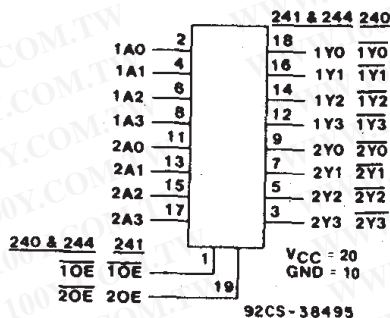


CD54/74AC240/241/244 CD54/74ACT240/241/244

勝特力材料 886-3-5753170
 勝特力电子(上海) 86-21-34970699
 勝特力电子(深圳) 86-755-83298787
 Http://www.100y.com.tw



Data sheet acquired from Harris Semiconductor
 SCHS287B - Revised January 2004



FUNCTIONAL DIAGRAM & TERMINAL ASSIGNMENT

The RCA CD54/74AC240, CD54/74AC241, and CD54/74AC244 and the CD54/74ACT240, CD54/74ACT241, and CD54/74ACT244 3-state octal buffer/line drivers use the RCA ADVANCED CMOS technology. The CD54/74AC/ACT240 and CD54/74AC/ACT244 have active-LOW output enables ($\overline{1OE}$, $\overline{2OE}$). The CD54/74AC/ACT241 has one active-LOW ($\overline{1OE}$) and one active-HIGH (2OE) output enable.

The CD74AC240 and CD74ACT240 are supplied in 20-lead dual-in-line plastic packages (E suffix) and 20-lead small-outline packages (M and M96 suffixes). The CD74AC241 is supplied in 20-lead dual-in-line plastic packages (E suffix) and 20-lead small-outline packages (M96 suffix). The CD74AC244 and CD74ACT244 are supplied in 20-lead dual-in-line plastic packages (E suffix), 20-lead small-outline packages (M and M96 suffixes), and 20-lead shrink small-outline packages (SM96 suffix). These package types are operable over the following temperature ranges: Commercial (0 to 70°C); Industrial (-40 to +85°C); and Extended Industrial/Military (-55 to +125°C).

The CD54AC240 and CD54AC244 and the CD54ACT240, CD54ACT241, and CD54ACT244 are supplied in 20-lead hermetic dual-in-line ceramic packages (F3A suffix) and are operable over the -55 to +125°C temperature range.

Octal Buffer/Line Drivers, 3-State

- CD54/74AC/ACT240 - Inverting
- CD54/74AC/ACT241 - Non-Inverting
- CD54/74AC/ACT244 - Non-Inverting

Type Features:

- Buffered inputs
- Typical propagation delay:
3.6 ns @ $V_{CC} = 5V$, $T_A = 25^\circ C$, $C_L = 50 pF$

Family Features:

- Exceeds 2-kV ESD Protection - MIL-STD-883, Method 3015
- SCR-Latch-up-resistant CMOS process and circuit design
- Speed of bipolar FAST*/AS/S with significantly reduced power consumption
- Balanced propagation delays
- AC types feature 1.5-V to 5.5-V operation and balanced noise immunity at 30% of the supply
- ± 24 -mA output drive current
 - Fanout to 15 FAST* ICs
 - Drives 50-ohm transmission lines

*FAST is a Registered Trademark of Fairchild Semiconductor Corp.

TRUTH TABLES

INPUTS		OUTPUT
$\overline{1OE}$, $\overline{2OE}$	A	Y
L	L	H
L	H	L
H	X	Z

(AC/ACT240)

INPUTS		OUTPUT
$\overline{1OE}$, $\overline{2OE}$	A	Y
L	L	L
L	H	H
H	X	Z

(AC/ACT244)

INPUTS		OUTPUT	INPUTS		OUTPUT
$\overline{1OE}$	1A	1Y	$\overline{2OE}$	2A	2Y
L	L	L	L	X	Z
L	H	H	H	L	L
H	X	Z	H	H	H

(AC/ACT241)

H = HIGH Voltage Level
 L = LOW Voltage Level
 X = Immaterial
 Z = HIGH Impedance

This data sheet is applicable to the CD54/74AC240, CD54ACT240, and CD54/74ACT241. The CD54/74AC241 were not acquired from Harris Semiconductor. See SCHS244 for information on the CD74ACT240, CD74AC244, and CD74ACT244.

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CD54/74AC240/241/244 CD54/74ACT240/241/244

MAXIMUM RATINGS, Absolute-Maximum Values:

DC SUPPLY-VOLTAGE (V_{CC})	-0.5 to 6 V
DC INPUT DIODE CURRENT, I_{IK} (for $V_I < -0.5$ V or $V_I > V_{CC} + 0.5$ V)	± 20 mA
DC OUTPUT DIODE CURRENT, I_{OK} (for $V_O < -0.5$ V or $V_O > V_{CC} + 0.5$ V)	± 50 mA
DC OUTPUT SOURCE OR SINK CURRENT per Output Pin, I_O (for $V_O > -0.5$ V or $V_O < V_{CC} + 0.5$ V)	± 50 mA
DC V_{CC} or GROUND CURRENT (I_{CC} or I_{GND})	± 100 mA*
POWER DISSIPATION PER PACKAGE (P_D):	
For $T_A = -40$ to $+85^\circ\text{C}$ (Package Type E)	500 mW
For $T_A = -40$ to $+70^\circ\text{C}$ (Package Type M)	400 mW
For $T_A = +70$ to $+85^\circ\text{C}$ (Package Type M)	Derate Linearly at 6 mW/ $^\circ\text{C}$ to 310 mW
OPERATING-TEMPERATURE RANGE (T_A): CD54	-55 to $+125^\circ\text{C}$
CD74	-40 to $+85^\circ\text{C}$
STORAGE TEMPERATURE (T_{Stg})	-65 to $+150^\circ\text{C}$
LEAD TEMPERATURE (DURING SOLDERING):	
At distance 1/16 \pm 1/32 in. (1.59 \pm 0.79 mm) from case for 10 s maximum	$+265^\circ\text{C}$
Unit inserted into PC board min. thickness 1/16 in. (1.59 mm) with solder contacting lead tips only	$+300^\circ\text{C}$

* For up to 4 outputs per device: add ± 25 mA for each additional output.

