SCBS185B - FEBRUARY 1991 - REVISED JANUARY 1997

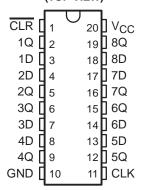
- State-of-the-Art EPIC-IIB™ BiCMOS Design Significantly Reduces Power Dissipation
- Latch-Up Performance Exceeds 500 mA Per JEDEC Standard JESD-17
- Typical V_{OLP} (Output Ground Bounce) < 1 V at V_{CC} = 5 V, T_A = 25°C
- High-Drive Outputs (-32-mA I_{OH}, 64-mA I_{OL})
- Package Options Include Plastic Small-Outline (DW), Shrink Small-Outline (DB), and Thin Shrink Small-Outline (PW) Packages, Ceramic Chip Carriers (FK), Plastic (N) and Ceramic (J) DIPs, and Ceramic Flat (W) Package

description

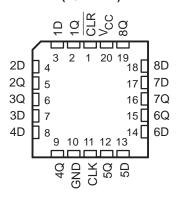
The 'ABT273 are 8-bit positive-edge-triggered D-type flip-flops with a direct clear (CLR) input. They are particularly suitable for implementing buffer and storage registers, shift registers, and pattern generators.

Information at the data (D) inputs meeting the setup time requirements is transferred to the Q outputs on the positive-going edge of the clock pulse. Clock triggering occurs at a particular voltage level and is not directly related to the transition time of the positive-going pulse. When the clock (CLK) input is at either the high or low level, the D input signal has no effect at the output.

SN54ABT273 . . . J OR W PACKAGE SN74ABT273 . . . DB, DW, N, OR PW PACKAGE (TOP VIEW)



SN54ABT273 . . . FK PACKAGE (TOP VIEW)



The SN54ABT273 is characterized for operation over the full military temperature range of -55° C to 125° C. The SN74ABT273 is characterized for operation from -40° C to 85° C.

FUNCTION TABLE (each flip-flop)

	INPUTS	OUTPUT	
CLR	CLK	D	Q
L	Х	Χ	L
Н	\uparrow	Н	Н
Н	\uparrow	L	L
Н	H or L	Χ	Q_0



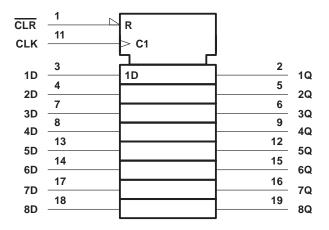
Please be aware that an important notice concerning availability, standard warranty, and use in critical applications of Texas Instruments semiconductor products and disclaimers thereto appears at the end of this data sheet.

EPIC-IIB is a trademark of Texas Instruments Incorporated



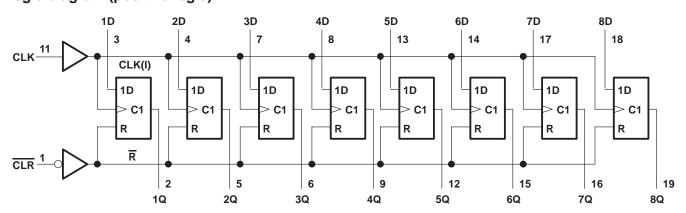
SCBS185B - FEBRUARY 1991 - REVISED JANUARY 1997

logic symbol[†]



[†] This symbol is in accordance with ANSI/IEEE Std 91-1984 and IEC Publication 617-12.

logic diagram (positive logic)



absolute maximum ratings over operating free-air temperature range (unless otherwise noted)‡

Supply voltage range, V _{CC}		0.5 V to 7 V
Input voltage range, V _I (see Note 1)		. −0.5 V to 7 V
Voltage range applied to any output in the high o	or power-off state, V _O	–0.5 V to 5.5 V
Current into any output in the low state, IO: SN5-	54ABT273	96 mA
SN7	74ABT273	128 mA
Input clamp current, I_{IK} ($V_I < 0$)		–18 mA
Output clamp current, I _{OK} (V _O < 0)		–50 mA
Package thermal impedance, θ_{JA} (see Note 2): I	DB package	115°C/W
]	DW package	97°C/W
1	N package	67°C/W
F	PW package	128°C/W
Storage temperature range, T _{stq}		-65°C to 150°C

[‡] 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.

The package thermal impedance is calculated in accordance with EIA/JEDEC Std JESD51, except for through-hole packages, which use a trace length of zero.



