

Microwave Semiconductors

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High-Power GaAs MMIC Power Amps

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	IDD (A) (typ.)	IM3 (dBc)
*TMD2121-3A ☆	2.05 to 2.23	35.0	29.0	1.6	-52 ◆
*TMD3438-1 ●	3.4 to 3.8	29.0 ⊕	29.0 ⊕	0.5 ⊗	—

☆: VDD = 10 V, IDSet = 1.2 A

*: New product

◆: 2 tone test, Po = 17 dBm single carrier level

●: VDD = 7.5 V, VGG = -5 V (Surface mounted type)

⊕: min.

⊗: @Pin = -6 dBm

Broad-Band Power GaAs MMICs (C-band)

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	IDD (A) (typ.)	VSWRi (max)
TMD0305-2	3.4 to 5.1	33.0	22.0	1.6	3.0
TMD0507-2A	5.1 to 7.2	33.0	22.0	1.6	3.0
TMD5872-2	5.8 to 7.2	34.0	28.0	1.2	3.0
TMD0708-2	7.1 to 8.5	33.0	22.0	1.7	3.0

VDD1 = VDD2 = VDD3 = 10 V, VGG = -5 V

IDD = IDD1 + IDD2 + IDD3

High-Power, High-Gain GaAs MMICs (Ku-band)

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	IDD (A) (typ.)	VSWRi (max)
TMD1414-2C	13.75 to 14.5	34.0	24.0	1.4	2.5

VDD = 7 V, VGG = -5 V (for TMD1414-2C)

High-Power GaAs FETs

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	η add (%) (typ.)	IDSS ≡ IDSS/2	
					Ftest (GHz)	VDS (V)
S8834	2 to 10	21.0	9.0	27	8	10
◇ JS8834-AS						
S8835		24.0	8.0	26	8	10
◇ JS8835-AS						
S8836A ●		29.5	7.5	30	8	10
S8836B						
◇ JS8836A-AS		32.0	7.0	28	8	10
S8837A ●						
◇ JS8837A-AS		33.5	5.5	25	8	10
S8838A ●						
◇ JS8838A-AS	2 to 18	21.5	9.0	21	15	10
S8850A						
◇ JS8850A-AS		21.5	9.0	21	15	10
		20.5	9.0	20	15	8
		20.0	8.5	18	18	
S8851		24.0	8.0	26	15	10
◇ JS8851-AS						
◇ JS8851-AS		23.0	7.0	18	18	10
◇ JS8853-AS	28.0	7.0	25	15	10	
						S8855
◇ JS8855-AS	28.0	7.0	25	15	10	
						S8855
◇ JS8855-AS	27.0	6.0	18	18	10	
						S8855
◇ JS8855-AS	31.5	6.5	23	15	10	
						S8855
◇ JS8855-AS	31.5	7.0	23	15	10	
						S8855
◇ JS8855-AS	31.0	6.0	18	18	10	
						S8855
◇ JS8892-AS	2 to 30	21.0	6.5	16	23	7
◇ JS8893-AS		24.0	6.0	15	23	7
◇ JS8894-AS		27.0	6.0	15	23	7

Note: JS denotes a chip product.

◇: Dry-packed product

●: Frequency: 6 GHz to 9 GHz

High-Power GaAs FETs (internally matched)

Product No.	Frequency (GHz)	P1dB (dBm)	G1dB (dB)	η add (%)
		(typ.)	(typ.)	(typ.)
VDS = 10 V, IDS ≐ IDS/2				
TNM1800-7○	1.8	39.5	10.0	40
TPM1818-14Δ		42.0	14.0	38
TPM1818-30Δ		44.5	12.0	35
S9G07A	1.9	33.5	14.0	43
S9G08A		42.5	13.0	42
S9G09A		44.0	13.0	43
TPM1919-40Δ	1.9	46.0	13.0	47
TPM1919-40-311Δ		47.0	13.0	49
TPM1919-60Δ		48.0	13.0	40
TPM2323-14Δ	2.3	42.0	12.0	37
TPM2323-30Δ		44.5	11.5	35
TPM2323-60Δ		48.0	10.0	39
TNM2600-7○	2.6	39.5	8.5	38
TPM2626-14Δ		42.0	12.0	37
TPM2626-30Δ		44.5	11.5	35
TPM2626-30-301		46.0	12.0	47
S9G66A○	2.7	30.5	12.0	47
S9G67A○		35.5	10.0	46
S9G77AΔ	3.7	33.0□	10.5□	34□
TIM3536-60	3.5 to 3.6	48.0◇	9.0◇	38◇

