



**MOTOROLA
INTEGRATED CIRCUITS
660T Series**

These HTL integrated circuits are especially designed to meet the requirements of industrial applications because of their outstanding noise immunity. These circuits provide error-free operation in high noise environments far beyond the tolerance of other IC families. Multifunction packages and broad operating temperature range further tailor this device family to industrial requirements.

MAXIMUM RATINGS

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

**PACKAGING AVAILABLE
(See page 88):
C - 14-LEAD DUAL INLINE E - 16-LEAD DUAL INLINE**

HTL

**FUNCTIONS AND
CHARACTERISTICS**

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 TTL III = 5.5 RTL = 5	40	83 — 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

HTL FUNCTIONS AND CHARACTERISTICS (continued)

FUNCTION	TYPE/PKG	OUTPUT LOADING FACTOR	PROPAGATION DELAY ns typ	POWER DISSIPATION mW typ/pkg
Dual 2-Input AND-OR-INVERT Gate (Active pullup)	673T/C	10	110	160/50
Dual 2-Input AND-OR-INVERT Gate (Passive pullup)	674T/C	10	125	160/50
Dual Pulse Stretcher/Multivibrator	675T/C	10	150(pins 1,6) 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 μ s 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} 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 $T_A = -30^{\circ}\text{C}$ to $+75^{\circ}\text{C}$

PACKAGING INFORMATION

Per MIL-M-38510 Package Case Outline

All of Lansdale's products come in one of the following configurations. On each of the product pages in the catalog, there is a package box. The letters in that box correspond to one of the letters below. This is a guide to how the product is available.

LETTER	DESIGNATION	DESCRIPTION
A	F-1	14-LEAD FP (1/4" X 1/4")
B	F-3	14-LEAD FP (3/16" X 1/4")
C *	D-1	14-LEAD DIP (1/4" X 3/4")
D *	F-2	14-LEAD FP (1/4" X 3/8")
E *	D-2	16-LEAD DIP (1/4" X 7/8")
F *	F-5	16-LEAD FP (1/4" X 3/8")
G	A-1	8-LEAD CAN
H *	F-4	10-LEAD FP (1/4" X 1/4")
I *	A-2	10-LEAD CAN
J *	D-3	24-LEAD DIP (1/2" X 1 1/4")
K *	F-6	24-LEAD FP (3/8" X 5/8")
L	D-9	24-LEAD DIP (1/4" X 1 1/4")
M	A-3	12-LEAD CAN
P	D-4	8-LEAD DIP (1/4" X 3/8")
Q	D-5	40-LEAD DIP (9/16" X 2 1/16")
R	D-8	20-LEAD DIP (1/4" X 1 1/16")
S	F-9	20-LEAD FP (1/4" X 1/2")
V	D-6	18-LEAD DIP (1/4" X 15/16")
W	D-7	22-LEAD DIP (3/8" X 1 1/8")

FP (flat pack)
DIP (dual inline)
CAN (metal can)

* **LANSDALE STANDARD PACKAGES**

CONTACT FACTORY FOR OTHER PACKAGE QUOTES