NOTES: 1. The input and output negative-voltage ratings may be exceeded if the input and output clamp-current ratings are observed.

SCBS185B - FEBRUARY 1991 - REVISED JANUARY 1997

recommended operating conditions (see Note 3)

		SN54A	BT273	SN74A	BT273	UNIT
		MIN	MAX	MIN	MAX	UNIT
Vcc	Supply voltage	4.5	5.5	4.5	5.5	V
VIH	High-level input voltage	2		2		V
VIL	Low-level input voltage		0.8		0.8	V
VI	Input voltage	0	VCC	0	VCC	V
IOH	High-level output current		-24		-32	mA
lOL	Low-level output current		48		64	mA
Δt/Δν	Input transition rise or fall rate		10		10	ns/V
TA	Operating free-air temperature	- 55	125	-40	85	°C

NOTE 3: Unused inputs must be held high or low to prevent them from floating.

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

PARAMETER	TEST CONDITIONS				A = 25°	2	SN54A	BT273	SN74A	UNIT		
PARAMETER	'	TEST CONDITION	io	MIN	TYP [†]	MAX	MIN	MAX	MIN	MAX	UNIT	
VIK	$V_{CC} = 4.5 \text{ V},$	I _I = -18 mA				-1.2		-1.2		-1.2	V	
	$V_{CC} = 4.5 \text{ V},$	$I_{OH} = -3 \text{ mA}$		2.5			2.5		2.5			
Vari	V _{CC} = 5 V,	$I_{OH} = -3 \text{ mA}$		3			3		3		V	
VOH	V _{CC} = 4.5 V	I _{OH} = -24 mA		2			2				V	
	vCC = 4.5 v	$I_{OH} = -32 \text{ mA}$	I _{OH} = -32 mA						2			
Vol	V _{CC} = 4.5 V	$I_{OL} = 48 \text{ mA}$				0.55		0.55			V	
VOL	VCC = 4.0 V	$I_{OL} = 64 \text{ mA}$				0.55*			0.55		·	
V _{hys}					100						mV	
II	$V_{CC} = 5.5 \text{ V},$	$V_I = V_{CC}$ or GI	ND			±1		±1		±1	μΑ	
l _{off}	$V_{CC} = 0$,	V_I or $V_O \le 4.5$	V			±100				±100	μΑ	
ICEX	$V_{CC} = 5.5 \text{ V},$	V _O = 5.5 V	Outputs high			50		50		50	μΑ	
1 ₀ ‡	$V_{CC} = 5.5 \text{ V},$	V _O = 2.5 V		-50	-100	-200§	-50	-200§	-50	-200§	mA	
las	V _{CC} = 5.5 V, I _O	= 0,	Outputs high		1	400§		400§		400§	μΑ	
Icc	$V_I = V_{CC}$ or GN	V _I = V _{CC} or GND			24	30		30		30	mA	
ΔI _{CC} ¶	V _{CC} = 5.5 V, Or Other inputs at V				1.5		1.5		1.5	mA		
Ci	$V_{I} = 2.5 \text{ V or } 0.5$	5 V	·		7						pF	

^{*} On products compliant to MIL-PRF-38535, this parameter does not apply.



[†] All typical values are at $V_{CC} = 5 \text{ V}$.

[‡] Not more than one output should be tested at a time, and the duration of the test should not exceed one second.

[§] This data sheet limit may vary among suppliers.

 $[\]P$ This is the increase in supply current for each input that is at the specified TTL voltage level rather than V_{CC} or GND.

SN54ABT273, SN74ABT273 OCTAL EDGE-TRIGGERED D-TYPE FLIP-FLOPS WITH CLEAR

SCBS185B - FEBRUARY 1991 - REVISED JANUARY 1997

timing requirements over recommended ranges of supply voltage and operating free-air temperature (unless otherwise noted) (see Figure 1)

						BT273	SN74ABT273		UNIT
			MIN	MAX	MIN	MAX	MIN	MAX	
fclock	Clock frequency		0	150	0	150	0	150	MHz
	Pulse duration	CLK high or low	3.3		3.3		3.3		ns
t _W	ruise duration	CLR low	3.3		3.3		3.3		115
		Data high	2		2		2		
t _{su}	Setup time before CLK↑	Data low	2.5		2.5		2.5		ns
		CLR high	2		2		2	·	
t _h	Hold time after CLK↑	Data high or low	1.2†		1.4†		1.2†		ns

