Data sheet acquired from Cypress Semiconductor Corporation.
Data sheet modified to remove devices not offered.

CY74FCT16374T
CY74FCT162374T

SCCS055C - August 1994 - Revised September 2001

16-Bit Registers

Features

- I_{off} **supports partial-power-down mode operation**
- **Edge-rate control circuitry for significantly improved noise characteristics**
- **Typical output skew < 250 ps**
- **ESD > 2000V**
- **TSSOP (19.6-mil pitch) and SSOP (25-mil pitch) packages**
- **Industrial temperature range of –40°C to +85°C**
- $V_{CC} = 5V \pm 10\%$

CY74FCT16374T Features:

- **64 mA sink current, 32 mA source current**
- **Typical** V_{OLP} **(ground bounce) <1.0V at** $V_{CC} = 5V$, $T_A = 25°C$

CY74FCT162374T Features:

- **Balanced 24 mA output drivers**
- **Reduced system switching noise**
- **Typical** V_{OLP} **(ground bounce) <0.6V at** $V_{CC} = 5V$, $T_A = 25°C$

Functional Description

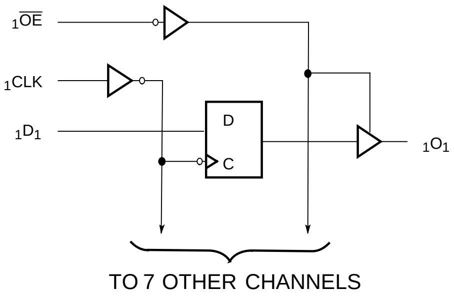
CY74FCT16374T and CY74FCT162374T are 16-bit D-type registers designed for use as buffered registers in high-speed, low power bus applications. These devices can be used as two independent 8-bit registers or as a single 16-bit register by connecting the output Enable (OE) and Clock (CLK) inputs. Flow-through pinout and small shrink packaging aid in simplifying board layout.

This device is fully specified for partial-power-down applications using I_{off}. The I_{off} circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.

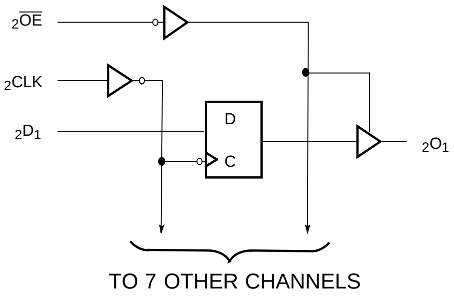
The CY74FCT16374T is ideally suited for driving high-capacitance loads and low-impedance backplanes.

The CY74FCT162374T has 24-mA balanced output drivers with current limiting resistors in the outputs. This reduces the need for external terminating resistors and provides for minimal undershoot and reduced ground bounce. The CY74FCT162374T is ideal for driving transmission lines.

Logic Block Diagrams



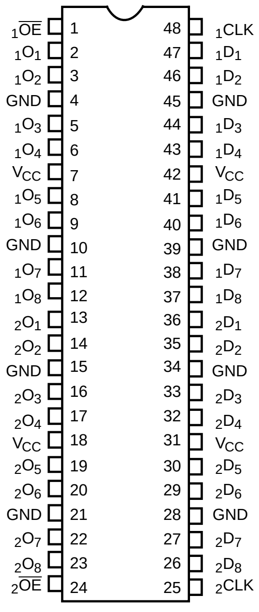
FCT162374-1



FCT162374-2

Pin Configuration

SSOP/TSSOP
Top View



FCT162374-3

Function Table[1]

Inputs			Outputs	
D	CLK	$\overline{OE}$	O	Function
X	L	H	Z	High-Z
X	H	H	Z	
L	↑	L	L	Load Register
H	↑	L	H	
L	↑	H	Z	
H	↑	H	Z	

Pin Description

Name	Description
D	Data Inputs
CLK	Clock Inputs
$\overline{OE}$	Three-State Output Enable Inputs (Active LOW)
O	Three-State Outputs

Maximum Ratings[2, 3]

(Above which the useful life may be impaired. For user guidelines, not tested.)

Storage Temperature	–55°C to +125°C
Ambient Temperature with Power Applied	–55°C to +125°C
DC Input Voltage	–0.5V to +7.0V
DC Output Voltage	–0.5V to +7.0V
DC Output Current (Maximum Sink Current/Pin)	–60 to +120 mA
Power Dissipation	1.0W
Static Discharge Voltage (per MIL-STD-883, Method 3015)	>2001V

Operating Range

Range	Ambient Temperature	V_{CC}
Industrial	–40°C to +85°C	5V ± 10%

Electrical Characteristics Over the Operating Range

Parameter	Description	Test Conditions	Min.	Typ.[4]	Max.	Unit
V_{IH}	Input HIGH Voltage		2.0			V
V_{IL}	Input LOW Voltage				0.8	V
V_H	Input Hysteresis[5]			100		mV
V_{IK}	Input Clamp Diode Voltage	V_{CC}=Min., I_{IN}=–18 mA		–0.7	–1.2	V
I_{IH}	Input HIGH Current	V_{CC}=Max., V_I=V_{CC}			±1	µA
I_{IL}	Input LOW Current	V_{CC}=Max., V_I=GND			±1	µA
I_{OZH}	High Impedance Output Current (Three-State Output pins)	V_{CC}=Max., V_{OUT}=2.7V			±1	µA
I_{OZL}	High Impedance Output Current (Three-State Output pins)	V_{CC}=Max., V_{OUT}=0.5V			±1	µA
I_{OS}	Short Circuit Current[6]	V_{CC}=Max., V_{OUT}=GND	–80	–140	–200	mA
I_O	Output Drive Current[6]	V_{CC}=Max., V_{OUT}=2.5V	–50		–180	mA
I_{OFF}	Power-Off Disable	V_{CC}=0V, $V_{OUT}\leq$4.5V[7]			±1	µA

Output Drive Characteristics for CY74FCT16374T

Parameter	Description	Test Conditions	Min.	Typ.[4]	Max.	Unit
V_{OH}	Output HIGH Voltage	V_{CC}=Min., I_{OH}=–3 mA	2.5	3.5		V
		V_{CC}=Min., I_{OH}=–15 mA	2.4	3.5		V
		V_{CC}=Min., I_{OH}=–32 mA	2.0	3.0		V
V_{OL}	Output LOW Voltage	V_{CC}=Min., I_{OL}=64 mA		0.2	0.55	V

Notes:

1. H = HIGH Voltage Level. L = LOW Voltage Level. X = Don't Care. Z = HIGH Impedance. ↑ = LOW-to-HIGH Transition.
2. Operation beyond the limits set forth may impair the useful life of the device. Unless otherwise noted, these limits are over the operating free-air temperature range.
3. Unused inputs must always be connected to an appropriate logic voltage level, preferably either V_{CC} or ground.
4. Typical values are at V_{CC}= 5.0V, T_A= +25˚C ambient.
5. This parameter is specified but not tested.
6. Not more than one output should be shorted at a time. Duration of short should not exceed one second. The use of high-speed test apparatus and/or sample and hold techniques are preferable in order to minimize internal chip heating and more accurately reflect operational values. Otherwise prolonged shorting of a high output may raise the chip temperature well above normal and thereby cause invalid readings in other parametric tests. In any sequence of parameter tests, I_{OS} tests should be performed last.
7. Tested at +25˚C.