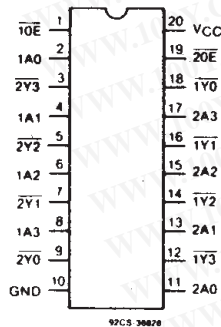
RECOMMENDED OPERATING CONDITIONS:

For maximum reliability, normal operating conditions should be selected so that operation is always within the following ranges:

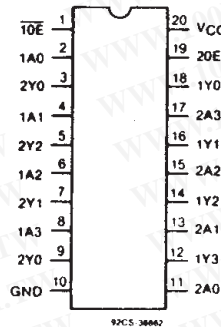
CHARACTERISTIC		LIMITS		UNITS
		MIN.	MAX.	
Supply-Voltage Range, V_{CC} *: (For $T_A =$ Full Package-Temperature Range)				
AC Types		1.5	5.5	V
ACT Types		4.5	5.5	V
DC Input or Output Voltage, V_I, V_O		0	V_{CC}	V
Operating Temperature, T_A	CD54	-55	$+125$	$^\circ\text{C}$
	CD74	-40	$+85$	
Input Rise and Fall Slew Rate, dt/dv				
at 1.5 V to 3 V (AC Types)		0	50	ns/V
at 3.6 v to 5.5 V (AC Types)		0	20	ns/V
at 4.5 V to 5.5 V (ACT Types)		0	10	ns/V

* Unless otherwise specified, all voltages are referenced to ground.

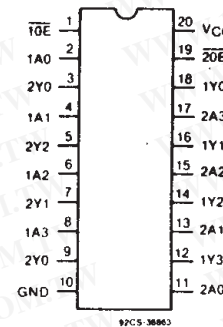
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**CD54/74AC, ACT240 TYPES
TERMINAL ASSIGNMENT**



**CD54/74AC, ACT241 TYPES
TERMINAL ASSIGNMENT**



**CD54/74AC, ACT244 TYPES
TERMINAL ASSIGNMENT**

CD54/74AC240/241/244

CD54/74ACT240/241/244

STATIC ELECTRICAL CHARACTERISTICS: AC Series

CHARACTERISTICS	TEST CONDITIONS		V _{CC} (V)	AMBIENT TEMPERATURE (T _A) - °C						UNITS
				+25		-40 to +85		-55 to +125		
				MIN.	MAX.	MIN.	MAX.	MIN.	MAX.	
High-Level Input Voltage V _{IH}			1.5	1.2	—	1.2	—	1.2	—	V
			3	2.1	—	2.1	—	2.1	—	
			5.5	3.85	—	3.85	—	3.85	—	
Low-Level Input Voltage V _{IL}			1.5	—	0.3	—	0.3	—	0.3	V
			3	—	0.9	—	0.9	—	0.9	
			5.5	—	1.65	—	1.65	—	1.65	
High-Level Output Voltage V _{OH}	V _{IH} or V _{IL}	-0.05	1.5	1.4	—	1.4	—	1.4	—	V
			3	2.9	—	2.9	—	2.9	—	
			4.5	4.4	—	4.4	—	4.4	—	
			3	2.58	—	2.48	—	2.4	—	
			4.5	3.94	—	3.8	—	3.7	—	
			5.5	—	—	3.85	—	—	—	
Low-Level Output Voltage V _{OL}	V _{IH} or V _{IL}	0.05	1.5	—	0.1	—	0.1	—	0.1	V
			3	—	0.1	—	0.1	—	0.1	
			4.5	—	0.1	—	0.1	—	0.1	
			3	—	0.36	—	0.44	—	0.5	
			4.5	—	0.36	—	0.44	—	0.5	
			5.5	—	—	—	1.65	—	—	
			5.5	—	—	—	—	—	1.65	
Input Leakage Current I _I	V _{CC} or GND		5.5	—	±0.1	—	±1	—	±1	μA
3-State Leakage Current I _{OZ}	V _{IH} or V _{IL} V _O = V _{CC} or GND		5.5	—	±0.5	—	±5	—	±10	μA
Quiescent Supply Current, MSI I _{CC}	V _{CC} or GND	0	5.5	—	8	—	80	—	160	μA

#Test one output at a time for a 1-second maximum duration. Measurement is made by forcing current and measuring voltage to minimize power dissipation.

*Test verifies a minimum 50-ohm transmission-line-drive capability at +85°C, 75 ohms at +125°C.

CD54/74AC240/241/244 CD54/74ACT240/241/244

STATIC ELECTRICAL CHARACTERISTICS: ACT Series

CHARACTERISTICS	TEST CONDITIONS		V _{CC} (V)	AMBIENT TEMPERATURE (T _A) - °C						UNITS	
				+25		-40 to +85		-55 to +125			
	V _I (V)	I _O (mA)		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.		
High-Level Input Voltage	V _{IH}		4.5 to 5.5	2	—	2	—	2	—	V	
Low-Level Input Voltage	V _{IL}		4.5 to 5.5	—	0.8	—	0.8	—	0.8	V	
High-Level Output Voltage	V _{OH}	V _{IH} or V _{IL} #, *	-0.05	4.5	4.4	—	4.4	—	4.4	—	V
			-24	4.5	3.94	—	3.8	—	3.7	—	
			-75	5.5	—	—	3.85	—	—	—	
			-50	5.5	—	—	—	—	3.85	—	
Low-Level Output Voltage	V _{OL}	V _{IH} or V _{IL} #, *	0.05	4.5	—	0.1	—	0.1	—	0.1	V
			24	4.5	—	0.36	—	0.44	—	0.5	
			75	5.5	—	—	—	1.65	—	—	
			50	5.5	—	—	—	—	—	1.65	
Input Leakage Current	I _I	V _{CC} or GND	5.5	—	±0.1	—	±1	—	±1	μA	
3-State Leakage Current	I _{OZ}	V _{IH} or V _{IL} V _O = V _{CC} or GND	5.5	—	±0.5	—	±5	—	±10	μA	
Quiescent Supply Current, MSI	I _{CC}	V _{CC} or GND	0	5.5	—	8	—	80	—	160	μA
Additional Quiescent Supply Current per Input Pin TTL Inputs High 1 Unit Load	ΔI _{CC}	V _{CC} -2.1	4.5 to 5.5	—	2.4	—	2.8	—	3	mA	

9

#Test one output at a time for a 1-second maximum duration. Measurement is made by forcing current and measuring voltage to minimize power dissipation.

