CY54FCT543T . . . D PACKAGE

CY7

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- Function, Pinout, and Drive Compatible With FCT and F Logic
- Reduced V<sub>OH</sub> (Typically = 3.3 V) Versions of Equivalent FCT Functions
- Edge-Rate Control Circuitry for Significantly Improved Noise Characteristics
- I<sub>off</sub> Supports Partial-Power-Down Mode Operation
- Matched Rise and Fall Times
- Fully Compatible With TTL Input and Output Logic Levels
- 3-State Outputs
- ESD Protection Exceeds JESD 22
  - 2000-V Human-Body Model (A114-A)
  - 200-V Machine Model (A115-A)
  - 1000-V Charged-Device Model (C101)
- Separation Controls for Data Flow in Each Direction
- Back-to-Back Latches for Storage
- CY54FCT543T
  - 48-mA Output Sink Current
  - 12-mA Output Source Current
- CY74FCT543T
  - 64-mA Output Sink Current
  - 32-mA Output Source Current

#### description

The 'FCT543T octal latched transceivers contain two sets of eight D-type latches with separate latch-enable (LEAB, LEBA) and output-enable (OEAB, OEBA) inputs for each set to permit independent control of input and output in either direction of data flow. For data flow from A to B, for example, the A-to-B enable (CEAB) input must be low in order to enter data from A or to take data from B, as indicated in the function table. With CEAB low, a low signal on the A-to-B latch-enable (LEAB) input makes the A-to-B latches transparent; a subsequent low-to-high transition of the LEAB signal puts the A latches in the storage mode and their outputs no longer change with the A inputs. With CEAB and OEAB low, the 3-state B-output buffers are active and reflect the data present at the output of the A latches. Control of data from B to A is similar, but uses CEBA, LEBA, and OEBA inputs.

These devices are fully specified for partial-power-down applications using I<sub>off</sub>. The I<sub>off</sub> circuitry disables the outputs, preventing damaging current backflow through the device when it is powered down.



Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

PRODUCTION DATA information is current as of publication date. Products conform to specifications per the terms of Texas Instruments standard warranty. Production processing does not necessarily include testing of all parameters.



Copyright © 2001, Texas Instruments Incorporated On products compliant to MIL-PRF-38535, all parameters are tested unless otherwise noted. On all other products, production processing does not necessarily include testing of all parameters.

	Q ( TOP VI		SO PACKAGE
LEBA OEBA A <sub>0</sub> A <sub>1</sub> A <sub>2</sub> A <sub>2</sub> A <sub>3</sub> A <sub>4</sub> A <sub>5</sub> CEAB GND	5 6 7	24 23 22 21 20 19 18 17 16 15 14	V <sub>CC</sub>   CEBA   B <sub>0</sub>   B <sub>2</sub>   B <sub>3</sub>   B <sub>4</sub>   B <sub>5</sub>   B <sub>6</sub>   B <sub>7</sub>   LEAB   OEAB

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#### **PIN DESCRIPTION**

NAME	DESCRIPTION
OEAB	A-to-B output-enable input (active low)
OEBA	B-to-A output-enable input (active low)
CEAB	A-to-B enable input (active low)
CEBA	B-to-A enable input (active low)
LEAB	A-to-B latch-enable input (active low)
LEBA	B-to-A latch-enable input (active low)
А	A-to-B data inputs or B-to-A 3-state outputs
В	B-to-A data inputs or A-to-B 3-state outputs

#### **ORDERING INFORMATION**

TA	PAC	KAGE <sup>†</sup>	SPEED (ns)	ORDERABLE PART NUMBER	TOP-SIDE MARKING
	QSOP – Q	Tape and reel	5.3	CY74FCT543CTQCT	FCT543C
	SOIC - SO	Tube	5.3	CY74FCT543CTSOC	FCT543C
	5010 - 50	Tape and reel	5.3	CY74FCT543CTSOCT	FC1543C
	QSOP – Q Tape and reel		6.5	CY74FCT543ATQCT	FCT543A
–40°C to 85°C	SOIC - SO	Tube	6.5	CY74FCT543ATSOC	FCT543A
	3010 - 30	Tape and reel 6.5		CY74FCT543ATSOCT	FC1545A
	QSOP – Q	Tape and reel	8.5	CY74FCT543TQCT	FCT543
	SOIC - SO	Tube	8.5	CY74FCT543TSOC	FCT543
	3010 - 30	Tape and reel		CY74FCT543TSOCT	FC1545
–55°C to 125°C	-55°C to 125°C CDIP - D		10	CY54FCT543TDMB	
-55 C 10 125 C		Tube	10	CY54FCT543TLMB	

<sup>†</sup> Package drawings, standard packing quantities, thermal data, symbolization, and PCB design guidelines are available at www.ti.com/sc/package.