Output Drive Characteristics for CY74FCT162374T

Parameter	Description	Test Conditions	Min.	Typ.[4]	Max.	Unit
I_{ODL}	Output LOW Current[6]	V_{CC}=5V, V_{IN}=V_{IH} or V_{IL}, V_{OUT}=1.5V	60	115	150	mA
I_{ODH}	Output HIGH Current[6]	V_{CC}=5V, V_{IN}=V_{IH} or V_{IL}, V_{OUT}=1.5V	–60	–115	–150	mA
V_{OH}	Output HIGH Voltage	V_{CC}=Min., I_{OH}=–24 mA	2.4	3.3		V
V_{OL}	Output LOW Voltage	V_{CC}=Min., I_{OL}=24 mA		0.3	0.55	V

Capacitance[5] (T_A = +25°C, f = 1.0 MHz)

Parameter	Description	Test Conditions	Typ.[4]	Max.	Unit
C_{IN}	Input Capacitance	V_{IN} = 0V	4.5	6.0	pF
C_{OUT}	Output Capacitance	V_{OUT} = 0V	5.5	8.0	pF

Power Supply Characteristics

Parameter	Description	Test Conditions		Typ.[4]	Max.	Unit
I_{CC}	Quiescent Power Supply Current	V_{CC}=Max.	V_{IN}≤0.2V, V_{IN}≥V_{CC}–0.2V	5	500	µA
ΔI_{CC}	Quiescent Power Supply Current (TTL inputs HIGH)	V_{CC}=Max.	V_{IN}=3.4V[8]	0.5	1.5	mA
I_{CCD}	Dynamic Power Supply Current[9]	V_{CC}=Max., One Input Toggling, 50% Duty Cycle, Outputs Open, $\overline{OE}$=GND	V_{IN}=V_{CC} or V_{IN}=GND	60	100	µA/ MHz
I_C	Total Power Supply Current[10]	V_{CC}=Max., f_0=10 MHz, f_1=5 MHz, 50% Duty Cycle, Outputs Open, One Bit Toggling, $\overline{OE}$=GND	V_{IN}=V_{CC} or V_{IN}=GND	0.6	1.5	mA
			V_{IN}=3.4V or V_{IN}=GND	1.1	3.0	mA
		V_{CC}=Max., f_0=10 MHz, f_1=2.5 MHz, 50% Duty Cycle, Outputs Open, Sixteen Bits Toggling, $\overline{OE}$=GND	V_{IN}=V_{CC} or V_{IN}=GND	3.0	5.5[11]	mA
			V_{IN}=3.4V or V_{IN}=GND	7.5	19.0[11]	mA

Note:

8. Per TTL driven input (V_{IN}=3.4V); all other inputs at V_{CC} or GND.
9. This parameter is not directly testable, but is derived for use in Total Power Supply calculations.
10. I_C = $I_{QUIESCENT} + I_{INPUTS} + I_{DYNAMIC}$
    I_C = $I_{CC}+\Delta I_{CC}D_HN_T+I_{CCD}(f_0/2 + f_1N_1)$
    I_{CC} = Quiescent Current with CMOS input levels
    ΔI_{CC} = Power Supply Current for a TTL HIGH input (V_{IN}=3.4V)
    D_H = Duty Cycle for TTL inputs HIGH
    N_T = Number of TTL inputs at D_H
    I_{CCD} = Dynamic Current caused by an input transition pair (HLH or LHL)
    f_0 = Clock frequency for registered devices, otherwise zero
    f_1 = Input signal frequency
    N_1 = Number of inputs changing at f_1
    All currents are in milliamps and all frequencies are in megahertz.
11. Values for these conditions are examples of the I_{CC} formula. These limits are specified but not tested.

Switching Characteristics Over the Operating Range[12]

Parameter	Description	CY74FCT16374T CY74FCT162374T		CY74FCT16374AT CY74FCT162374AT		Unit	Fig. No.[13]
		Min.	Max.	Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay CLK to O	2.0	10.0	2.0	6.5	ns	1, 5
t_{PZH} t_{PZL}	Output Enable Time	1.5	12.5	1.5	6.5	ns	1, 7, 8
t_{PHZ} t_{PLZ}	Output Disable Time	1.5	8.0	1.5	5.5	ns	1, 7, 8
t_{SU}	Set-Up Time HIGH or LOW, D to CLK	2.0		2.0		ns	4
t_H	Hold Time HIGH or LOW, D to CLK	1.5		1.5		ns	4
t_W	CLK Pulse Width HIGH or LOW	5.0		5.0		ns	5
$t_{SK(O)}$	Output Skew[14]		0.5		0.5	ns	

Parameter	Description	CY74FCT16374CT CY74FCT162374CT		Unit	Fig. No.[13]
		Min.	Max.		
t_{PLH} t_{PHL}	Propagation Delay CLK to O	2.0	5.2	ns	1, 5
t_{PZH} t_{PZL}	Output Enable Time	1.5	5.5	ns	1, 7, 8
t_{PHZ} t_{PLZ}	Output Disable Time	1.5	5.0	ns	1, 7, 8
t_{SU}	Set-Up Time HIGH or LOW, D to CLK	2.0		ns	4
t_H	Hold Time HIGH or LOW, D to CLK	1.5		ns	4
t_W	CLK Pulse Width HIGH or LOW	3.3		ns	5
$t_{SK(O)}$	Output Skew[14]		0.5	ns	

Notes:

[12] Minimum limits are specified but not tested on Propagation Delays.

[13] See “Parameter Measurement Information” in the General Information section.

[14] Skew between any two outputs of the same package switching in the same direction. This parameter is ensured by design.