[†] This data sheet limit may vary among suppliers.

switching characteristics over recommended ranges of supply voltage and operating free-air temperature, $C_L = 50$ pF (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} =	= 5 V, 25°C	SN54A	UNIT	
	(1141 01)	(0011 01)	MIN	MAX	MIN	MAX	
fmax			150		150		MHz
^t PLH	CLIV	Q	2.5	6	2.5	7	ns
t _{PHL}	CLK	ζ	3.3	6.8	3.3	7.5	115
t _{PHL}	CLR	Q	2.5	7.5†	2.5	8.2	ns

[†] This data sheet limit may vary among suppliers.

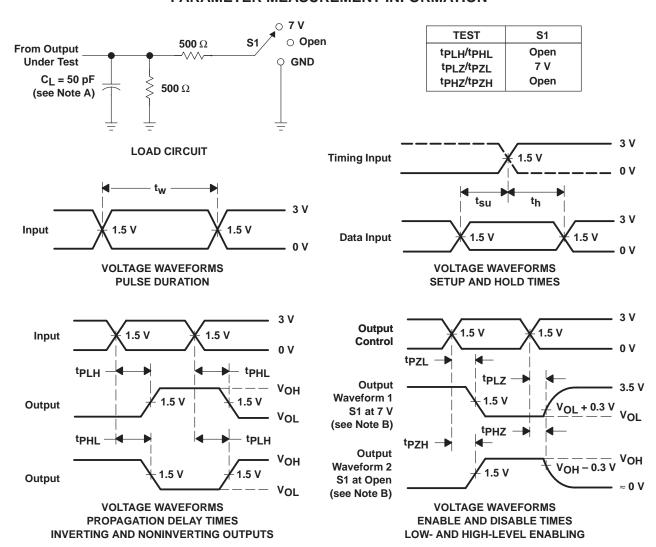
switching characteristics over recommended ranges of supply voltage and operating free-air temperature, $C_L = 50$ pF (unless otherwise noted) (see Figure 1)

PARAMETER	FROM (INPUT)	TO (OUTPUT)	V _{CC} =	= 5 V, 25°C	SN74A	UNIT	
	(1141 01)	(0011 01)	MIN	MAX	MIN	MAX	
fmax			150		150		MHz
t _{PLH}	CLK	0	2.5	6	2.5	6.5	ns
t _{PHL}	CLN	Q	3.3	6.8	3.3	7.3	115
t _{PHL}	CLR	Q	2.5	6.7†	2.5	7.4†	ns

[†]This data sheet limit may vary among suppliers.



PARAMETER MEASUREMENT INFORMATION



NOTES: A. C_L 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. All input pulses are supplied by generators having the following characteristics: PRR \leq 10 MHz, $Z_O = 50~\Omega$, $t_f \leq$ 2.5 ns, $t_f \leq$ 2.5 ns.
- D. The outputs are measured one at a time with one transition per measurement.

Figure 1. Load Circuit and Voltage Waveforms

www.ti.com

20-Nov-2025

PACKAGING INFORMATION

Orderable part number	Status (1)	Material type	Package Pins	Package qty Carrier	RoHS (3)	Lead finish/ Ball material	MSL rating/ Peak reflow	Op temp (°C)	Part marking (6)
5962-9321701Q2A	Active	Production	LCCC (FK) 20	55 TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962- 9321701Q2A SNJ54ABT 273FK
5962-9321701QRA	Active	Production	CDIP (J) 20	20 TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9321701QR A SNJ54ABT273J
5962-9321701QSA	Active	Production	CFP (W) 20	25 TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962-9321701QS A SNJ54ABT273W
SN74ABT273DBR	Active	Production	SSOP (DB) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273DBR.B	Active	Production	SSOP (DB) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273DBRG4	Active	Production	SSOP (DB) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273DW	Active	Production	SOIC (DW) 20	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DW.B	Active	Production	SOIC (DW) 20	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DWG4	Active	Production	SOIC (DW) 20	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DWG4.B	Active	Production	SOIC (DW) 20	25 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DWR	Active	Production	SOIC (DW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DWR.B	Active	Production	SOIC (DW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273DWRG4	Active	Production	SOIC (DW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273N	Active	Production	PDIP (N) 20	20 TUBE	Yes	NIPDAU	N/A for Pkg Type	-40 to 85	SN74ABT273N
SN74ABT273N.B	Active	Production	PDIP (N) 20	20 TUBE	Yes	NIPDAU	N/A for Pkg Type	-40 to 85	SN74ABT273N
SN74ABT273NSR	Active	Production	SOP (NS) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273NSR.B	Active	Production	SOP (NS) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	ABT273
SN74ABT273PW	Active	Production	TSSOP (PW) 20	70 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273PW.B	Active	Production	TSSOP (PW) 20	70 TUBE	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273PWR	Active	Production	TSSOP (PW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273PWR.B	Active	Production	TSSOP (PW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273PWRG4	Active	Production	TSSOP (PW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273
SN74ABT273PWRG4.B	Active	Production	TSSOP (PW) 20	2000 LARGE T&R	Yes	NIPDAU	Level-1-260C-UNLIM	-40 to 85	AB273

