SN54157, SN54LS157, SN54LS158, SN54S157, SN54S158, SN74157, SN74LS157, SN74LS158, SN74S157, SN74S158 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

MARCH 1974 - REVISED MARCH 1988

- Buffered Inputs and Outputs
- Three Speed/Power Ranges Available

	TYPICAL	TYPICAL
****	AVERAGE	
TYPES	PROPAGATION	POWER
	TIME	DISSIPATION
157	9 ns	150 mW
'LS157	9 ns	49 mW
' \$1 5 7	5 ns	250 mW
'LS158	7 ns	24 mW
'S158	4 ns	195 mW

applications

- Expand Any Data Input Point
- Multiplex Dual Data Buses
- Generate Four Functions of Two Variables (One Variable Is Common)
- Source Programmable Counters

description

These monolithic data selectors/multiplexers contain inverters and drivers to supply full on-chip data selection to the four output gates. A separate strobe input is provided. A 4-bit word is selected from one of two sources and is routed to the four outputs. The '157, 'LS157, and 'S157 present true data whereas the 'LS158 and 'S158 present inverted data to minimize propagation delay time.

FUNCTION TABLE

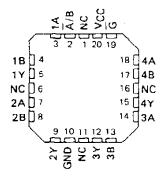
	INPL	JTS	_	OUTPUT Y					
STROBE	SELECT A/B	А	ម	157, LS157, S157	'L\$158 '\$158				
Н	X	×	Х	L	H				
L	L	L	×	L	н				
L	L	н	х	н	L				
L	н	X	L	L	Н				
L	н	×	Н	ј н	Ł				

H = high level, L = low level, X = irrelevant

SN54157, SN54LS157, SN54S157, SN54LS158, SN54S158...J OR Ŵ PACKAGE SN74157...N PACKAGE SN74LS157, SN74S157, SN74LS158. SN74S158...D OR N PACKAGE (TOP VIEW)

Ā/B∐ī	V ₁₆ V _{CC}
1A 🔲 2	15 🔲 👨
1 B □3	14 🗌 4A
1Y∐4	13 🗍 4B
2A 🛛 5	12 🏻 4Y
2B ∏6	11 🗒 3A
2Y 🔲 7	10 🛚 3B
. GND 🗌 8	9 3Y

\$N54L\$157, \$N54\$157, \$N54L\$158, \$N54\$158...FK PACKAGE (TOP VIEW)



NC - No internal connection

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

Supply voltage, VCC (See Note 1)	********************************	
	• • • • • • • • • • • • • • • • • • • •	
'LS157, 'LS158		7 V
Operating free-air temperature range:	SN54'	-55°C to 125°C
	SN74'	0°C to 70°C
Storage temperature range		-65°C to 150°C

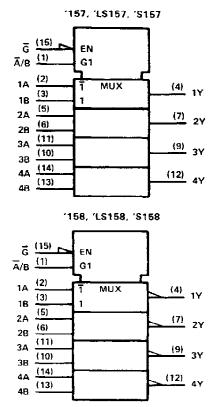
NOTE 1: Voltage values are with respect to network ground terminal.

PRODUCTION DATA documents contain information current as of nublication date. Products conform to specifications our the terms of Team instruments standard waverenty. Production processing does not not usually include testing of all parameters.

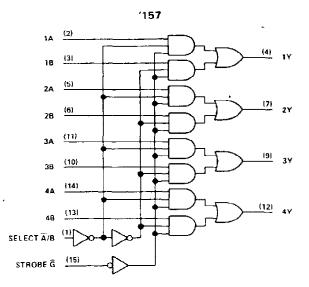


SN54157, SN54LS157, SN54LS158, SN54S157, SN54S158, SN74157, SN74LS157, SN74LS158, SN74S157, SN74S158 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

logic symbols†



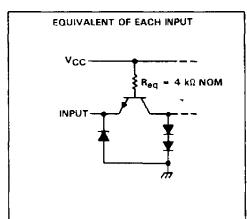
logic diagram (positive logic)