Ordering Information CY74FCT16374T

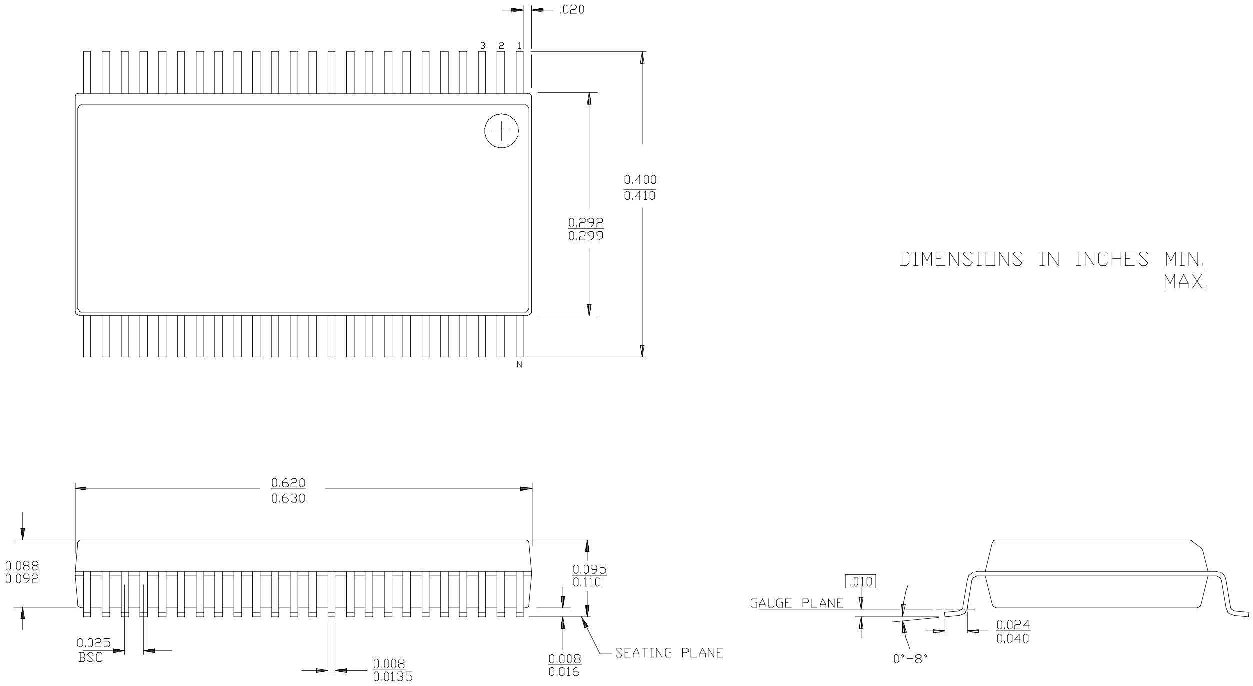
Speed (ns)	Ordering Code	Package Name	Package Type	Operating Range
5.2	CY74FCT16374CTPACT	Z48	48-Lead (240-Mil) TSSOP	Industrial
	CY74FCT16374CTPVC/PVCT	O48	48-Lead (300-Mil) SSOP	
6.5	CY74FCT16374ATPACT	Z48	48-Lead (240-Mil) TSSOP	Industrial
	CY74FCT16374ATPVC/PVCT	O48	48-Lead (300-Mil) SSOP	
10.0	CY74FCT16374TPVC/PVCT	O48	48-Lead (300-Mil) SSOP	Industrial

Ordering Information CY74FCT162374T

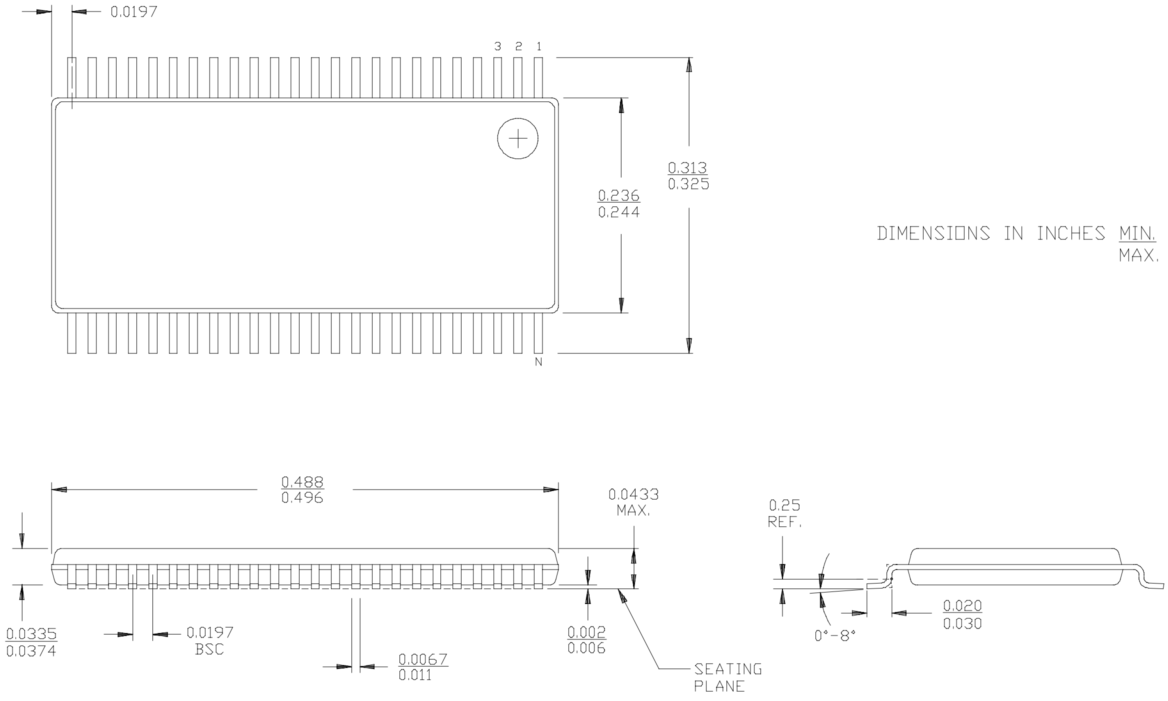
Speed (ns)	Ordering Code	Package Name	Package Type	Operating Range
5.2	74FCT162374CTPACT	Z48	48-Lead (240-Mil) TSSOP	Industrial
	CY74FCT162374CTPVC	O48	48-Lead (300-Mil) SSOP	
	74FCT162374CTPVCT	O48	48-Lead (300-Mil) SSOP	
6.5	74FCT162374ATPACT	Z48	48-Lead (240-Mil) TSSOP	Industrial
	CY74FCT162374ATPVC	O48	48-Lead (300-Mil) SSOP	
	74FCT162374ATPVCT	O48	48-Lead (300-Mil) SSOP	
10.0	CY74FCT162374TPVC/PVCT	O48	48-Lead (300-Mil) SSOP	Industrial

Package Diagrams

48-Lead Shrunk Small Outline Package O48



48-Lead Thin Shrunk Small Outline Package Z48



PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish	MSL Peak Temp (3)
74FCT162374ATPACT	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374ATPVCG4	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374ATPVCT	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374CTPACT	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374CTPVCG4	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374CTPVCT	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT162374ETPACT	OBSOLETE	TSSOP	DGG	48		TBD	Call TI	Call TI
74FCT162374ETPVCT	OBSOLETE	SSOP	DL	48		TBD	Call TI	Call TI
74FCT162374TPVCTG4	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374ATPACTE4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374ATPACTG4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374ATPVCG4	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374ATPVCTG4	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374CTPACTE4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374CTPACTG4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374CTPVCG4	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374CTPVCTG4	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
74FCT16374TPVCG4	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT162374ATPVC	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT162374CTPVC	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT162374ETPAC	OBSOLETE	TSSOP	DGG	48		TBD	Call TI	Call TI
CY74FCT162374ETPVC	OBSOLETE	SSOP	DL	48		TBD	Call TI	Call TI
CY74FCT162374TPVCT	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374ATPACT	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374ATPVC	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374ATPVCT	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374CTPACT	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS &	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status [1]	Package Type	Package Drawing	Pins	Package Qty	Eco Plan [2]	Lead/Ball Finish	MSL Peak Temp [3]
						no Sb/Br)		
CY74FCT16374CTPVC	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374CTPVCT	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT16374ETPAC	OBSOLETE	TSSOP	DGG	48		TBD	Call TI	Call TI
CY74FCT16374ETPACT	OBSOLETE	TSSOP	DGG	48		TBD	Call TI	Call TI
CY74FCT16374ETPVC	OBSOLETE	SSOP	DL	48		TBD	Call TI	Call TI
CY74FCT16374ETPVCT	OBSOLETE	SSOP	DL	48		TBD	Call TI	Call TI
CY74FCT16374TPVC	ACTIVE	SSOP	DL	48	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374ATPACTE4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374ATPACTG4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374ATPVCTG4	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374CTPACTE4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374CTPACTG4	ACTIVE	TSSOP	DGG	48	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
FCT162374CTPVCTG4	ACTIVE	SSOP	DL	48	1000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