Product No.	Frequency (GHz)	P1dB (dBm)	G1dB (dB)	η add (%)	VDS (V)
		(typ.)	(typ.)	(typ.)	
IDS ≐ IDS/2					
TIM8596-2	8.5 to 9.6	33.5	7.5	24	9
TIM8596-4		36.5	7.5	24	9
TIM8596-8		39.5	6.0	22	9
TIM0910-2	9.5 to 10.5	33.5	7.5	24	9
TIM0910-4		36.5	7.5	24	9
TIM0910-5		37.5	7.0	25	9
TIM0910-8		39.5	6.0	22	9
TIM0910-10		40.5	6.0	23	9
TIM0910-15		42.0	7.0	31	9
TIM1011-2	10.7 to 11.7	33.5	7.5	24	9
TIM1011-4		36.5	7.5	24	9
TIM1011-5		37.5	7.0	25	9
TIM1011-8		39.5	6.0	22	9
TIM1011-10		40.5	6.0	23	9
TIM1011-15		42.0	7.0	31	9
TIM1112-2	11.7 to 12.7	33.5	7.5	24	9
TIM1112-4		36.5	7.5	24	9
TIM1112-8		39.5	5.0	20	9
TIM1213-2	12.7 to 13.2	33.5	7.5	24	9
TIM1213-4		36.5	7.5	24	9
TIM1213-8		39.5	5.0	20	9
TIM1213-10		40.5	6.0	23	9
TIM1213-15		42.0	6.0	29	9
TIM1414-2	14.0 to 14.5	33.5	6.5	23	9
TIM1414-4		36.5	6.0	22	9
TIM1414-4A		36.5	6.5	23	9
TIM1414-5		37.5	6.0	23	9
TIM1414-7		38.5	6.5	27	9
TIM1414-8		39.5	5.0	20	9
TIM1414-10A●		40.5	6.0	23	9
TIM1414-10B■		40.5	6.0	23	9
TIM1414-15		42.0	6.0	29	9
TIM1414-2-252	13.75 to 14.5	33.0	6.0	20	9
TIM1414-4-252		36.0	5.5	19	9
TIM1414-5-252		37.5	5.5	22	9
TIM1414-7-252		38.0	6.0	23	9
TIM1414-8-252		39.0	5.0	18	9
TIM1414-10A-252		39.5	5.5	23	9
TIM1414-15-252	40.5	5.5	20	9	
TIM1415-2	14.5 to 15.0	33.5	6.0	22	9
TIM1415-4		36.5	5.5	21	9
TIM1415-8		39.5	4.5	19	9

- : G1dB (min) = 5.0 dB ■: G1dB (min) = 5.5 dB
- : Non-matched type, Δ: Partially matched type
- : VDS = 9 V for S9G77A
- ◇: VDS = 12 V, IDS (RF OFF) = 9 A for TIM3536-60

High-Power GaAs FETs (internally matched for use in digital communications)

