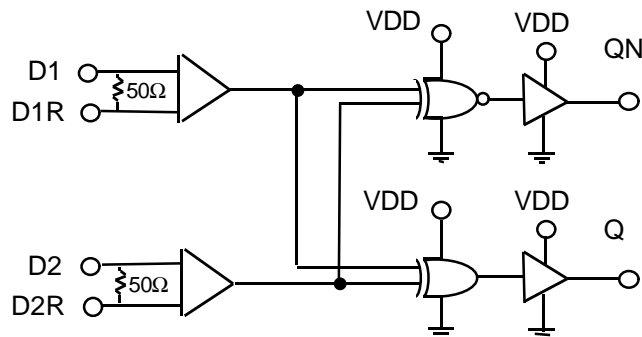


KGL4203C**Preliminary**

EXOR/NOR IC

DESCRIPTION

KGL4203C is EXOR/NOR IC. By using of DCFL (Direct Coupled FET Logic), high speed operation of 12.5Gb/s and low power consumption has been realized. Capacitive coupling is recommended for data input/output interfaces.

FUNCTION DIAGRAM

D1, D2: Data Inputs
 D1R, D2R: RF Bypasses for Data Threshold Level Stability
 Q, QN: Complementary Data Outputs
 VDD: Power Supply

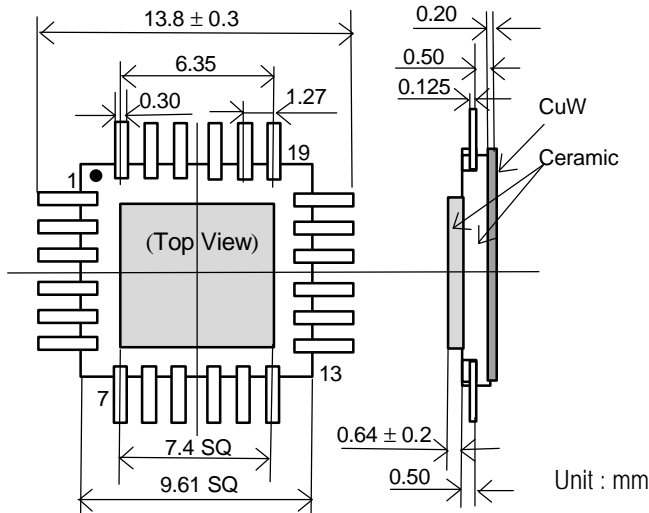
ABSOLUTE MAXIMUM RATINGS

Items	Symbol	Min.	Max.	Units
Supply Voltage	V_{DD}	-0.3	2.3	V
Data Input Voltage (D1, D2)	VDI	-0.3	1.5	V
Temperature at Package Base under Bias	T_s	-45	100	°C
Storage Temperature	T_{st}	-45	125	°C

ELECTRICAL CHARACTERISTICS $V_{DD} = 2.0 \pm 0.1$ V, $T_s = 0$ to 70°C

Items	Symbol	Min.	Typ.	Max.	Units
Maximum Operating Data Bit Rate	DAR	12.5	—	—	Gb/s
Power Dissipation	PW	—	0.54	0.68	W
Data Input Voltage Swing (D1, D2)	DIS	0.5	—	0.9	V _{pp}
Data Output Voltage Swing (Q, QN)	DOS	0.7	1.0	1.2	V _{pp}
Output (Q, QN) Rise time and Fall time	TRF	—	30	40	ps
Propagation Delay	TPD	T.B.D.	310	T.B.D.	ps

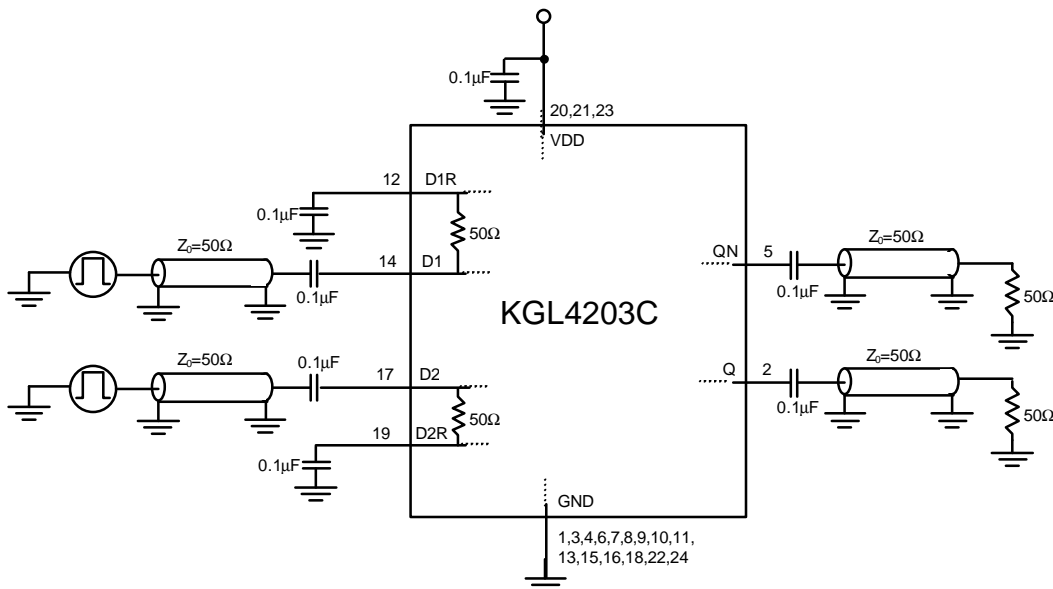
PACKAGE DIMENSIONS



PIN ASSIGNMENT

No.	Symbol	No.	Symbol
1	GND	13	GND
2	Q	14	D1
3	GND	15	GND
4	GND	16	GND
5	QN	17	D2
6	GND	18	GND
7	GND	19	D2R
8	GND	20	VDD
9	GND	21	VDD
10	GND	22	GND
11	GND	23	VDD
12	D1R	24	GND

CONNECTION EXAMPLE

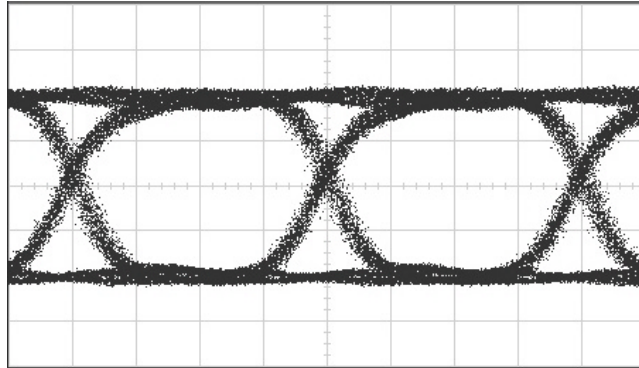


NOTE

- Capacitive coupling is recommended for I/O terminals. (D1, D2, Q, QN)
- D1R and D2R are RF bypass terminals for data threshold level stability and should be connected to ground through RF capacitors (0.1μF). The data threshold level is fixed by the internal circuits, or by the voltage applied from external power supply.

TYPICAL CHARACTERISTICS

Output Wave Form



Vert. : 200mV/div. Horiz. : 20ns/div

Measurement Condition
12.5Gb/s
 2^{31-1} PRBS
2.0V PW: 410mV

Input-Data
Amplitude: 300mVpp
Jitter: 16ps
Rise Time: 18ps
Fall Time: 17ps

Output
Amplitude: 780mVpp
Jitter: 17ps
Rise Time: 20ps
Fall Time: 16ps

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