[1] The marketing status values are defined as follows:
ACTIVE: Product device recommended for new designs.
LIFEBUY: TI has announced that the device will be discontinued, and a lifetime-buy period is in effect.
NRND: Not recommended for new designs. Device is in production to support existing customers, but TI does not recommend using this part in a new design.
PREVIEW: Device has been announced but is not in production. Samples may or may not be available.
OBSOLETE: TI has discontinued the production of the device.

[2] Eco Plan - The planned eco-friendly classification: Pb-Free (RoHS), Pb-Free (RoHS Exempt), or Green (RoHS & no Sb/Br) - please check http://www.ti.com/productcontent for the latest availability information and additional product content details.
TBD: The Pb-Free/Green conversion plan has not been defined.
Pb-Free (RoHS): TI's terms "Lead-Free" or "Pb-Free" mean semiconductor products that are compatible with the current RoHS requirements for all 6 substances, including the requirement that lead not exceed 0.1% by weight in homogeneous materials. Where designed to be soldered at high temperatures, TI Pb-Free products are suitable for use in specified lead-free processes.
Pb-Free (RoHS Exempt): This component has a RoHS exemption for either 1) lead-based flip-chip solder bumps used between the die and package, or 2) lead-based die adhesive used between the die and leadframe. The component is otherwise considered Pb-Free (RoHS compatible) as defined above.
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

[3] MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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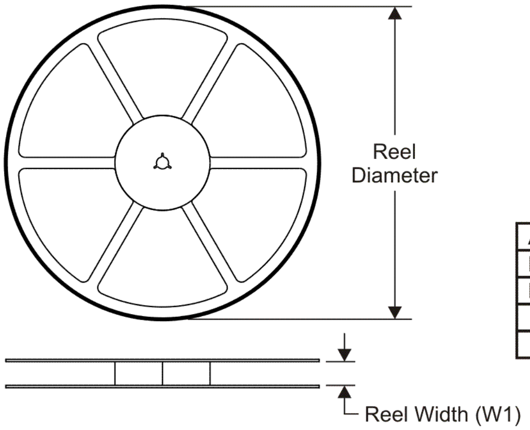
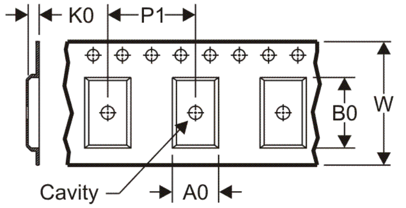
TAPE AND REEL INFORMATION

REEL DIMENSIONS

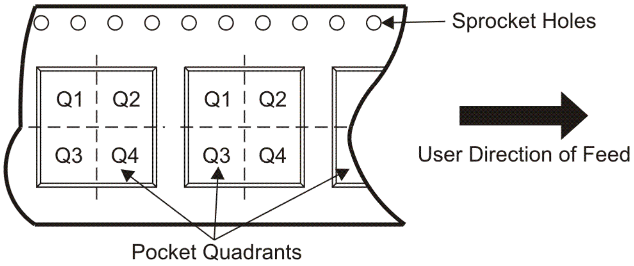


TAPE DIMENSIONS



A0	Dimension designed to accommodate the component width
B0	Dimension designed to accommodate the component length
K0	Dimension designed to accommodate the component thickness
W	Overall width of the carrier tape
P1	Pitch between successive cavity centers

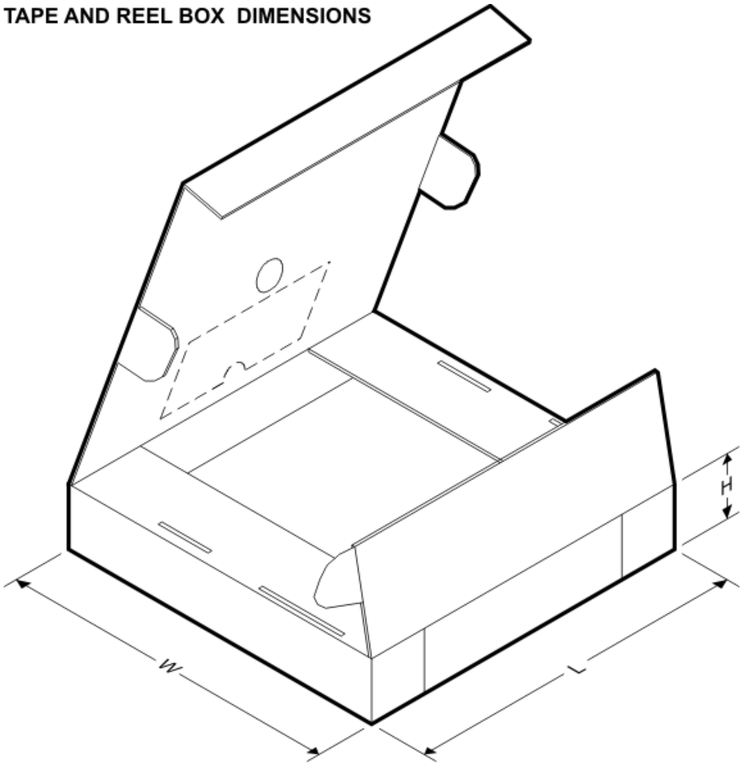
QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
74FCT162374ATPACT	TSSOP	DGG	48	2000	330.0	24.4	8.6	15.8	1.8	12.0	24.0	Q1
74FCT162374ATPVCT	SSOP	DL	48	1000	330.0	32.4	11.35	16.2	3.1	16.0	32.0	Q1
74FCT162374CTPACT	TSSOP	DGG	48	2000	330.0	24.4	8.6	15.8	1.8	12.0	24.0	Q1
74FCT162374CTPVCT	SSOP	DL	48	1000	330.0	32.4	11.35	16.2	3.1	16.0	32.0	Q1
CY74FCT162374TPVCT	SSOP	DL	48	1000	330.0	32.4	11.35	16.2	3.1	16.0	32.0	Q1
CY74FCT16374ATPACT	TSSOP	DGG	48	2000	330.0	24.4	8.6	15.8	1.8	12.0	24.0	Q1
CY74FCT16374ATPVCT	SSOP	DL	48	1000	330.0	32.4	11.35	16.2	3.1	16.0	32.0	Q1
CY74FCT16374CTPACT	TSSOP	DGG	48	2000	330.0	24.4	8.6	15.8	1.8	12.0	24.0	Q1
CY74FCT16374CTPVCT	SSOP	DL	48	1000	330.0	32.4	11.35	16.2	3.1	16.0	32.0	Q1