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	IM3 (dBc) (typ.)	
		VDS = 10 V, IDS ≡ IDSS/2			
TIM3742-4L-341	3.3 to 3.6	36.0	10.0	●-45	
TIM3742-8SL-341		39.5	10.0 (min)	◇-45	
TIM3742-16SL-341		42.5	10.0 (min)	■-45	
TIM3742-30SL-341		45.0	10.0 (min)	◆-45	
TIM3742-45SL-341		46.5	10.0 (min)	⊠-45	
TIM3742-4L	3.7 to 4.2	36.0	10.0	●-45	
TIM3742-4SL		36.5	10.5	⊙-45	
TIM3742-8L		39.0	9.5	▲-45	
TIM3742-8SL		39.5	10.0	◇-45	
TIM3742-16L		42.5	9.0	■-44	
TIM3742-16SL		42.5	9.5	■-45	
TIM3742-30L		45.0	10.0	◆-45	
TIM3742-30SL		45.0	10.0	◆-45	
TIM4450-4L		4.4 to 5.0	36.0	9.0	●-45
TIM4450-8L			39.0	8.5	▲-45
TIM4450-16L	42.5		8.0	■-44	
TIM4450-30L	45.0		9.5	◆-45	
TIM4450-45SL	46.5		9.5	⊠-45	
TIM5053-8L	5.0 to 5.3	39.0	9.0	▲-45	
TIM5053-16L		42.5	8.0	■-45	
TIM5053-30L		45.0	9.0	◆-45	
TIM5053-35SL	5.3 to 5.9	45.5	9.0	○-45	
TIM5359-4L		36.0	9.0	●-45	
TIM5359-8L		39.0	8.5	▲-45	
TIM5359-16L		42.5	7.5	■-45	
TIM5359-30L		45.0	8.5	◆-45	
TIM5359-35SL		45.5	8.5	○-45	
TIM5359-45SL		46.5	9.0	⊠-45	
TIM5964-4L		5.9 to 6.4	36.0	8.5	●-45
TIM5964-4SL	36.5		9.0	⊙-45	
TIM5964-7L	39.0		9.0	◇-45	
TIM5964-8L	39.0		8.0	▲-45	
TIM5964-8SL	39.5		8.5	◇-45	
TIM5964-14L	42.0		8.5	■-45	
TIM5964-16L	42.5		7.0	■-45	
TIM5964-16LA	42.5		8.0	■-45	
TIM5964-16SL	42.5		8.0	■-45	
TIM5964-30L	45.0		8.0	◆-45	
TIM5964-30LA	45.0		9.0	◆-45	
TIM5964-30SL	45.0		8.0	◆-45	
TIM5964-35SL	45.5		8.0	○-45	
TIM5964-35SLA	45.5		9.0	○-45	
TIM5964-45SL	46.5		9.0	⊠-45	
TIM5964-60SL	48.0		8.5	#-45	
TIM5964-4-251	5.9 to 6.75		36.0	8.0 (min)	—
TIM5964-8SL-251			39.5	8.0 (min)	◇-45
TIM5964-16SL-251			42.5	8.0 (min)	■-45
TIM5964-30L-251			44.5	8.0	◆-45
TIM5964-35SLA-251		45.5	9.0	○-45	
TIM6472-4L	6.4 to 7.2	36.0	8.0	●-45	
TIM6472-4SL		36.5	8.0	⊙-45	
TIM6472-7L		39.0	8.0	◇-45	
TIM6472-8L		39.0	7.0	▲-45	
TIM6472-8SL		39.5	7.5	◇-45	
TIM6472-14L		42.0	7.5	■-45	
TIM6472-16L		42.5	6.5	■-45	
TIM6472-16SL		42.5	7.0	■-45	
TIM6472-30L		44.5	7.0	◆-43	
TIM6472-30SL		45.0	7.0	◆-45	
TIM6472-35SL		45.5	8.0	○-45	
TIM6472-45SL		46.5	8.0	⊠-45	

Product No.	Frequency (GHz)	P1dB (dBm) (typ.)	G1dB (dB) (typ.)	IM3 (dBc) (typ.)	
		VDS = 10 V, IDS ≡ IDSS/2			
TIM7179-4SL	7.1 to 7.9	36.5	7.5	⊙-45	
TIM7179-7L		38.5	7.0	◇-43	
TIM7179-8L		39.0	5.5	▲-44	
TIM7179-8SL		39.5	7.0	◇-45	
TIM7179-14L		41.5	6.5	■-43	
TIM7179-16L		42.0	5.0	■-42	
TIM7179-16SL		42.5	6.5	■-45	
TIM7179-30L		44.5	6.5	◆-43	
TIM7785-4SL		7.7 to 8.5	36.5	6.5	⊙-45
TIM7785-7L			38.5	7.0	◇-43
TIM7785-8L	39.0		5.0	▲-44	
TIM7785-8SL	39.5		6.0	◇-45	
TIM7785-14L	41.5		6.5	■-43	
TIM7785-16L	42.0		4.5	■-42	
TIM7785-16SL	42.5		5.5	■-45	
TIM7785-30L	44.5		6.0	◆-43	
TIM7785-30SL	45.0		6.0	◆-45	
TIM7785-45SL	46.5		6.0	⊠-45	
TIM7984-14L	7.9 to 8.4	42.0	6.5	■-43	
TIM7984-30L		45.0	6.0	◆-45	
TIM0910-15L★	9.5 to 10.5	42.0	7.0	▼-45	
TIM1011-4L★	10.7 to 11.7	36.5	7.5	●-45	
TIM1011-8L★		39.5	6.0	▲-45	
TIM1011-10L★		40.5	6.0	⊕-45	
TIM1011-15L★		42.0	7.0	▼-45	
TIM1213-4L★	12.7 to 13.2	36.5	7.5	●-45	
TIM1213-8L★		39.5	5.0	▲-45	
TIM1213-10L★		40.5	6.0	⊕-45	
TIM1213-15L★		42.0	6.0	▼-45	
TIM1414-4L★	14.0 to 14.5	36.5	6.0	●-45	
TIM1414-8L★		39.5	5.0	▲-45	
TIM1414-10L★		40.5	5.0	⊕-45	
TIM1414-10LA★		40.5	6.0	⊕-45	
TIM1414-15L★		42.0	6.0	▼-45	

