



DATA SHEET

O K I G a A s P R O D U C T S

KGL4216

10-Gbps T-Flip Flop IC

0.2 μ m Gate Length GaAs MESFET Technology

February 2000



Oki Semiconductor



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10-Gbps GaAs T-Flip Flop IC

INTRODUCTION

Oki Semiconductor's KGL4216 is a 10-Gbps T-Flip Flop IC designed for ultra high-speed digital communications systems. The KGL4216 uses 0.2- μm gate length GaAs MESFETs and Oki's unique MCFF (Memory Cell type Flip Flop) technology to achieve operations of over 11-GHz. The KGL4216 is available as a 24-pin ceramic packaged device. Due to the KGL4216's high sensitivity, capacitive coupling is recommended for the KGL4216's I/O connections.

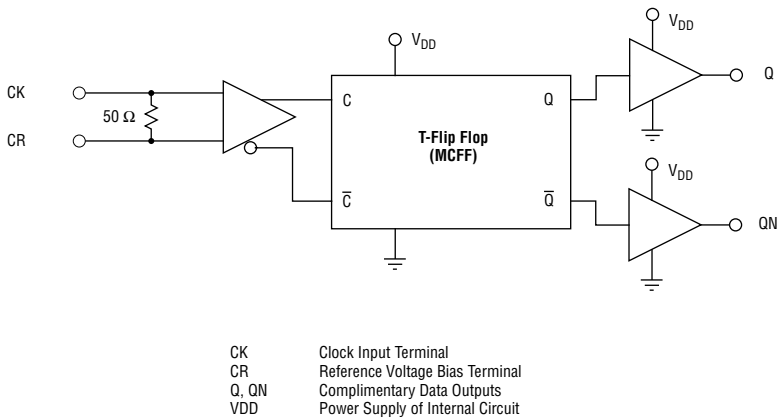
FEATURES

- High-speed operation: 11-Gbps data rate (min)
- Low-power dissipation: 400 mW (typ.) using 2-V power-supply
- 0.2- μm gate length GaAs MESFET process
- MCFF (Memory Cell type Flip Flop) technology
- 24-pin ceramic package

APPLICATION

- High-speed optical communication systems: 10 Gbps
- High-speed test equipment

BLOCK DIAGRAM



ELECTRICAL CHARACTERISTICS

Absolute Maximum Ratings

Parameter	Symbol	Min.	Max.	Units
Supply Voltage	V _{DD}	-0.3	2.3	V
Clock Input Voltage	V _{CI}	-0.3	1.5	V
Clock Reference Bias Voltage	V _{RI}	-0.3	1.5	V
Temperature at Package Base under Bias	T _s	-45	100	°C
Storage Temperature	T _{st}	-45	125	°C

Exceeding these maximum ratings could cause immediate damage or lead to permanent deterioration of the device.

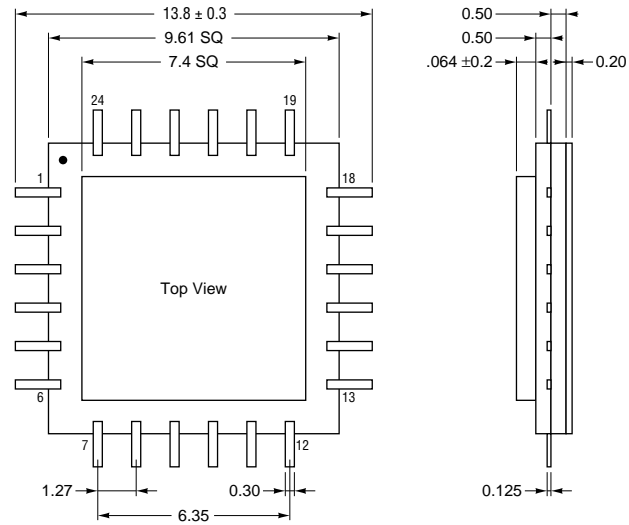
Electrical Characteristics

V_{DD} = 2 V ± 0.1 V, T_s = 0°C to 70°C

Parameter	Symbol	Min.	Typ.	Max.	Units
Maximum Operating Frequency Range	OFR	11			GHz
Power Dissipation	PW		0.4	0.5	W
Clock Input Voltage Swing	V _I	0.3	0.8	1.2	V _{pp}
Output Voltage Swing	V _O	0.4	0.6	0.8	V _{pp}

PACKAGE DIMENSIONS

(Units: mm)



Dimension in mm.

Pin Configuration

Pin No.	Description	Pin No.	Description	Pin No.	Description	Pin No.	Description
1	GND	7	GND	13	GND	19	CR
2	Q	8	GND	14	GND	20	VDD
3	GND	9	GND	15	GND	21	VDD
4	GND	10	NC	16	GND	22	GND
5	QN	11	NC	17	CK	23	GND
6	GND	12	NC	18	GND	24	GND

Notes:

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