**MOTOROLA INTEGRATED CIRCUITS**

**HTL 660T Series**

| Rating | Value | Unit |
|---|---|---|
| Power Supply Voltage - $V_{CC}$ Continuous | 18 | Vdc |
| Power Supply Voltage - Pulsed, 1.0 s | 20 | Vdc |
| Threshold Voltage | 7.5 | Vdc |
| Temperature Range | -55 to +125 | ℃ |
| Noise Margin | 6.0 | Vdc |

| Function | Type/Pkg | Output Loading Factor | Propagation Delay ns typ | Power Dissipation mW typ/pkg |
|---|---|---|---|---|
| Expandable Dual 4-Input NAND Gate (Active pullup) | 660T/C | 10 | 110 | 88/26 |
| Expandable Dual 4-Input NAND Gate (Passive pullup) | 661T/C | 10 | 125 | 88/26 |
| Expandable Dual 4-Input NAND Line Driver | 662T/C | 30 | 140 | 180/26 |
| Dual J-K Flip-Flop | 663T/C | 9 | 3.0 MHz | 200 |
| Master-Slave R-S Flip-Flop | 664T/C | 8 | 3.0 MHz | 160 |
| Triple Level Translator | 665T/C | DTL = 8<br>TTL = 5.5<br>RTL = 5 | 40 | 83<br>-<br>104 |
| Triple Level Translator | 666T/C | 10 | 75 | 105 |
| Dual Monostable Multivibrator | 667T/C | 10 | 140 | 240 |
| Quad 2-Input NAND Gate (Passive pullup) | 668T/C | 10 | 125 | 176/52 |
| Dual 4-Input Expander | 669T/C | - | - | - |
| Triple 3-Input NAND Gate (Passive pullup) | 670T/C | 10 | 125 | 132/39 |
| Triple 3-Input NAND Gate (Active pullup) | 671T/C | 10 | 110 | 132/39 |
| Quad 2-Input NAND Gate (Active pullup) | 672T/C | 10 | 110 | 176/52 |
| Dual 2-Input AND-OR-INVERT Gate (Active pullup) | 673T/C | 10 | 110 | 160/50 |
| Dual 2-Input | | | | |

| Function | Type/Pkg | Output Loading Factor | Propagation Delay ns typ | Power Dissipation mW typ/pkg |
|---|---|---|---|---|
| AND-OR-INVERT Gate (Passive pullup) | 674T/C | 10 | 125 | 160/50 |
| Dual Pulse Stretcher/Multivibrator | 675T/C | 10 | 150(pins 1,6)<br>110(pins 5,6) | 180 |
| BCD-To-Decimal Decoder-Driver | 676T/E | - | 500 | 380 |
| Hex Inverter w/ Strobe (Active pullup) | 677T/E | 10 | 110 | 246/96 |
| Hex Inverter w/ Strobe (w/o output resistors) | 678T/E | 10 | 125 | 192/96 |
| Dual Lamp/Line Driver | 679T/C | 125 | 0.5 µs typ | 250/30 |
| Hex Inverter (Active pullup) | 680T/C | 10 | 110 | 246/96 |
| Hex Inverter (Open Collector) | 681T/C | 10 | 125 | 192/96 |
| Quad Latch | 682T/E | 10 | 250 | 375 |
| Quad 2-Input Exclusive OR Gate | 683T/C | 10 | - | 380 |
| Decade Counter | 684T/E | 10 | .5 MHz | 480 |
| Binary Counter | 685T/E | 10 | .5 MHz | 480 |
| 4-Bit Shift Register | 686T/E | 10 | .5 MHz | 480 |
| Dual J-K Flip-Flop | 688T/E | 10 | 2.5 MHz | 375 |
| Hex Inverter (High Volume) | 689T/C | 10 | 150 | 173/55 |
| Hex Inverter (Active pullup) | 690T/C | 10 | 150 | 173/55 |
| Hex Inverter/Interface Element | 691T/C | 10 | 300 | 500/150 |
| 250 mA Quad 2-Input NAND Gate (Schmitt Trigger) | 693T/E | 200 | 400 | 300 |
| Dual Interface Element, Line Driver/Receiver (Schmitt Trigger) | 696T/E | 10@ 10 V $V_{CC}$<br>15@ 25 V $V_{CC}$ | 400 | 225/60 |
| Hex Inverter (Passive pullup) | 697T/C | 10 | 125 | 246/96 |
| 500 mA Dual 2-Input AND Gate (Schmitt Trigger) | 699*/C | 400 | 400 | 450 |

* This Part supplied only as $T_A$ = -30°C to +75°C