

CMOS

IDTQS74FCT158AT/CT

DESCRIPTION:

The IDTQS74FCT158T is a high-speed CMOS TTL-compatible, quad, 2-input multiplexer. All inputs have clamp diodes for undershoot noise suppression. All outputs have ground bounce suppression. Outputs will not load an active bus when Vcc is removed from the device.

I1B

I0C

I1C

I0D

I1D

INDUSTRIAL TEMPERATURE RANGE

ABSOLUTE MAXIMUM RATINGS⁽¹⁾

| Symbol | Description | Max | Unit |
|-------------------|--|-------------|------|
| V _{TERM} | Terminal Voltage with Respect to GND | -0.5 to +7 | V |
| T _{STG} | Storage Temperature | -65 to +150 | °C |
| I _{OUT} | DC Output Current Max Current Sink/Pin | +120 | mA |
| I _{IK} | Input Diode Current, V _{IN} < 0 | -20 | mA |
| I _{OK} | DC Output Current, V _{OUT} < 0 | -50 | mA |

NOTE:

1. Stresses greater than those listed under ABSOLUTE MAXIMUM RATINGS may cause permanent damage to the device. This is a stress rating only and functional operation of the device at these or any other conditions above those indicated in the operational sections of this specification is not implied. Exposure to absolute maximum rating conditions for extended periods may affect reliability.

CAPACITANCE (T_A = +25°C, F = 1.0MHz)

| Symbol | Parameter ⁽¹⁾ | Conditions | Typ. | Max. | Unit |
|------------------|--------------------------|-----------------------|------|------|------|
| C _{IN} | Input Capacitance | V _{IN} = 0V | 4 | — | pF |
| C _{OUT} | Output Capacitance | V _{OUT} = 0V | 8 | — | pF |

NOTE:

1. This parameter is measured at characterization but not tested.

PIN DESCRIPTION

INDUSTRIAL TEMPERATURE RANGE

OVER OPERATING RANGE

| Conditions | Min. | Typ. ⁽¹⁾ | Max. | Unit |
|-----------------------------|------|---------------------|---------|---------|
| el | 2 | — | — | V |
| l | — | — | 0.8 | V |
| | — | 0.2 | — | V |
| $0 \leq V_{IN} \leq V_{CC}$ | — | — | ± 5 | μA |
|) | -60 | — | — | mA |
| = 25°C ⁽²⁾ | — | -0.7 | -1.2 | V |
| $I_{OH} = -15mA$ | 2.4 | — | — | V |
| $I_{OL} = 48mA$ | — | — | 0.5 | V |

INDUSTRIAL TEMPERATURE RANGE

OPERATING RANGE⁽¹⁾

| 74FCT158AT | | 74FCT158CT | | Unit |
|------------|------|------------|------|------|
| | Max. | Min. | Max. | |
| | 5 | 1.5 | 4.3 | ns |
| | 7 | 1.5 | 5.2 | ns |
| | 6 | 1.5 | 4.8 | ns |

INDUSTRIAL TEMPERATURE RANGE

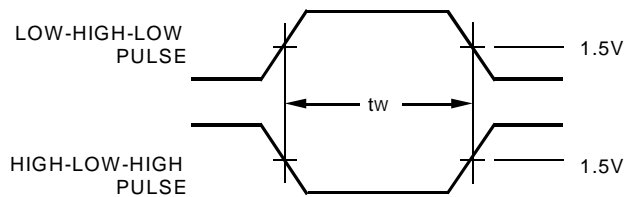
SWITCH POSITION

| Test | Switch |
|---|--------|
| Open Drain Disable Low Enable Low | Closed |
| All Other Tests | Open |

DEFINITIONS:

C_L = Load capacitance: includes jig and probe capacitance.

R_T = Termination resistance: should be equal to Z_{OUT} of the Pulse Generator.



INDUSTRIAL TEMPERATURE RANGE

SO Small Outline IC (gull wing)
Q Quarter Size Small Outline Package
S1 Small Outline IC (gull wing)

158AT High-Speed CMOS Quad 2-Input Multiplexer
158CT

74 -40°C to +85°C