TAPE AND REEL BOX DIMENSIONS



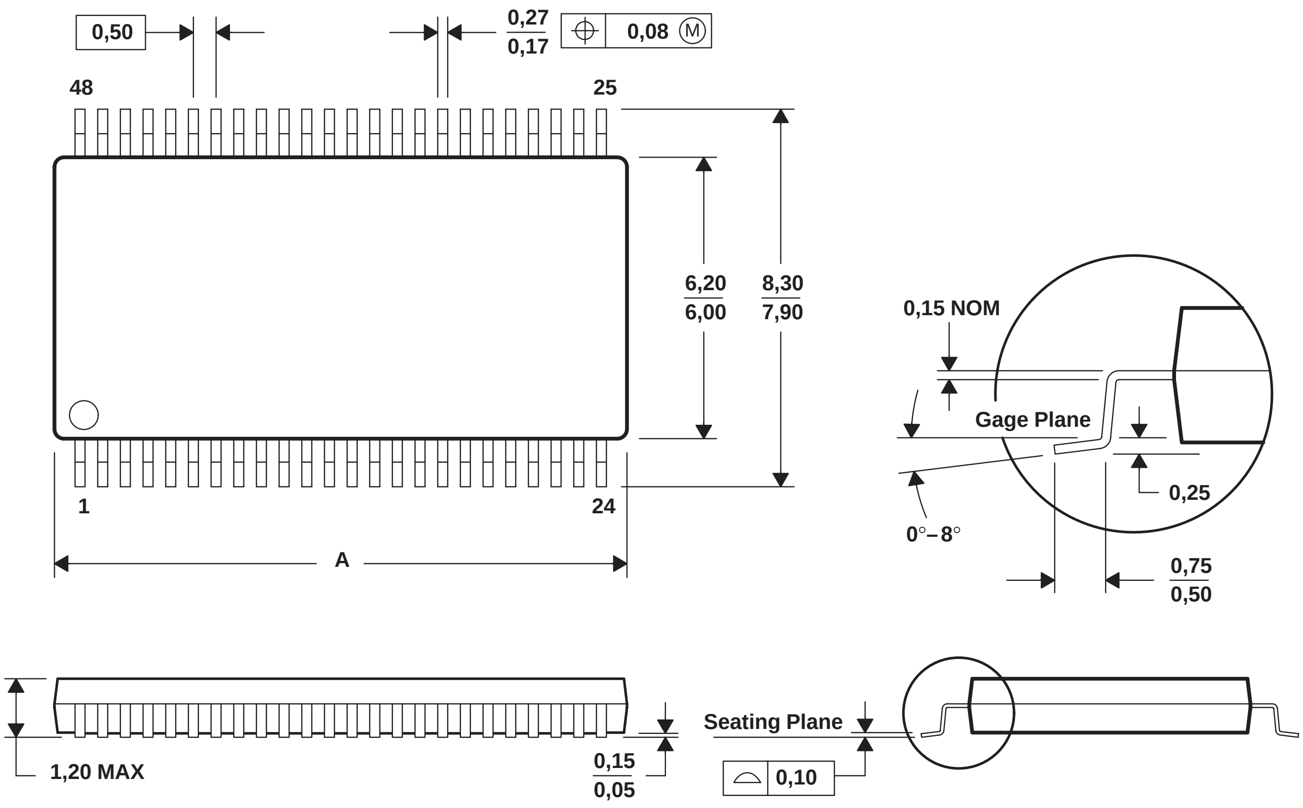
*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
74FCT162374ATPACT	TSSOP	DGG	48	2000	346.0	346.0	41.0
74FCT162374ATPVCT	SSOP	DL	48	1000	346.0	346.0	49.0
74FCT162374CTPACT	TSSOP	DGG	48	2000	346.0	346.0	41.0
74FCT162374CTPVCT	SSOP	DL	48	1000	346.0	346.0	49.0
CY74FCT162374TPVCT	SSOP	DL	48	1000	346.0	346.0	49.0
CY74FCT16374ATPACT	TSSOP	DGG	48	2000	346.0	346.0	41.0
CY74FCT16374ATPVCT	SSOP	DL	48	1000	346.0	346.0	49.0
CY74FCT16374CTPACT	TSSOP	DGG	48	2000	346.0	346.0	41.0
CY74FCT16374CTPVCT	SSOP	DL	48	1000	346.0	346.0	49.0

DGG (R-PDSO-G**)

PLASTIC SMALL-OUTLINE PACKAGE

48 PINS SHOWN



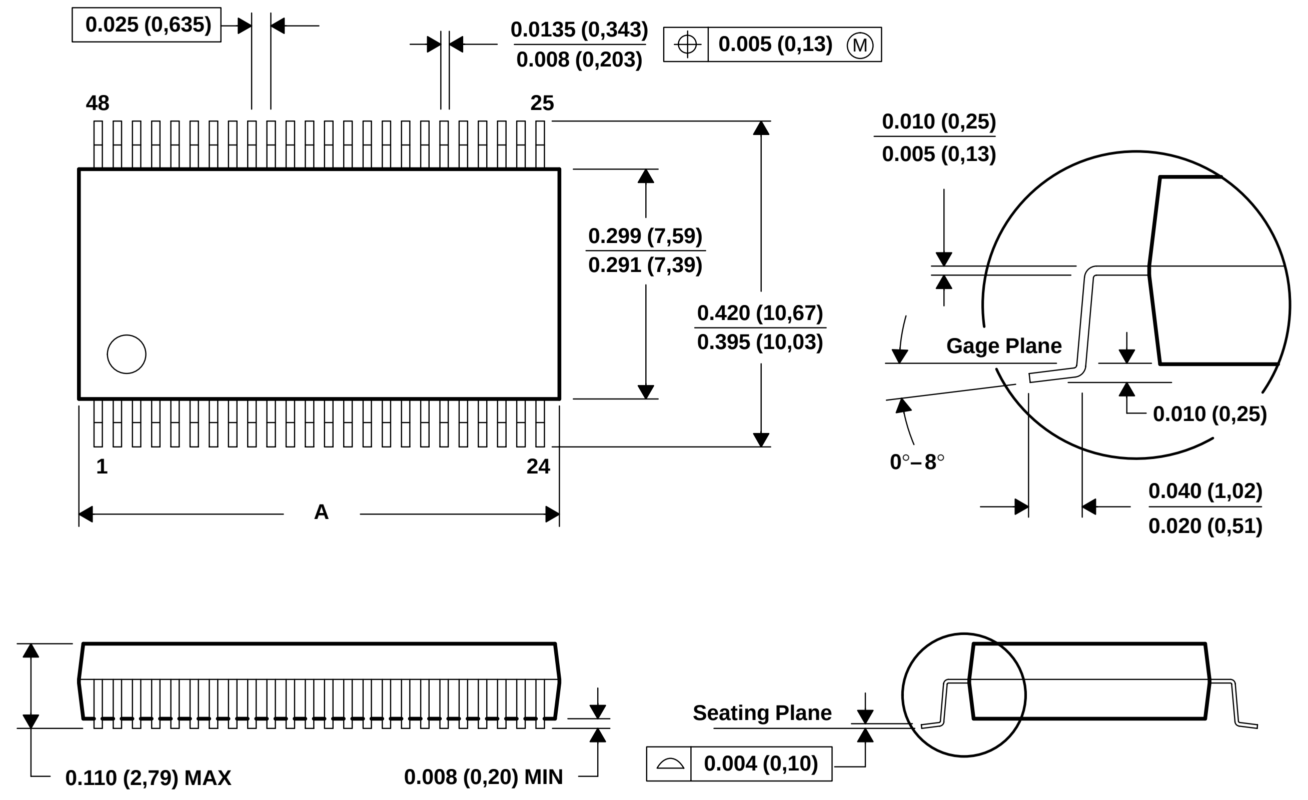
DIM \ PINS **	48	56	64
A MAX	12,60	14,10	17,10
A MIN	12,40	13,90	16,90