	INPUTS		LATCH	OUTPUT								
CEAB	LEAB	OEAB	A TO B§	В								
Н	Х	Х	Storing	Z								
Х	Н	Х	Storing	Х								
Х	Х	Н	х	Z								
L	L	L	Transparent	Current A inputs								
L	Н	L	Storing	Previous A inputs								

#### **FUNCTION TABLE**<sup>‡</sup>

H = High logic level, L = Low logic level, X = Don't care, Z = High-impedance state

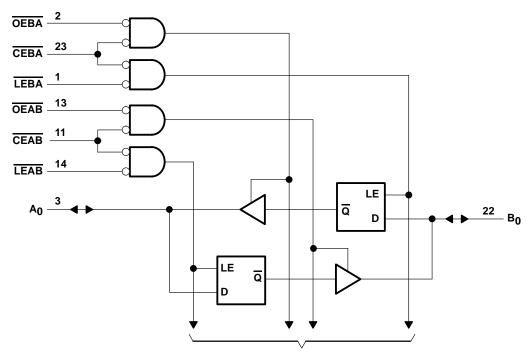
 $\frac{1}{4}$  A-to-B data flow shown; B-to-A flow control is the same, except uses CEBA, LEBA, and OEBA.

§ Before LEAB low-to-high transition



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## logic diagram (positive logic)



**To Seven Other Channels** 

#### absolute maximum ratings over operating free-air temperature range (unless otherwise noted)<sup>†</sup>

Supply voltage range to ground potential	–0.5 V to 7 V
DC input voltage range	–0.5 V to 7 V
DC output voltage range	–0.5 V to 7 V
DC output current (maximum sink current/pin)	120 mA
Package thermal impedance, $\theta_{JA}$ (see Note 1): Q package	61°C/W
SO package	46°C/W
Ambient temperature range with power applied, T <sub>A</sub>	. –65°C to 135°C
Storage temperature range, T <sub>stg</sub>	. −65°C to 150°C

<sup>†</sup> Stresses beyond those listed under "absolute maximum ratings" may cause permanent damage to the device. These are stress ratings only, and functional operation of the device at these or any other conditions beyond those indicated under "recommended operating conditions" is not implied. Exposure to absolute-maximum-rated conditions for extended periods may affect device reliability. NOTE 1: The package thermal impedance is calculated in accordance with JESD 51-7.

### recommended operating conditions (see Note 2)

		CY	54FCT54	3T	CY	74FCT54	3T	UNIT
		MIN	NOM	MAX	MIN	NOM	MAX	
VCC	Supply voltage	4.5	5	5.5	4.75	5	5.25	V
VIH	High-level input voltage	2			2			V
$\vee_{IL}$	Low-level input voltage			0.8			0.8	V
ЮН	High-level output current			-12			-32	mA
IOL	Low-level output current			48			64	mA
ТĄ	Operating free-air temperature	-55		125	-40		85	°C

NOTE 2: All unused inputs of the device must be held at V<sub>CC</sub> or GND to ensure proper device operation.