-55 to 125

-55 to 125

20-Nov-2025

273FK

5962-9321701QR A SNJ54ABT273J

5962-9321701QS A SNJ54ABT273W



SNJ54ABT273J

SNJ54ABT273W

www.ti.com

Orderable part number	Status	Material type	Package Pins	Package qty Carrier	RoHS	Lead finish/ Ball material	MSL rating/ Peak reflow	Op temp (°C)	Part marking (6)
						(4)	(5)		
SNJ54ABT273FK	Active	Production	LCCC (FK) 20	55 TUBE	No	SNPB	N/A for Pkg Type	-55 to 125	5962- 9321701Q2A SNJ54ABT

No

No

SNPB

SNPB

N/A for Pkg Type

N/A for Pkg Type

20 | TUBE

25 | TUBE

(1) Status	For more details on status	see our product life	cycle

Active

Active

Production

Production

CDIP (J) | 20

CFP (W) | 20

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.

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.

⁽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.

PACKAGE OPTION ADDENDUM

www.ti.com 20-Nov-2025

OTHER QUALIFIED VERSIONS OF SN54ABT273, SN74ABT273:

◆ Catalog : SN74ABT273

• Military : SN54ABT273

NOTE: Qualified Version Definitions:

• Catalog - TI's standard catalog product

• Military - QML certified for Military and Defense Applications

PACKAGE MATERIALS INFORMATION

www.ti.com 24-Jul-2025

TAPE AND REEL INFORMATION





	Dimension designed to accommodate the component width
В0	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		SPQ	Reel Diameter (mm)	Reel Width W1 (mm)	A0 (mm)	B0 (mm)	K0 (mm)	P1 (mm)	W (mm)	Pin1 Quadrant
SN74ABT273DBR	SSOP	DB	20	2000	330.0	16.4	8.2	7.5	2.5	12.0	16.0	Q1
SN74ABT273DWR	SOIC	DW	20	2000	330.0	24.4	10.9	13.3	2.7	12.0	24.0	Q1
SN74ABT273NSR	SOP	NS	20	2000	330.0	24.4	8.4	13.0	2.5	12.0	24.0	Q1
SN74ABT273PWR	TSSOP	PW	20	2000	330.0	16.4	6.95	7.0	1.4	8.0	16.0	Q1
SN74ABT273PWRG4	TSSOP	PW	20	2000	330.0	16.4	6.95	7.0	1.4	8.0	16.0	Q1



www.ti.com 24-Jul-2025



*All dimensions are nominal

7 til dilliciololio ale Hollinai							
Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74ABT273DBR	SSOP	DB	20	2000	353.0	353.0	32.0
SN74ABT273DWR	SOIC	DW	20	2000	356.0	356.0	45.0
SN74ABT273NSR	SOP	NS	20	2000	356.0	356.0	45.0
SN74ABT273PWR	TSSOP	PW	20	2000	353.0	353.0	32.0
SN74ABT273PWRG4	TSSOP	PW	20	2000	353.0	353.0	32.0

