T-61



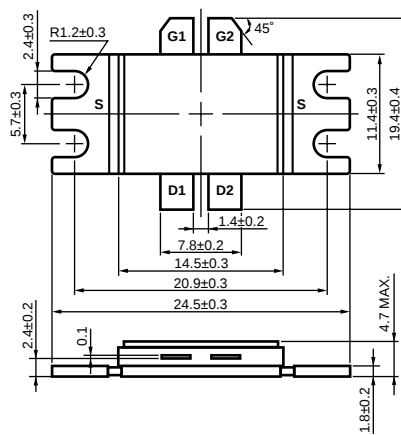
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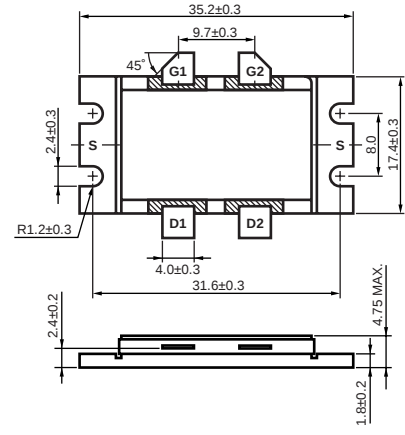
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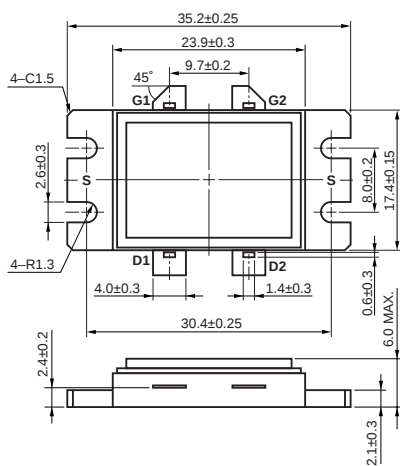
T-86



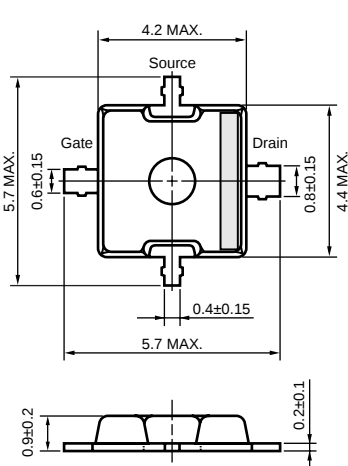
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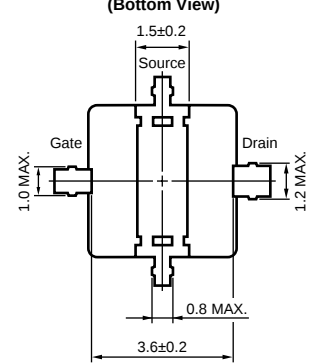
T-92M



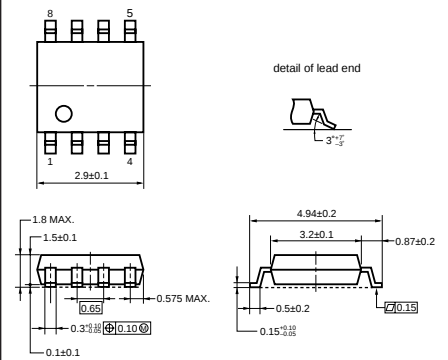
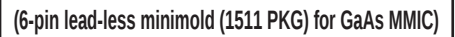
79A



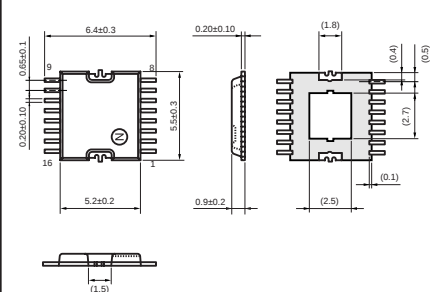
(Bottom View)



4 Ceramic



16HTSSOP (16-pin plastic HTSSOP)



6. INDEX

Part Number	Page	Part Number	Page	Part Number	Page
3SK299	11	NE71383B	7	μPG186TQ	16
NE321000	9	NE72218	11	μPG187GR	16
NE3210S01	7	NE722S01	11	μPG188GR	16
NE32500	9	NE850R599A	13	μPG2006TB	16
NE34018	7	NE8500199	13	μPG2008TK	16
NE38018	7	NE8500295-4	13	μPG2009TB	16
NE4210S01	7	NE8500295-6	13	μPG2010TB	16
NE429M01	7	NE8500295-8	13	μPG2012TB	16
NE52418	9	NE960R275	13	μPG2012TK	16
NE6500179A	13	NE960R575	13	μPG2106TB	14
NE6500379A	13	NES1823M-240	13	μPG2110TB	14
NE6500496	13	MC-78xx Series	18	μPG2115TB	14
NE6501077	13	μPG152TA	16	μPG2126TB	14
NE650R279A	13	μPG153TB	16	μPG2128TB	14
NE650R479A	13	μPG154TB	16	μPG2130TB	14
NE6510179A	13	μPG155TB	16	μPG2301TQ	16
NE6510379A	13	μPG158TB	16	μPG2304TK	14
NE651R479A	13	μPG181GR	16		
NE71300	9	μPG183GR	16		

7. REFERENCE

Document Name	Document No.
NEC semiconductor device reliability/quality control system ^{Note}	C10983E
Quality grades on NEC semiconductor devices ^{Note}	C11531E
SEMICONDUCTOR SELECTION GUIDE –Products and Packages– ^{Note}	X13769E

Note Published by NEC Corporation

8. WEB SITE INFORMATION

The RF and Microwave homepage has many documents available for viewing or download. Please see our web site. The our web site address is as follows;

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► **Technical issue**

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