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# electrical characteristics over recommended operating free-air temperature range (unless otherwise noted)

		TEAT CONDITION	10	CY	54FCT54	I3T	CY	74FCT54	I3T	UNIT
PARAMETER		TEST CONDITIO	NS	MIN	түр†	MAX	MIN	TYP <sup>†</sup>	MAX	UNI
Mu e	V <sub>CC</sub> = 4.5 V,	I <sub>IN</sub> = -18 mA			-0.7	-1.2				v
VIK	V <sub>CC</sub> = 4.75 V,	I <sub>IN</sub> = -18 mA						-0.7	-1.2	v
	V <sub>CC</sub> = 4.5 V,	I <sub>OH</sub> = -12 mA		2.4	3.3					
VOH	V <sub>CC</sub> = 4.75 V	I <sub>OH</sub> = -32 mA					2			V
	VCC = 4.75 V	I <sub>OH</sub> = -15 mA					2.4	3.3		
Ve	V <sub>CC</sub> = 4.5 V,	I <sub>OL</sub> = 48 mA			0.3	0.55				v
VOL	V <sub>CC</sub> = 4.75 V,	I <sub>OL</sub> = 64 mA						0.3	0.55	
V <sub>hys</sub>	All inputs				0.2			0.2		V
1.	V <sub>CC</sub> = 5.5 V,	$V_{IN} = V_{CC}$				5				
Ι	V <sub>CC</sub> = 5.25 V,	$V_{IN} = V_{CC}$							5	μA
	V <sub>CC</sub> = 5.5 V,	V <sub>IN</sub> = 2.7 V				±1				μA
ін	V <sub>CC</sub> = 5.25 V,	V <sub>IN</sub> = 2.7 V							±1	μ
V <sub>CC</sub> = 5.5 V,		V <sub>IN</sub> = 0.5 V				±1				
١Ľ	V <sub>CC</sub> = 5.25 V,	V <sub>IN</sub> = 0.5 V							±1	μA
V <sub>CC</sub> = 5.5 V,		V <sub>OUT</sub> = 2.7 V				10				μA
IOZH	V <sub>CC</sub> = 5.25 V,	V <sub>OUT</sub> = 2.7 V							10	μ
1071	$V_{CC} = 5.5 V,$	V <sub>OUT</sub> = 0.5 V				-10				μA
IOZL	$V_{CC} = 5.25 V,$	V <sub>OUT</sub> = 0.5 V							-10	μ
last	V <sub>CC</sub> = 5.5 V,	V <sub>OUT</sub> = 0 V		-60	-120	-225				m/
los‡	V <sub>CC</sub> = 5.25 V,	V <sub>OUT</sub> = 0 V					-60	-120	-225	
l <sub>off</sub>	$V_{CC} = 0 V,$	V <sub>OUT</sub> = 4.5 V				±1			±1	μA
laa	V <sub>CC</sub> = 5.5 V,	$V_{IN} \le 0.2 V$ ,	$V_{IN} \ge V_{CC} - 0.2 V$		0.1	0.2				m/
ICC	V <sub>CC</sub> = 5.25 V,	$V_{IN} \le 0.2 V$ ,	$V_{IN} \ge V_{CC} - 0.2 V$					0.1	0.2	117
∆ICC	$V_{CC} = 5.5 \text{ V}, \text{ V}_{IN}$	= 3.4 V§, f <sub>1</sub> = 0, Ou	itputs open		0.5	2				m/
	V <sub>CC</sub> = 5.25 V, V <sub>IN</sub>	<b>1</b> = 3.4 V§, f <sub>1</sub> = 0, O	utputs open					0.5	2	1117
1000	$V_{CC} = 5.5 \text{ V}, \text{Outp}$ One input switchin CEAB and OEAB $V_{IN} \le 0.2 \text{ V or } V_{IN}$		0.06	0.12				mA		
ICCD		ig at 50% duty cycle = low, CEBA = high						0.06	0.12	MH

<sup>†</sup> Typical values are at  $V_{CC} = 5 \text{ V}$ ,  $T_A = 25^{\circ}\text{C}$ .

\* 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 to minimize internal chip heating and more accurately reflect operational values. Otherwise, prolonged shorting of a high output can raise the chip temperature well above normal and cause invalid readings in other parametric tests. In any sequence of parameter tests, IOS tests should be performed last.

§ Per TTL-driven input ( $V_{IN}$  = 3.4 V); all other inputs at V<sub>CC</sub> or GND

 $\P$  This parameter is derived for use in total power-supply calculations.