4040078 / F 12/97

NOTES:
- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold protrusion not to exceed 0,15.
- D. Falls within JEDEC MO-153

DL (R-PDSO-G**) PLASTIC SMALL-OUTLINE PACKAGE

48 PINS SHOWN



PINS ** DIM	28	48	56
A MAX	0.380 (9,65)	0.630 (16,00)	0.730 (18,54)
A MIN	0.370 (9,40)	0.620 (15,75)	0.720 (18,29)

4040048/E 12/01

NOTES:
- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
- D. Falls within JEDEC MO-118

PACKAGE OPTION ADDENDUM

PACKAGING INFORMATION

Orderable part number	Status (1)	Material type (2)	Package | Pins	Package qty | Carrier	RoHS (3)	Lead finish/ Ball material (4)	MSL rating/ Peak reflow (5)	Op temp (°C)	Part marking (6)
74FCT162374ATPACT	Obsolete	Production	TSSOP (DGG) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374A
74FCT162374CTPACT	Obsolete	Production	TSSOP (DGG) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374C
74FCT162374CTPVCT	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374C
CY74FCT162374ATPVC	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374A
CY74FCT162374CTPVC	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374C
CY74FCT162374TPVCT	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT162374
CY74FCT16374ATPACT	Obsolete	Production	TSSOP (DGG) | 48	-	-	Call TI	Call TI	-40 to 85	FCT16374A
CY74FCT16374ATPVC	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT16374A
CY74FCT16374CTPACT	Obsolete	Production	TSSOP (DGG) | 48	-	-	Call TI	Call TI	-40 to 85	FCT16374C
CY74FCT16374TPVC	Obsolete	Production	SSOP (DL) | 48	-	-	Call TI	Call TI	-40 to 85	FCT16374

(1) **Status:** For more details on status, see our product life cycle.

(2) **Material type:** When designated, preproduction parts are prototypes/experimental devices, and are not yet approved or released for full production. Testing and final process, including without limitation quality assurance, reliability performance testing, and/or process qualification, may not yet be complete, and this item is subject to further changes or possible discontinuation. If available for ordering, purchases will be subject to an additional waiver at checkout, and are intended for early internal evaluation purposes only. These items are sold without warranties of any kind.

(3) **RoHS values:** Yes, No, RoHS Exempt. See the TI RoHS Statement for additional information and value definition.

(4) **Lead finish/Ball material:** Parts may have multiple material finish options. Finish options are separated by a vertical ruled line. Lead finish/Ball material values may wrap to two lines if the finish value exceeds the maximum column width.

(5) **MSL rating/Peak reflow:** The moisture sensitivity level ratings and peak solder (reflow) temperatures. In the event that a part has multiple moisture sensitivity ratings, only the lowest level per JEDEC standards is shown. Refer to the shipping label for the actual reflow temperature that will be used to mount the part to the printed circuit board.

(6) **Part marking:** There may be an additional marking, which relates to the logo, the lot trace code information, or the environmental category of the part.

Multiple part markings will be inside parentheses. Only one part marking contained in parentheses and separated by a "~" will appear on a part. If a line is indented then it is a continuation of the previous line and the two combined represent the entire part marking for that device.

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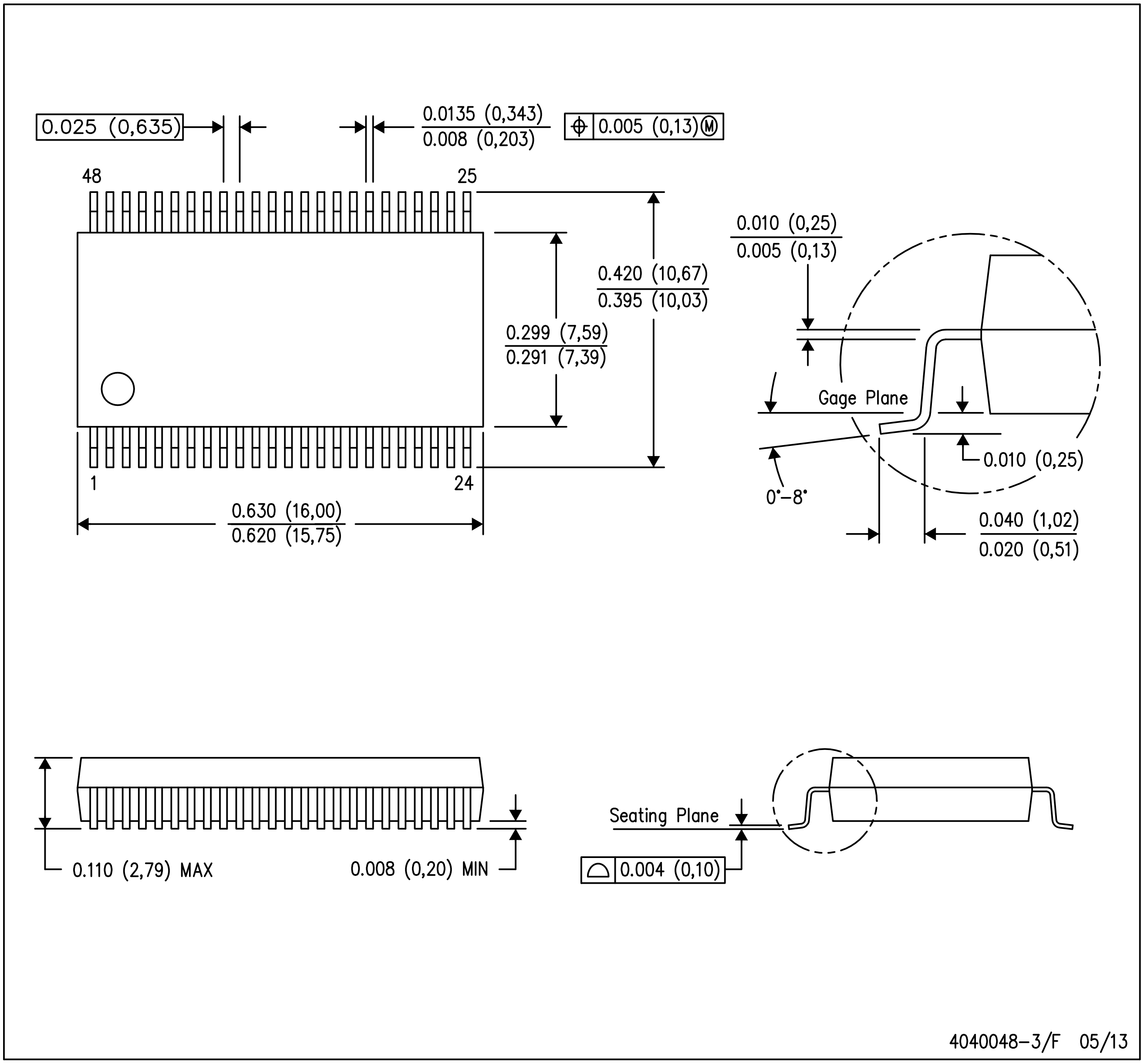
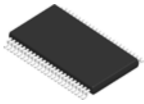
DL (R–PDSO–G48) PLASTIC SMALL–OUTLINE PACKAGE



