Q

3.3 Volt CMOS
8-Bit
Buffers/Line Drivers

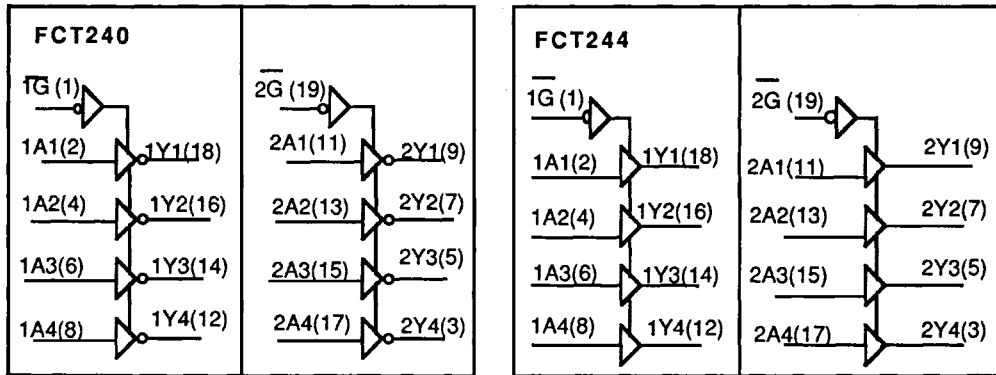**QS54/74FCT3240**
QS54/74FCT3244

FEATURES/BENEFITS

- Pin and function compatible to the 74F240/4 74FCT 240/4 and 74FCT240T/4T
- CMOS power levels: <7.5 mW static
- Available in DIP, ZIP, SOIC, QSOP, LCC, HQSOP
- Undershoot clamp diodes on all inputs
- Ground bounce controlled outputs

- JEDECT spec compatible
- Standard through C speed grades
- Iol = 24 mA Com.
- TTL-compatible input and output levels
- Military product compliant to MIL-STD-883

DESCRIPTION

The FCT3240 and FCT3244 are 8-bit buffers/line drivers with three-state outputs that are ideal for driving high-capacitance loads as in memory address and data buses. All inputs have clamp diodes for undershoot noise suppression and all outputs have ground bounce suppression (see QSI Application Note AN-001).

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FUNCTIONAL BLOCK DIAGRAM

FCT240

$\overline{1G}$ (1)
1A1(2)   1Y1(18)
1A2(4)   1Y2(16)
1A3(6)   1Y3(14)
1A4(8)   1Y4(12)

$\overline{2G}$ (19)
2A1(11)   2Y1(9)
2A2(13)   2Y2(7)
2A3(15)   2Y3(5)
2A4(17)   2Y4(3)

FCT244

$\overline{1G}$ (1)
1A1(2)   1Y1(18)
1A2(4)   1Y2(16)
1A3(6)   1Y3(14)
1A4(8)   1Y4(12)

$\overline{2G}$ (19)
2A1(11)   2Y1(9)
2A2(13)   2Y2(7)
2A3(15)   2Y3(5)
2A4(17)   2Y4(3)

ABSOLUTE MAXIMUM RATINGS

Supply Voltage to Ground... -0.5V to +4.6V
DC Output Voltage V_O .... -0.5V to VCC+0.5V
DC Input Voltage V_I .... -0.5V to VCC+0.5V
AC Input Voltage (for a pulse width ≤20 ns)................................. -3.0V
DC Input Diode Current with V_I<0.. -20 mA
DC Output Diode Current with V_O <0...................................... -60 mA
DC Output Current Max. sink current/pin................................. 60 mA
Maximum Power Dissipation... 0.5 watts
T_{STG}Storage Temperature... -65° to +165°C

DC ELECTRICAL CHARACTERISTICS OVER OPERATING RANGE

Commercial T_A=0°C to 70°C, V_{CC}=3.3V±0.3V

Symbol	Parameter	Test Conditions		Min	Typ (1)	Max	Unit
Vih	Input High Voltage	Logic HIGH for All Inputs		2.0	-	Vcc-0.5	Volts
Vil	Input LOW Voltage	Logic LOW for All Inputs		-0.5	-	0.8	
ΔVt	Input Hysterisis	Vtlh - Vthl for All Inputs		-	0.2	-	
|lih| |lil|	Input Current Input HIGH or LOW	Vcc = MAX	0 ≤ Vin < Vcc	-	-	5	μA
|loz|	Off State Output Current (Hi-Z)	Vcc = MAX, 0 ≤ Vin ≤ Vcc		-	-	5	
los	Short Circuit Current	Vcc = MAX, Vo = GND (2,3)		-60	-	-225	mA
Vic	Input Clamp Voltage	Vcc = MIN, Iin = 18 mA (3)		-	-0.7	-1.2	Volts
Voh	Output HIGH Voltage	Vcc = MIN	Ioh = 100μA	Vcc-0.2	-	-	Volts
			Ioh = 8mA	Vcc-0.6	-	-	
Vol	Output LOW Voltage	Vcc = MIN	Iol = 100μA	-	-	0.2	
			Iol = 16mA	-	-	0.4	
			Iol = 24mA	-	-	0.5	

Notes:
1. Typical values indicate V_{CC}=3.3V and T_A=25°C.
2. Not more than one output should be shorted and the duration is ≤1 second.
3. These parameters are guaranteed by design but not tested.