PACKAGE MATERIALS INFORMATION

www.ti.com 24-Jul-2025

TUBE



*All dimensions are nominal

Device	Package Name	Package Type	Pins	SPQ	L (mm)	W (mm)	T (µm)	B (mm)
5962-9321701Q2A	FK	LCCC	20	55	506.98	12.06	2030	NA
5962-9321701QSA	W	CFP	20	25	506.98	26.16	6220	NA
SN74ABT273DW	DW	SOIC	20	25	507	12.83	5080	6.6
SN74ABT273DW.B	DW	SOIC	20	25	507	12.83	5080	6.6
SN74ABT273DWG4	DW	SOIC	20	25	507	12.83	5080	6.6
SN74ABT273DWG4.B	DW	SOIC	20	25	507	12.83	5080	6.6
SN74ABT273N	N	PDIP	20	20	506	13.97	11230	4.32
SN74ABT273N.B	N	PDIP	20	20	506	13.97	11230	4.32
SN74ABT273PW	PW	TSSOP	20	70	530	10.2	3600	3.5
SN74ABT273PW.B	PW	TSSOP	20	70	530	10.2	3600	3.5
SNJ54ABT273FK	FK	LCCC	20	55	506.98	12.06	2030	NA
SNJ54ABT273W	W	CFP	20	25	506.98	26.16	6220	NA





- 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. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.
- 5. Reference JEDEC registration MO-150.





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.





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.



MECHANICAL DATA

NS (R-PDSO-G**)

14-PINS SHOWN

PLASTIC SMALL-OUTLINE PACKAGE



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Body dimensions do not include mold flash or protrusion, not to exceed 0,15.



14 LEADS SHOWN



- 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.

8.89 x 8.89, 1.27 mm pitch

LEADLESS CERAMIC CHIP CARRIER

This image is a representation of the package family, actual package may vary. Refer to the product data sheet for package details.



INSTRUMENTS www.ti.com

N (R-PDIP-T**)

PLASTIC DUAL-IN-LINE PACKAGE

16 PINS SHOWN



- 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.





SOIC



- 1. All linear dimensions are in millimeters. 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. This dimension does not include interlead flash. Interlead flash shall not exceed 0.43 mm per side.
- 5. Reference JEDEC registration MS-013.



SOIC



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.



SOIC



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.



W (R-GDFP-F20)

CERAMIC DUAL FLATPACK



- A. All linear dimensions are in inches (millimeters).
- This drawing is subject to change without notice.
- C. This package can be hermetically sealed with a ceramic lid using glass frit.

 D. Index point is provided on cap for terminal identification only.

 E. Falls within Mil—Std 1835 GDFP2—F20







- 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. This dimension does not include interlead flash. Interlead flash shall not exceed 0.25 mm per side.
- 5. Reference JEDEC registration MO-153.





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.





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.



IMPORTANT NOTICE AND DISCLAIMER

TI PROVIDES TECHNICAL AND RELIABILITY DATA (INCLUDING DATASHEETS), DESIGN RESOURCES (INCLUDING REFERENCE DESIGNS), APPLICATION OR OTHER DESIGN ADVICE, WEB TOOLS, SAFETY INFORMATION, AND OTHER RESOURCES "AS IS" AND WITH ALL FAULTS, AND DISCLAIMS ALL WARRANTIES, EXPRESS AND IMPLIED, INCLUDING WITHOUT LIMITATION ANY IMPLIED WARRANTIES OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR NON-INFRINGEMENT OF THIRD PARTY INTELLECTUAL PROPERTY RIGHTS.

These resources are intended for skilled developers designing with TI products. You are solely responsible for (1) selecting the appropriate TI products for your application, (2) designing, validating and testing your application, and (3) ensuring your application meets applicable standards, and any other safety, security, regulatory or other requirements.

These resources are subject to change without notice. TI grants you permission to use these resources only for development of an application that uses the TI products described in the resource. Other reproduction and display of these resources is prohibited. No license is granted to any other TI intellectual property right or to any third party intellectual property right. TI disclaims responsibility for, and you fully indemnify TI and its representatives against any claims, damages, costs, losses, and liabilities arising out of your use of these resources.

TI's products are provided subject to TI's Terms of Sale, TI's General Quality Guidelines, or other applicable terms available either on ti.com or provided in conjunction with such TI products. TI's provision of these resources does not expand or otherwise alter TI's applicable warranties or warranty disclaimers for TI products. Unless TI explicitly designates a product as custom or customer-specified, TI products are standard, catalog, general purpose devices.

TI objects to and rejects any additional or different terms you may propose.

Copyright © 2025, Texas Instruments Incorporated

Last updated 10/2025