NOTES:
A. All linear dimensions are in inches (millimeters).
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold flash or protrusion not to exceed 0.006 (0,15).
D. Falls within JEDEC MO–118

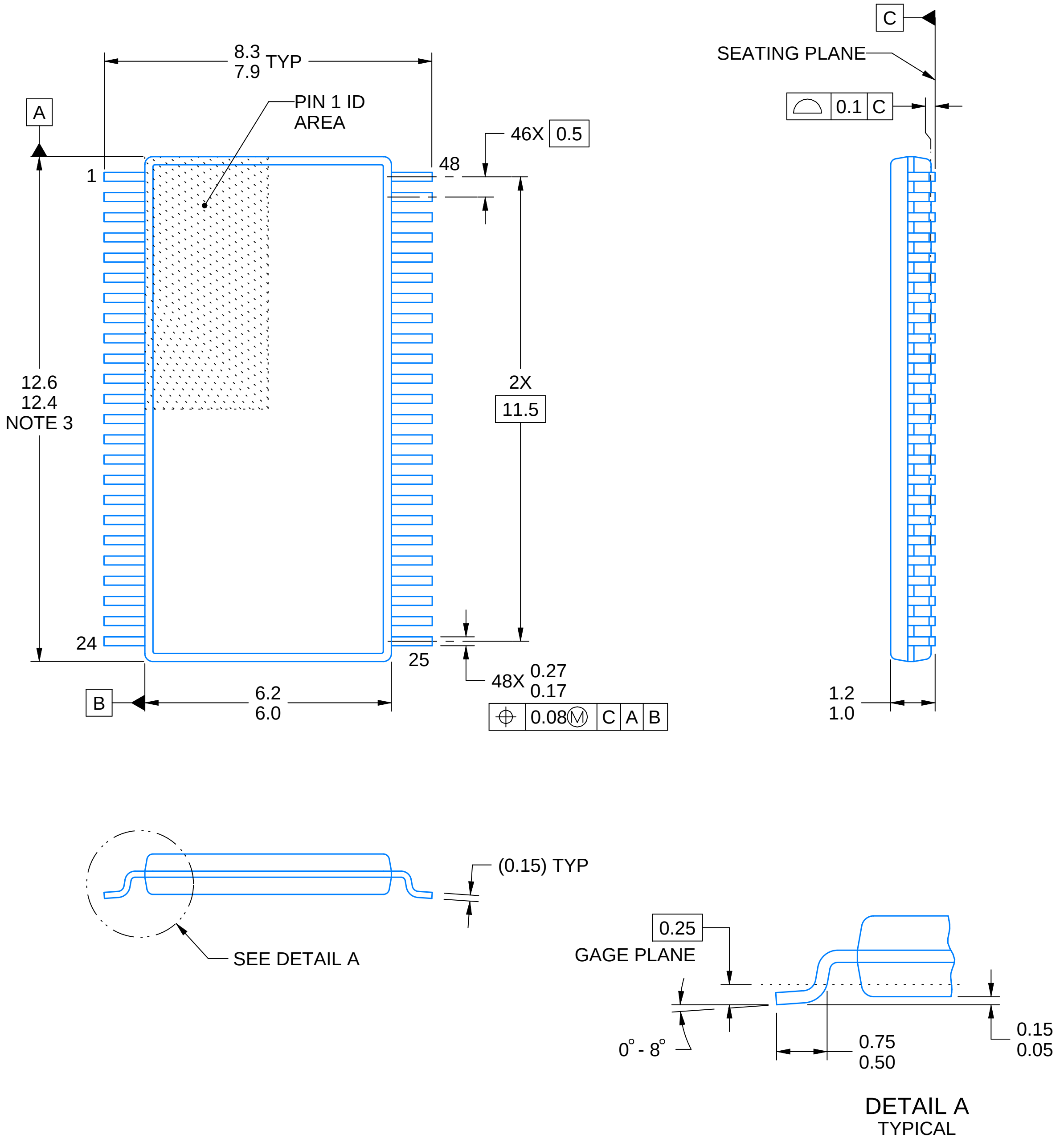
PACKAGE OUTLINE



DGG0048A

TSSOP - 1.2 mm max height

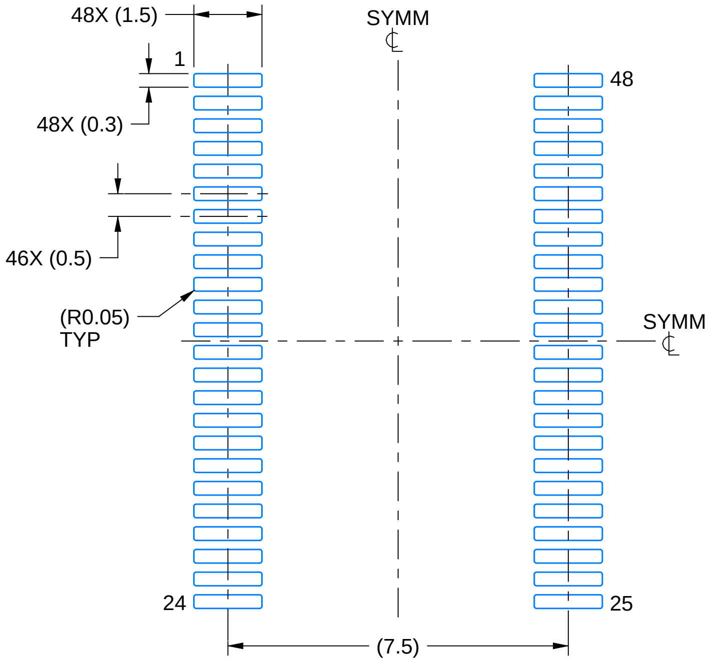
SMALL OUTLINE PACKAGE



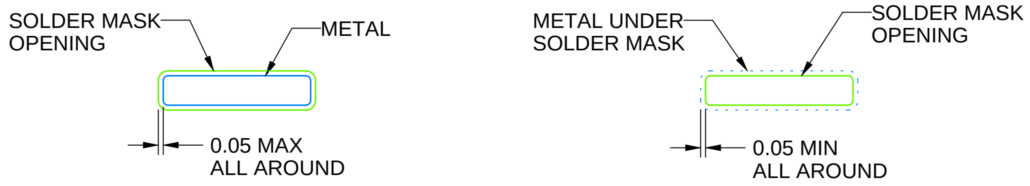
4214859/B 11/2020

NOTES:

1. All linear dimensions are in millimeters. Any dimensions in parenthesis are for reference only. Dimensioning and tolerancing per ASME Y14.5M.
2. This drawing is subject to change without notice.
3. This dimension does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.15 mm per side.
4. Reference JEDEC registration MO-153.