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#### electrical characteristics over recommended operating free-air temperature range (unless otherwise noted) (continued)

DADAMETED			с.	CY	54FCT54	I3T	CY	74FCT54	3T	
PARAMETER		EST CONDITION	5	MIN	түр†	MAX	MIN	түр†	MAX	UNIT
	V <sub>CC</sub> = 5.5 V,	One bit switching at f <sub>1</sub> = 5 MHz	$\begin{array}{l} V_{IN} \leq 0.2 \ V \ \text{or} \\ V_{IN} \geq V_{CC} - 0.2 \ V \end{array}$		0.7	1.4				
	f <sub>0</sub> = 10 MHz, Outputs open,	at 50% duty cycle	$V_{IN} = 3.4 \text{ V or GND}$		1.2	3.4				
	$\overline{CEAB} \text{ and } \overline{OEAB} = $ $low, \overline{CEBA} = high,$ $f_0 = \overline{LEAB} = 10 \text{ MHz}$	Eight bits switching at f <sub>1</sub> = 5 MHz	$\begin{array}{l} V_{IN} \leq 0.2 \ V \ \text{or} \\ V_{IN} \geq V_{CC} - 0.2 \ V \end{array}$		2.8	5.6ll				
IC#		at 50% duty cycle	$V_{IN} = 3.4 V \text{ or GND}$		5.1	14.6				mA
IC.	V <sub>CC</sub> = 5.25 V,	One bit switching at f <sub>1</sub> = 5 MHz	$\begin{array}{l} V_{IN} \leq 0.2 \ V \ \text{or} \\ V_{IN} \geq V_{CC} - 0.2 \ V \end{array}$					0.7	1.4	IIIA
	f <sub>0</sub> = 10 MHz, Outputs open,	at 50% duty cycle	$V_{IN} = 3.4 V \text{ or GND}$					1.2	3.4	
	$\overline{CEAB} \text{ and } \overline{OEAB} = \\ \text{low, } \overline{CEBA} = \text{high,} \\ f_0 = \overline{LEAB} = 10 \text{ MHz}$	Eight bits switching at f <sub>1</sub> = 5 MHz	$\begin{array}{l} V_{IN} \leq 0.2 \ V \ \text{or} \\ V_{IN} \geq V_{CC} - 0.2 \ V \end{array}$					2.8	5.6ll	
		at 50% duty cycle	$V_{IN} = 3.4 V \text{ or GND}$					5.1	14.6ll	
Ci					5	10		5	10	pF
Co					9	12		9	12	pF

<sup>†</sup> Typical values are at  $V_{CC} = 5 \text{ V}$ ,  $T_A = 25^{\circ}\text{C}$ .

 $\Delta I_{CC}$  = Power-supply current for a TTL high input (V<sub>IN</sub> = 3.4 V)

 $D_H$  = Duty cycle for TTL inputs high

 $N_T$  = Number of TTL inputs at  $D_H$ 

I<sub>CCD</sub> = Dynamic current caused by an input transition pair (HLH or LHL)

= Clock frequency for registered devices, otherwise zero fo

= Input signal frequency f1

= Number of inputs changing at f1 N<sub>1</sub>

All currents are in milliamperes and all frequencies are in megahertz.

Il Values for these conditions are examples of the I<sub>CC</sub> formula.

#### timing requirements over recommended operating free-air temperature range (unless otherwise noted) (see Figure 1)

	PARAMETER		CY54FCT543T		CY74FCT543T		CY74FCT543AT		543CT	UNIT
	FARAIMETER	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UNIT
tw	Pulse duration, LEAB or LEBA	5		5		5		5		ns
t <sub>su</sub>	Setup time, data before $\overline{LEAB}\downarrow$ or $\overline{LEBA}\downarrow$	3		2		2		2		ns
t <sub>h</sub>	Hold time, data after $\overline{LEAB}\downarrow$ or $\overline{LEBA}\downarrow$	2		2		2		2		ns



# CY54FCT543T, CY74FCT543T 8-BIT LATCHED REGISTERED TRANSCEIVERS WITH 3-STATE OUTPUTS SCCS030A - MAY 1994 - REVISED OCTOBER 2001