★: VDS = 9 V, IDS ≡ IDSS/2

- Note) ● : 2-tone test Po = 25 dBm (single-carrier level)
 ⊙ : 2-tone test Po = 25.5 dBm (single-carrier level)
 □ : 2-tone test Po = 27 dBm (single-carrier level)
 ▲ : 2-tone test Po = 28 dBm (single-carrier level)
 ◇ : 2-tone test Po = 28.5 dBm (single-carrier level)
 ⊕ : 2-tone test Po = 29 dBm (single-carrier level)
 ▼ : 2-tone test Po = 30 dBm (single-carrier level)
 ■ : 2-tone test Po = 31.5 dBm (single-carrier level)
 ☆ : 2-tone test Po = 33 dBm (single-carrier level)
 ◆ : 2-tone test Po = 34.5 dBm (single-carrier level)
 ○ : 2-tone test Po = 35 dBm (single-carrier level)
 ⊠ : 2-tone test Po = 35.5 dBm (single-carrier level)
 # : 2-tone test Po = 36.5 dBm (single-carrier level)

Isolators (drop-in type)

Product No.	Operating Frequency (GHz)		VSWR	Isolation (dB)	Insertion Loss (dB)	Reflection Power-Handling Capability (W)	Outline Type	Remarks
	Min	Max						
FI3438-3 R/L★	3.4	3.8	1.3	18	0.4	3	1	<ul style="list-style-type: none"> • Transmission power-handling capability = 10 W • Temperature range Ta = -20° to +65°C
FI3438-10 R/L★	3.4	3.8	1.3	18	0.4	10	1	
* FI3536-5 R★	3.5	3.6	1.2	20	0.5	5	1	
FI3642-3 R/L★	3.6	4.2	1.2	20	0.35	3	1	
FI3642-10 R/L★	3.6	4.2	1.2	20	0.35	10	1	
FI4450-3 R/L★	4.4	5.0	1.2	20	0.35	3	1	
FI4450-10 R/L★	4.4	5.0	1.2	20	0.35	10	1	
FI5360-3 R/L★	5.3	6.0	1.2	20	0.35	3	1	
FI5360-10 R/L★	5.3	6.0	1.2	20	0.35	10	1	
FI5964/A-3 R/L★	5.9	6.4	1.2	20	0.35	3	1&2	
FI5964/A-10 R/L★	5.9	6.4	1.2	20	0.35	10	1&2	
FI6472/A-3 R/L★	6.4	7.2	1.2	20	0.35	3	1&2	
FI6472/A-10 R/L★	6.4	7.2	1.2	20	0.35	10	1&2	
* FI6472/A-16 R/L★	6.4	7.2	1.2	20	0.4	16	1	
FI7179/A-3 R/L★	7.1	7.9	1.2	20	0.35	3	1&2	
FI7179/A-10 R/L★	7.1	7.9	1.2	20	0.35	10	1&2	
FI7785/A-3 R/L★	7.7	8.5	1.2	20	0.35	3	1&2	
FI7785/A-10 R/L★	7.7	8.5	1.2	20	0.35	10	1&2	

★: R denotes clockwise; L denotes counterclockwise. Outline type: 1-(A suffix) 15 × 25 mm, 2-(no suffix) 12 × 20 mm

*: New product