*Test verifies a minimum 50-ohm transmission-line-drive capability at +85°C, 75 ohms at +125°C.

ACT INPUT LOADING TABLES

CD54/74ACT240	
INPUT	UNIT LOADS*
nA0 - A3	1.42
10E	0.83
20E	0.83

CD54/74ACT241	
INPUT	UNIT LOADS*
nA0 - A3	0.5
10E	0.83
20E	1.67

CD54/74ACT244	
INPUT	UNIT LOADS*
nA0 - A3	0.5
10E	0.83
20E	0.83

*Unit load is ΔI_{CC} limit specified in Static Characteristics Chart, e.g., 2.4 mA max. @ 25°C.

CD54/74AC240/241/244

CD54/74ACT240/241/244

SWITCHING CHARACTERISTICS: AC Series; $t_r, t_f = 3 \text{ ns}$, $C_L = 50 \text{ pF}$

CHARACTERISTICS	SYMBOL	V_{CC} (V)	AMBIENT TEMPERATURE (T_A) - °C				UNITS
			-40 to +85		-55 to +125		
			MIN.	MAX.	MIN.	MAX.	
Propagation Delays: Data to Outputs AC240	t_{PLH}	1.5	—	82	—	90	ns
	t_{PHL}	3.3*	2.6	9.2	2.5	10.1	
AC241, 244	t_{PLH}	1.5	—	93	—	103	ns
	t_{PHL}	3.3	3	10.5	2.9	11.5	
Output Enable Times	t_{PZL}	1.5	—	136	—	150	ns
	t_{PZH}	3.3	4.6	16.4	4.5	18	
		5	3.1	10.9	3	12	
Output Disable Times	t_{PLZ}	1.5	—	136	—	150	ns
	t_{PHZ}	3.3	3.9	13.6	3.8	15	
		5	3.1	10.9	3	12	
Power Dissipation Capacitance AC240 AC241, 244	$C_{PD}\ddagger$	—	65 Typ. 71 Typ.		65 Typ. 71 Typ.		pF
Min. (Valley) V_{OH} During Switching of Other Outputs (Output Under Test Not Switching)	V_{OHV} See Fig. 1	5	4 Typ. @ 25°C				V
Max. (Peak) V_{OL} During Switching of Other Outputs (Output Under Test Not Switching)	V_{OLP} See Fig. 1	5	1 Typ. @ 25°C				V
Input Capacitance	C_i	—	—	10	—	10	pF
3-State Output Capacitance	C_o	—	—	15	—	15	pF

SWITCHING CHARACTERISTICS: ACT Series; $t_r, t_f = 3 \text{ ns}$, $C_L = 50 \text{ pF}$

CHARACTERISTICS	SYMBOL	V_{CC} (V)	AMBIENT TEMPERATURE (T_A) - °C				UNITS
			-40 to +85		-55 to +125		
			MIN.	MAX.	MIN.	MAX.	
Propagation Delays: Data to Outputs ACT240	t_{PLH}	5†	2.3	7.8	2.2	8.6	ns
	t_{PHL}						
ACT241, 244	t_{PLH}	5	2.5	8.7	2.4	9.6	ns
	t_{PHL}						
Output Enable Times	t_{PZL}	5	3.5	12.2	3.4	13.4	ns
	t_{PZH}						
Output Disable Times	t_{PLZ}	5	3.5	12.2	3.4	13.4	ns
	t_{PHZ}						
Power Dissipation Capacitance ACT240 ACT241, 244	$C_{PD}\ddagger$	—	65 Typ. 71 Typ.		65 Typ. 71 Typ.		pF
Min. (Valley) V_{OH} During Switching of Other Outputs (Output Under Test Not Switching)	V_{OHV} See Fig. 1	5	4 Typ. @ 25°C				V
Max. (Peak) V_{OL} During Switching of Other Outputs (Output Under Test Not Switching)	V_{OLP} See Fig. 1	5	1 Typ. @ 25°C				V
Input Capacitance	C_i	—	—	10	—	10	pF
3-State Output Capacitance	C_o	—	—	15	—	15	pF

*3.3 V: min. is @ 3.6 V
max. is @ 3 V

†5 V: min. is @ 5.5 V
max. is @ 4.5 V

‡ C_{PD} is used to determine the dynamic power consumption, per package.

For AC series: $P_D = V_{CC}^2 f_i (C_{PD} + C_L)$

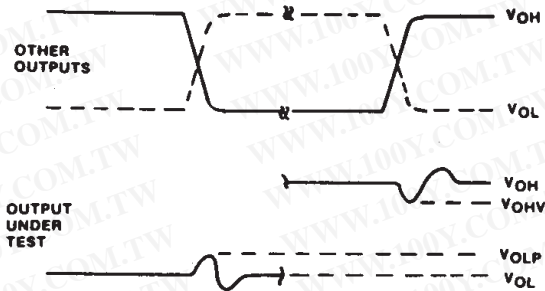
For ACT series: $P_D = V_{CC}^2 f_i (C_{PD} + C_L) + V_{CC} \Delta I_{CC}$ where f_i = input frequency

C_L = output load capacitance

V_{CC} = supply voltage.