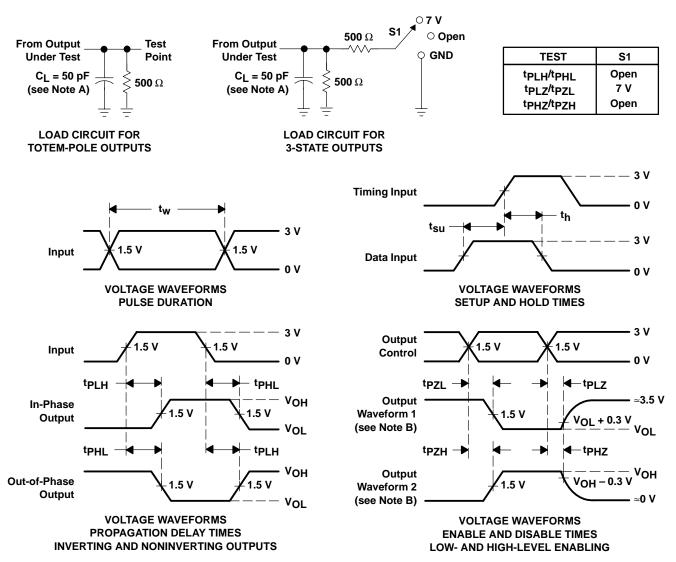
# switching characteristics over operating free-air temperature range (see Figure 1)

PARAMETER	FROM	то	CY54FC	T543T	CY74FC	T543T	CY74FC1	543AT	CY74FCT	543CT	UNIT
FARAIVIETER	(INPUT)	(OUTPUT)	MIN	MAX	MIN	MAX	MIN	MAX	MIN	MAX	UNIT
<sup>t</sup> PLH	A or B	B or A	2	10	2.5	8.5	2.5	6.5	2.5	5.3	ns
<sup>t</sup> PHL	AUB	BUR	2	10	2.5	8.5	2.5	6.5	2.5	5.3	115
<sup>t</sup> PLH	LEBA or LEAB	A or B	2.5	14	2.5	12.5	2.5	8	2.5	7	ns
<sup>t</sup> PHL	LEBA OF LEAB	AUB	2.5	14	2.5	12.5	2.5	8	2.5	7	115
<sup>t</sup> PZH		A or B	2	14	2	12	2	9	2	8	ns
<sup>t</sup> PZL		AOIB	2	14	2	12	2	9	2	8	115
<sup>t</sup> PZH		A or B	2	14	2	12	2	9	2	8	ns
<sup>t</sup> PZL		AUB	2	14	2	12	2	9	2	8	115
<sup>t</sup> PHZ	OEBA or OEAB	A or P	2	13	2	9	2	7.5	2	6.5	-
<sup>t</sup> PLZ		A or B	2	13	2	9	2	7.5	2	6.5	ns
<sup>t</sup> PHZ	CEBA or CEAB	A or CEAB A or B	2	13	2	9	2	7.5	2	6.5	
<sup>t</sup> PLZ		AUID	2	13	2	9	2	7.5	2	6.5	ns



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NOTES: A. CL includes probe and jig capacitance.

 B. Waveform 1 is for an output with internal conditions such that the output is low except when disabled by the output control. Waveform 2 is for an output with internal conditions such that the output is high except when disabled by the output control.
 C. The outputs are measured one at a time with one input transition per measurement.

Figure 1. Load Circuit and Voltage Waveforms



9-Oct-2007

## **PACKAGING INFORMATION**

TEXAS INSTRUMENTS www.ti.com

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Packag Qty	e Eco Plan <sup>(2)</sup>	Lead/Ball Finish	n MSL Peak Temp <sup>(3)</sup>
5962-9222101M3A	ACTIVE	LCCC	FK	28	1	TBD	POST-PLATE	N / A for Pkg Type
5962-9222101MLA	ACTIVE	CDIP	JT	24	1	TBD	A42 SNPB	N / A for Pkg Type
CY54FCT543TDMB	ACTIVE	CDIP	JT	24	1	TBD	A42 SNPB	N / A for Pkg Type
CY54FCT543TLMB	ACTIVE	LCCC	FK	28	1	TBD	POST-PLATE	N / A for Pkg Type
CY74FCT543ATQCT	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543ATQCTE4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543ATQCTG4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543ATSOC	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543ATSOCE4	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543ATSOCG4	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543ATSOCT	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543ATSOCTE4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543ATSOCTG4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTQCT	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543CTQCTE4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543CTQCTG4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543CTSOC	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTSOCE4	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTSOCG4	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTSOCT	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTSOCTE4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543CTSOCTG4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543TQCT	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543TQCTE4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543TQCTG4	ACTIVE	SSOP/ QSOP	DBQ	24	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-2-260C-1 YEAR
CY74FCT543TSOC	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543TSOCE4	ACTIVE	SOIC	DW	24	25	Green (RoHS &	CU NIPDAU	Level-1-260C-UNLIM