LAND PATTERN EXAMPLE
SCALE:6X



NON SOLDER MASK
DEFINED

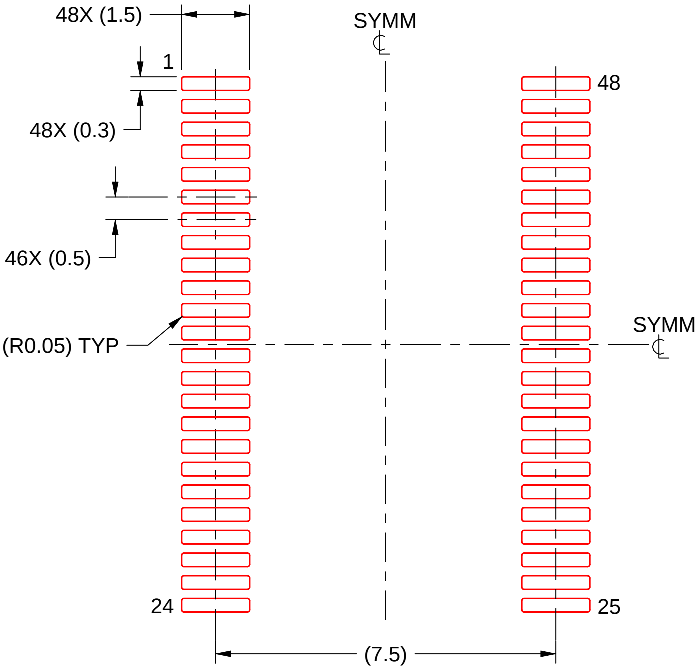
SOLDER MASK
DEFINED

SOLDER MASK DETAILS

4214859/B 11/2020

NOTES: (continued)

5. Publication IPC-7351 may have alternate designs.
6. Solder mask tolerances between and around signal pads can vary based on board fabrication site.



SOLDER PASTE EXAMPLE
BASED ON 0.125 mm THICK STENCIL
SCALE:6X

4214859/B 11/2020

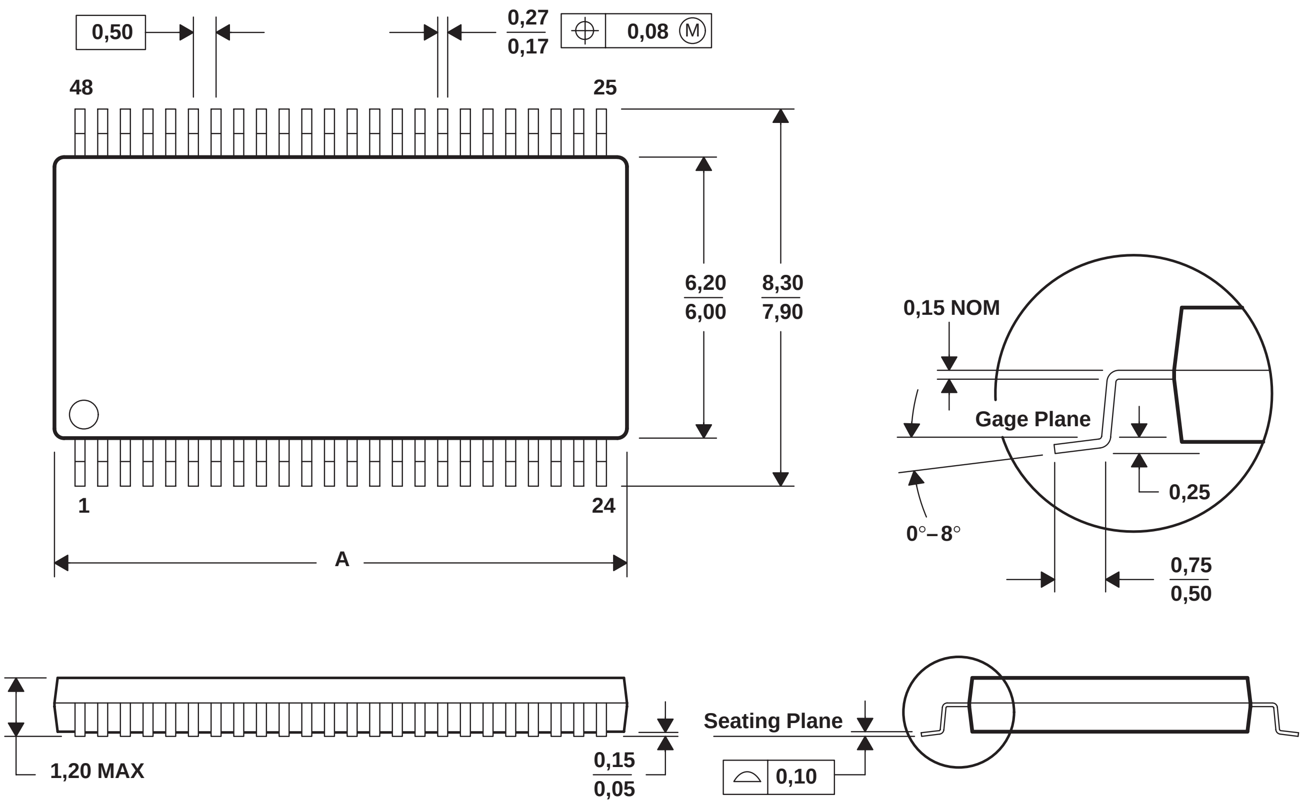
NOTES: (continued)

7. Laser cutting apertures with trapezoidal walls and rounded corners may offer better paste release. IPC-7525 may have alternate design recommendations.
8. Board assembly site may have different recommendations for stencil design.

DGG (R-PDSO-G**)

PLASTIC SMALL-OUTLINE PACKAGE

48 PINS SHOWN



PINS ** DIM	48	56	64
A MAX	12,60	14,10	17,10
A MIN	12,40	13,90	16,90

4040078 / F 12/97

NOTES:
A. All linear dimensions are in millimeters.
B. This drawing is subject to change without notice.
C. Body dimensions do not include mold protrusion not to exceed 0,15.
D. Falls within JEDEC MO-153

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