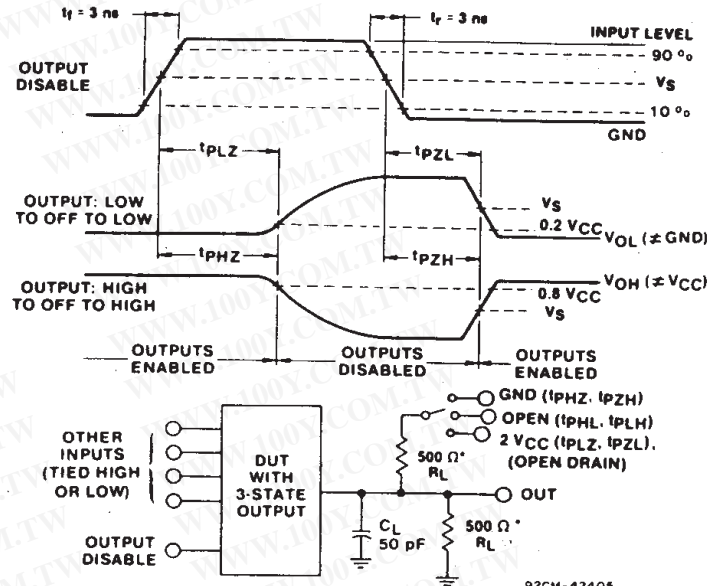
CD54/74AC240/241/244 CD54/74ACT240/241/244

PARAMETER MEASUREMENT INFORMATION



- NOTES:
1. V_{OHV} AND V_{OLP} ARE MEASURED WITH RESPECT TO A GROUND REFERENCE NEAR THE OUTPUT UNDER TEST.
 2. INPUT PULSES HAVE THE FOLLOWING CHARACTERISTICS:
 $PRR \leq 1$ MHz, $t_r = 3$ ns, $t_f = 3$ ns, SKEW 1 ns.
 3. R.F. FIXTURE WITH 700-MHz DESIGN RULES REQUIRED. IC SHOULD BE SOLDERED INTO TEST BOARD AND BYPASSED WITH $0.1 \mu\text{F}$ CAPACITOR. SCOPE AND PROBES REQUIRE 700-MHz BANDWIDTH.

92CS-42406

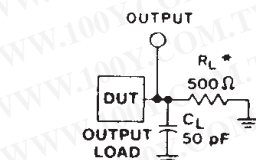


*FOR AC SERIES ONLY: WHEN $V_{CC} = 1.5$ V, $R_L = 1$ k Ω

92CM-42405

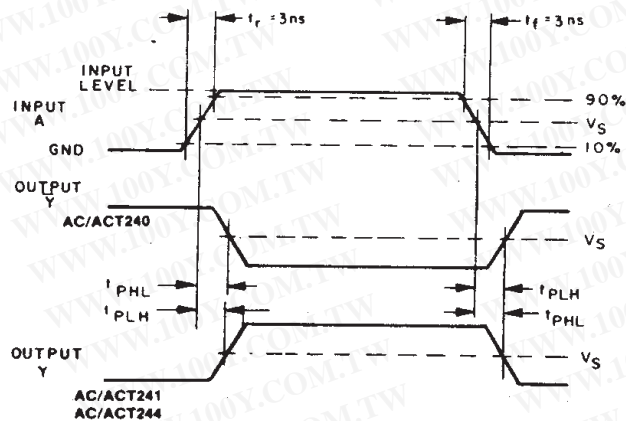
Fig. 1 - Simultaneous switching transient waveforms.

Fig. 2 - Three-state propagation delay times and test circuit.



*FOR AC SERIES ONLY: WHEN $V_{CC} = 1.5$ V, $R_L = 1$ k Ω

92CS-42389



92CS-42407

Fig. 3 - Propagation delay times and test circuit.

	CD54/74AC	CD54/74ACT
Input Level	V_{CC}	3 V
Input Switching Voltage, V_S	$0.5 V_{CC}$	1.5 V
Output Switching Voltage, V_S	$0.5 V_{CC}$	$0.5 V_{CC}$

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
CD54AC240F3A	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	CD54AC240F3A	Samples
CD54AC244F3A	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	CD54AC244F3A	Samples
CD54ACT240F3A	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	CD54ACT240F3A	Samples
CD54ACT241F3A	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	CD54ACT241F3A	Samples
CD54ACT244F3A	ACTIVE	CDIP	J	20	1	TBD	A42	N / A for Pkg Type	-55 to 125	CD54ACT244F3A	Samples
CD74AC240E	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74AC240E	Samples
CD74AC240EE4	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74AC240E	Samples
CD74AC240M	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC240M	Samples
CD74AC240M96	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC240M	Samples
CD74AC244E	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74AC244E	Samples
CD74AC244EE4	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74AC244E	Samples
CD74AC244M	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC244M	Samples
CD74AC244M96	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC244M	Samples
CD74AC244M96G4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	AC244M	Samples
CD74ACT240E	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT240E	Samples
CD74ACT240EE4	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT240E	Samples
CD74ACT240M	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT240M	Samples
CD74ACT240M96	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT240M	Samples

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan (2)	Lead/Ball Finish (6)	MSL Peak Temp (3)	Op Temp (°C)	Device Marking (4/5)	Samples
CD74ACT240M96E4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT240M	Samples
CD74ACT241E	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT241E	Samples
CD74ACT241M96	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT241M	Samples
CD74ACT244E	ACTIVE	PDIP	N	20	20	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	-55 to 125	CD74ACT244E	Samples
CD74ACT244M	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT244M	Samples
CD74ACT244M96	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT244M	Samples
CD74ACT244M96E4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT244M	Samples
CD74ACT244M96G4	ACTIVE	SOIC	DW	20	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT244M	Samples
CD74ACT244MG4	ACTIVE	SOIC	DW	20	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	-55 to 125	ACT244M	Samples

(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.

(4) There may be additional marking, which relates to the logo, the lot trace code information, or the environmental category on the device.

(5) Multiple Device Markings will be inside parentheses. Only one Device Marking contained in parentheses and separated by a "~" will appear on a device. If a line is indented then it is a continuation of the previous line and the two combined represent the entire Device Marking for that device.

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

Important Information and Disclaimer: The information provided on this page represents TI's knowledge and belief as of the date that it is provided. TI bases its knowledge and belief on information provided by third parties, and makes no representation or warranty as to the accuracy of such information. Efforts are underway to better integrate information from third parties. TI has taken and continues to take reasonable steps to provide representative and accurate information but may not have conducted destructive testing or chemical analysis on incoming materials and chemicals. TI and TI suppliers consider certain information to be proprietary, and thus CAS numbers and other limited information may not be available for release.

In no event shall TI's liability arising out of such information exceed the total purchase price of the TI part(s) at issue in this document sold by TI to Customer on an annual basis.