Orderable Device	Status <sup>(1)</sup>	Package Type	Package Drawing	Pins	Package Qty	Eco Plan <sup>(2)</sup>	Lead/Ball Finish	MSL Peak Temp <sup>(3)</sup>
						no Sb/Br)		
CY74FCT543TSOCG4	ACTIVE	SOIC	DW	24	25	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543TSOCT	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543TSOCTE4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM
CY74FCT543TSOCTG4	ACTIVE	SOIC	DW	24	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM

<sup>(1)</sup> 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.

<sup>(2)</sup> 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.

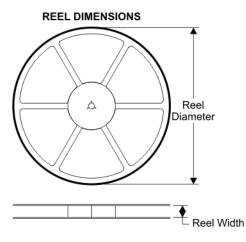
Green (RoHS & no Sb/Br): TI defines "Green" to mean Pb-Free (RoHS compatible), and free of Bromine (Br) and Antimony (Sb) based flame retardants (Br or Sb do not exceed 0.1% by weight in homogeneous material)

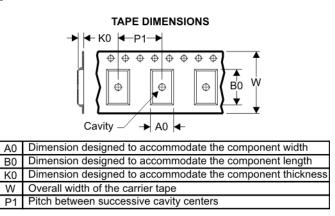
<sup>(3)</sup> MSL, Peak Temp. -- The Moisture Sensitivity Level rating according to the JEDEC industry standard classifications, and peak solder temperature.

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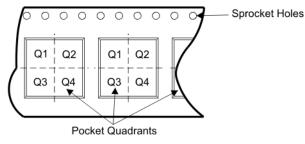
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# TAPE AND REEL BOX INFORMATION





### QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE

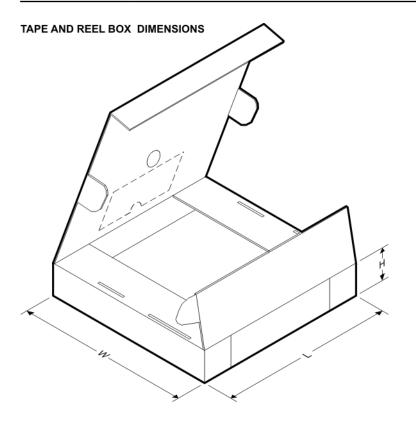


Device	Package	Pins		Reel Diameter (mm)	Reel Width (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
CY74FCT543ATQCT	DBQ	24	SITE 41	330	16	6.5	9.0	2.1	8	16	Q1
CY74FCT543ATSOCT	DW	24	SITE 60	330	24	10.75	15.7	2.7	12	24	Q1
CY74FCT543CTQCT	DBQ	24	SITE 41	330	16	6.5	9.0	2.1	8	16	Q1
CY74FCT543CTSOCT	DW	24	SITE 60	330	24	10.75	15.7	2.7	12	24	Q1
CY74FCT543TQCT	DBQ	24	SITE 41	330	16	6.5	9.0	2.1	8	16	Q1
CY74FCT543TSOCT	DW	24	SITE 60	330	24	10.75	15.7	2.7	12	24	Q1

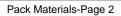


# PACKAGE MATERIALS INFORMATION

4-Oct-2007



Device Packag		Pins	Site	Length (mm)	Width (mm)	Height (mm)
CY74FCT543ATQCT	DBQ	24	SITE 41	346.0	346.0	33.0
CY74FCT543ATSOCT	DW	24	SITE 60	346.0	346.0	41.0
CY74FCT543CTQCT	DBQ	24	SITE 41	346.0	346.0	33.0
CY74FCT543CTSOCT	DW	24	SITE 60	346.0	346.0	41.0
CY74FCT543TQCT	DBQ	24	SITE 41	346.0	346.0	33.0
CY74FCT543TSOCT	DW	24	SITE 60	346.0	346.0	41.0



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