OTHER QUALIFIED VERSIONS OF CD54AC240, CD54AC244, CD54ACT240, CD54ACT241, CD54ACT244, CD74AC240, CD74AC244, CD74ACT240, CD74ACT241, CD74ACT244 :

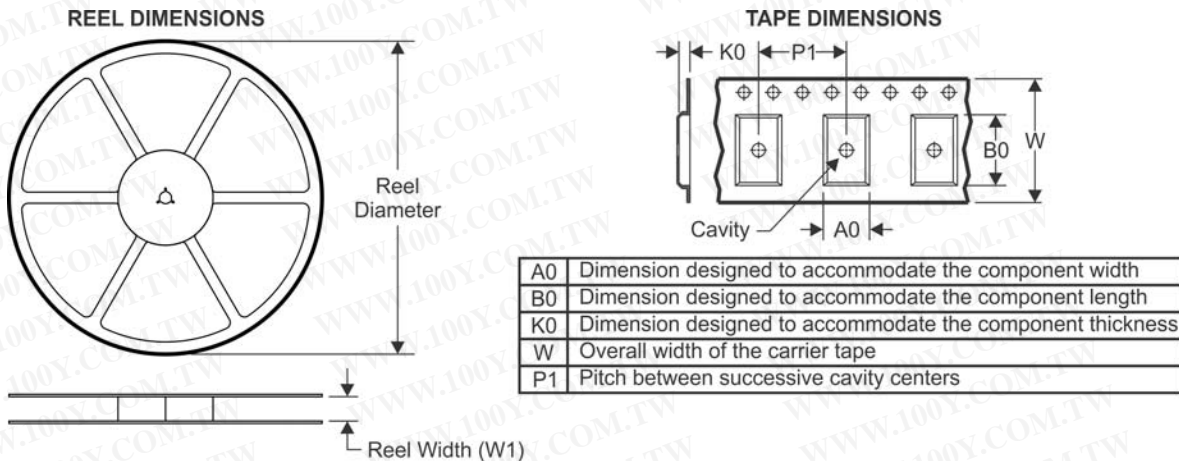
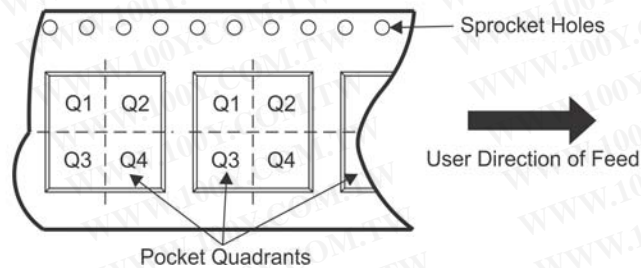
● Catalog: [CD74AC240](#), [CD74AC244](#), [CD74ACT240](#), [CD74ACT241](#), [CD74ACT244](#)

● Military: [CD54AC240](#), [CD54AC244](#), [CD54ACT240](#), [CD54ACT241](#), [CD54ACT244](#)

NOTE: Qualified Version Definitions:

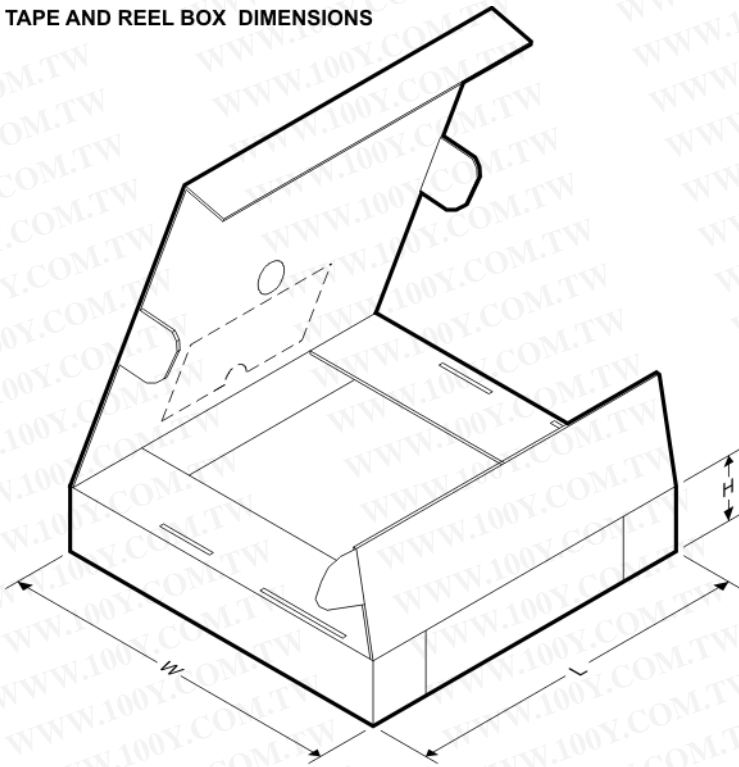
● Catalog - TI's standard catalog product

● Military - QML certified for Military and Defense Applications

TAPE AND REEL INFORMATION

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
CD74AC240M96	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
CD74AC244M96	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
CD74ACT240M96	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
CD74ACT241M96	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1
CD74ACT244M96	SOIC	DW	20	2000	330.0	24.4	10.8	13.3	2.7	12.0	24.0	Q1

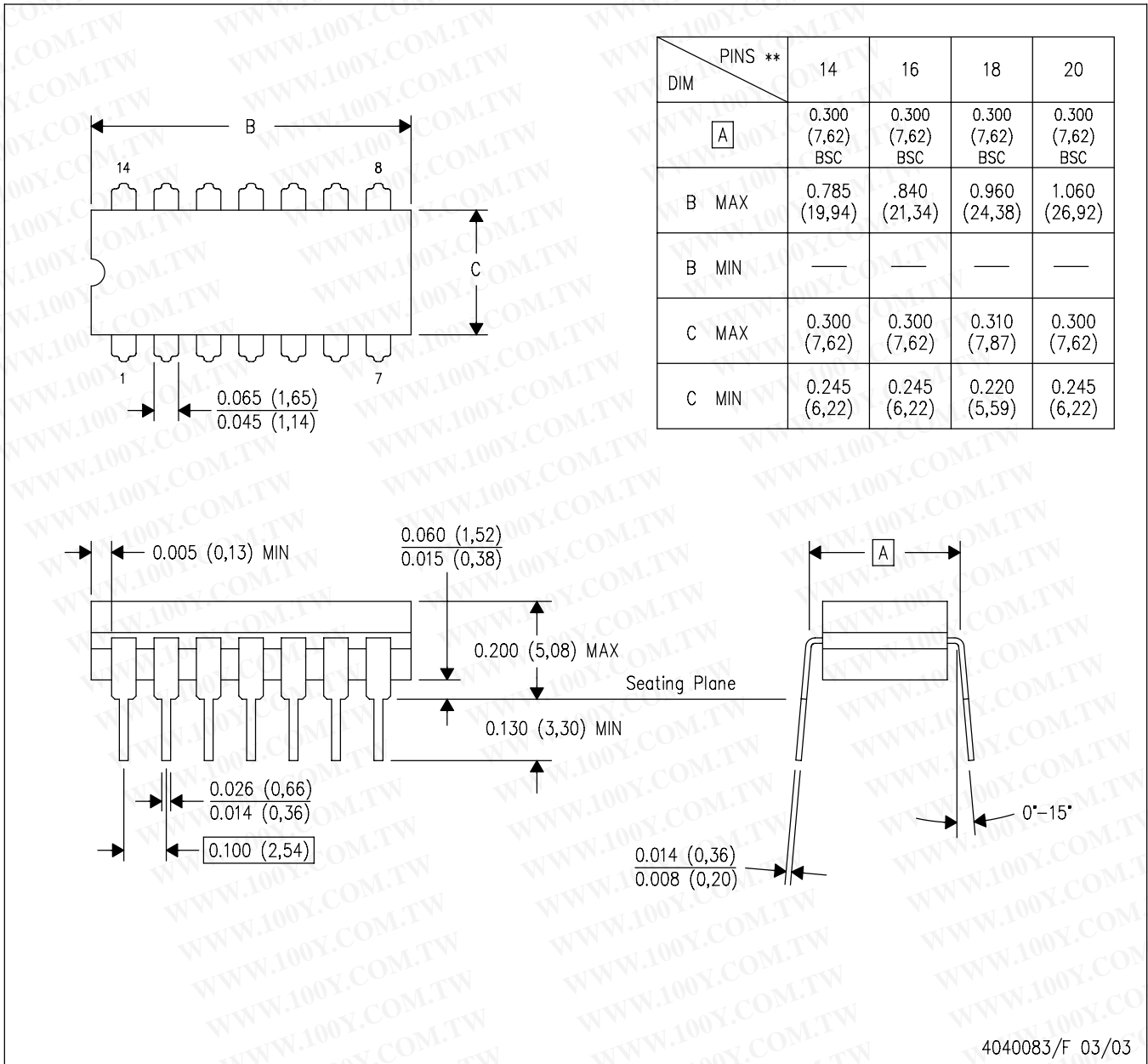
TAPE AND REEL BOX DIMENSIONS


*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
CD74AC240M96	SOIC	DW	20	2000	367.0	367.0	45.0
CD74AC244M96	SOIC	DW	20	2000	367.0	367.0	45.0
CD74ACT240M96	SOIC	DW	20	2000	367.0	367.0	45.0
CD74ACT241M96	SOIC	DW	20	2000	367.0	367.0	45.0
CD74ACT244M96	SOIC	DW	20	2000	367.0	367.0	45.0

J (R-GDIP-T**) 14 LEADS SHOWN

CERAMIC DUAL IN-LINE PACKAGE

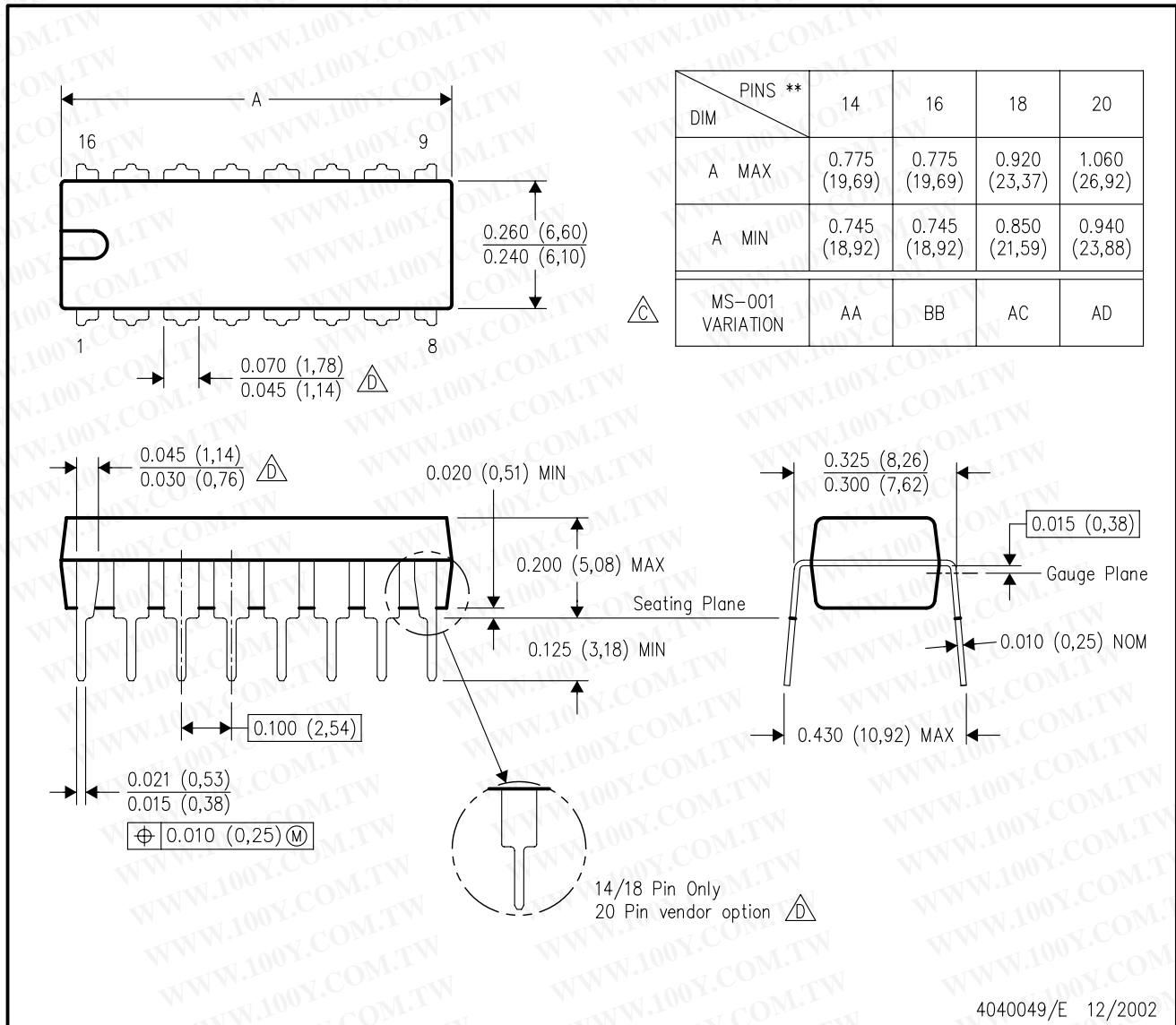


- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - C. This package is hermetically sealed with a ceramic lid using glass frit.
 - D. Index point is provided on cap for terminal identification only on press ceramic glass frit seal only.
 - E. Falls within MIL STD 1835 GDIP1-T14, GDIP1-T16, GDIP1-T18 and GDIP1-T20.

N (R-PDIP-T**)

16 PINS SHOWN

PLASTIC DUAL-IN-LINE PACKAGE



- NOTES:
- A. All linear dimensions are in inches (millimeters).
 - B. This drawing is subject to change without notice.
 - Falls within JEDEC MS-001, except 18 and 20 pin minimum body length (Dim A).
 - The 20 pin end lead shoulder width is a vendor option, either half or full width.

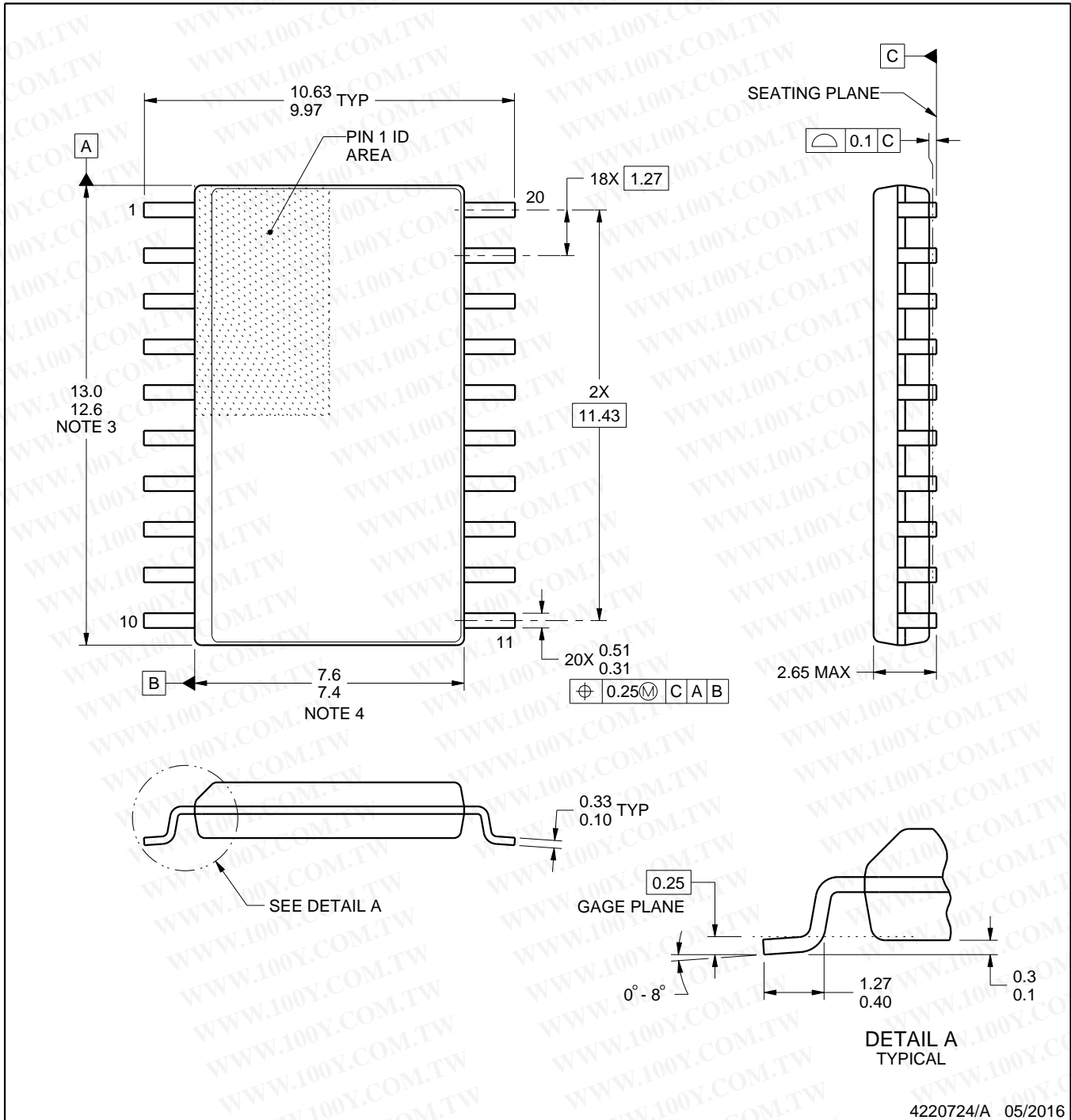
DW0020A



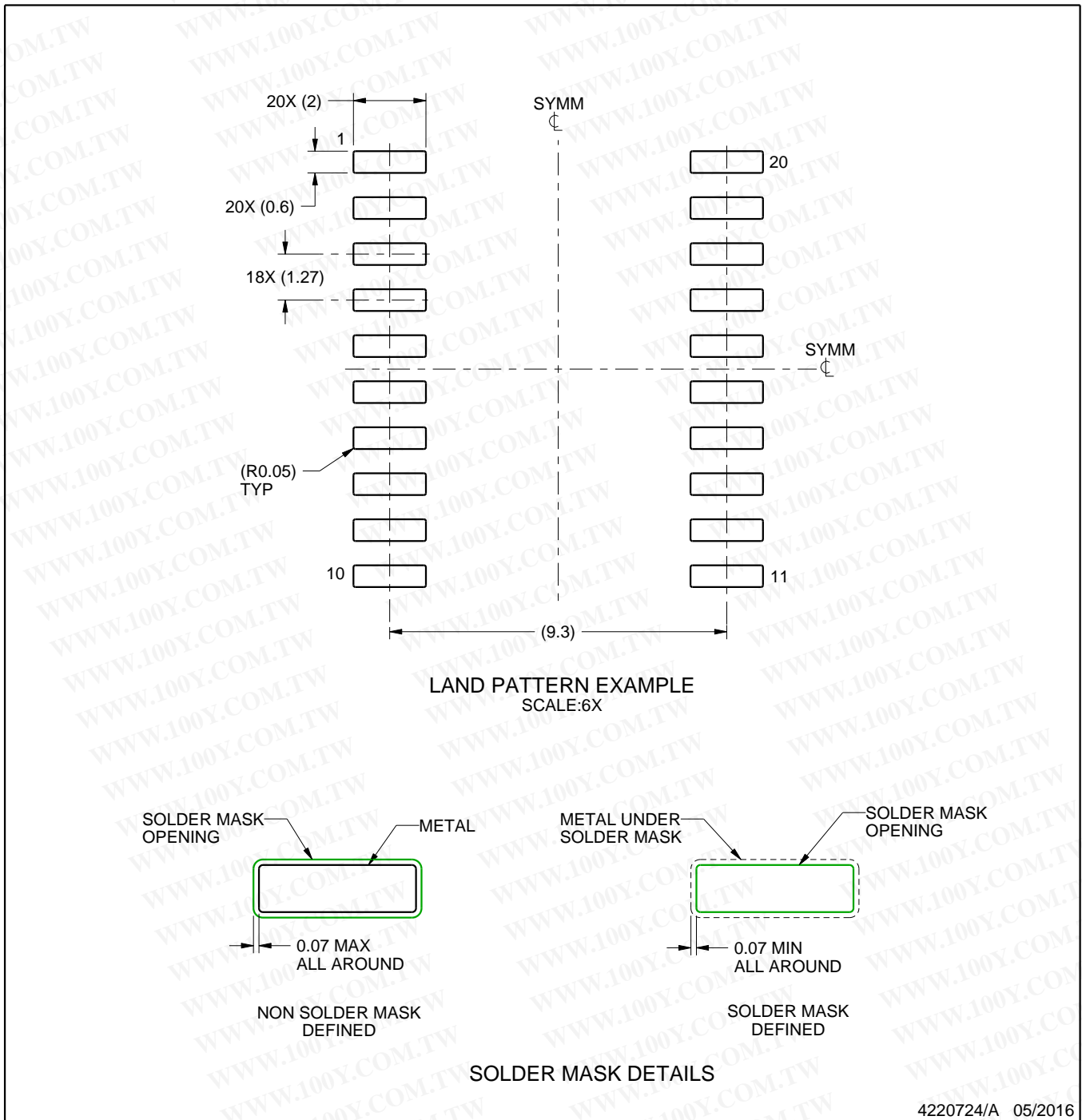
PACKAGE OUTLINE

SOIC - 2.65 mm max height

SOIC



4220724/A 05/2016



NOTES: (continued)

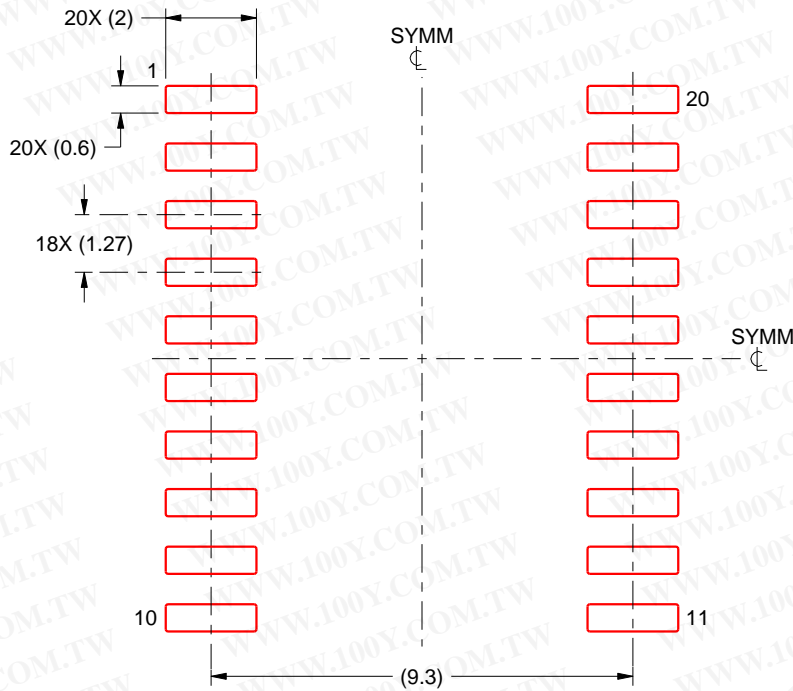
- 6. Publication IPC-7351 may have alternate designs.
- 7. Solder mask tolerances between and around signal pads can vary based on board fabrication site.

EXAMPLE STENCIL DESIGN

DW0020A

SOIC - 2.65 mm max height

SOIC



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

勝特力材料 886-3-5753170
勝特力电子(上海) 86-21-34970699
勝特力电子(深圳) 86-755-83298787
[Http://www.100y.com.tw](http://www.100y.com.tw)

NOTES: (continued)

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