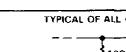


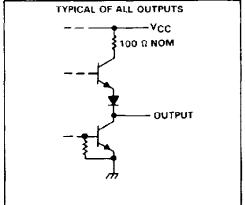
Pin numbers shown are for D, J, N, and W packages.

schematics of inputs and outputs





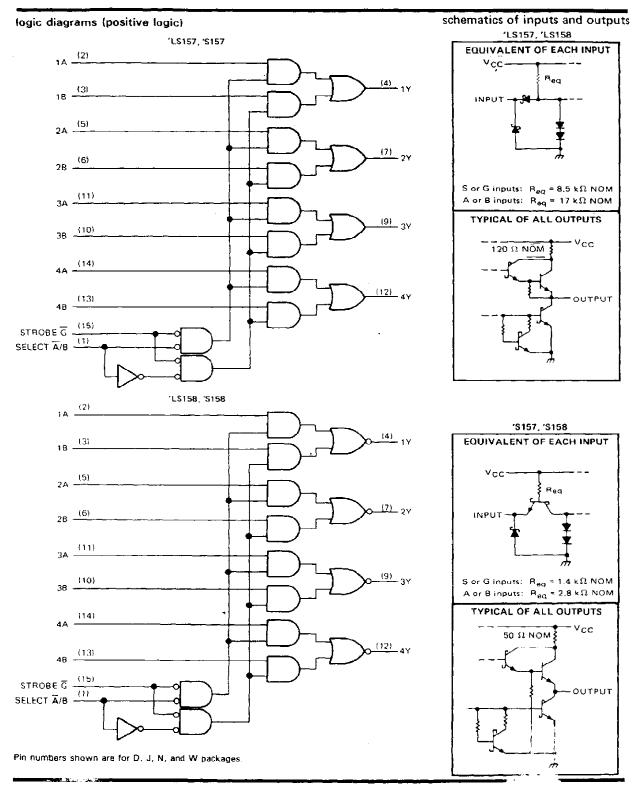




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¹These symbols are in accordance with ANSI/IEEE Std. 91-1984 and IEC Publication 617-12.

SN54LS157, SN54LS158, SN54S157, SN54S158, SN74LS157, SN74LS158, SN74S157, SN74S158 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS



SN54157, SN74157 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

recommended operating conditions

		\$N54157					UNIT
	MIN	NOM	MAX	MIN	NOM	MAX	ON
Supply voltage, V _{CC}	4.5	5	5.5	4,75	5	5.25	
High-level output current, IOH	, ,		-800			-800	μΑ
Low-level output current, IOL			16			16	mA
Operating free-air temperature, TA	-55		125	0		70	°c

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

DADAMETER		7507.0	TEST CONDITIONS [†]		SN5415	7	1	7	LINIT	
	PARAMETER	TEST CONDITIONS.		MIN	TYP	MAX	MIN	TYP	MAX	UNIT
V_{IH}	High-level input voltage			2			2			V
VIL	Low-level input voltage	•		1		8.0			0.8	V
VIK	Input clamp voltage	VCC = MIN,	1 ₁ = - 12 mA	1		- 1.5			~ 1.5	٧
Voн	High-level output voltage	V _{CC} = MIN, V _{IL} = 0.8 V.	V _{IH} = 2 V, I _{OH} = -800 µA	2.4	3.4		2.4	3.4		V
You	Low-level output voltage	V _{CC} = MIN, V _{IL} = 0.8 V,	V _{IH} = 2 V, 1 _{OL} = 16 mA		0.2	0.4		0.2	0.4	٧
Ιį	Input current at maximum input voltage	VCC = MAX,	V _I = 5.5 V			1			1	mA
ΊΗ	High-level input current	VCC = MAX,	V ₁ = 2.4 V	T .		40			40	μА
ЧL	Low level input current	VCC = MAX,	V _I = 0.4 V ·			-1.6			-1.6	пΑ
los	Short-circuit output current§	V _{CC} = MAX		-20		-55	-18		- 55	mA
ICC	Supply current	VCC = MAX.	See Note 2	1	30	48		30	48	mΑ

¹ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

switching characteristics, VCC = 5 V, TA = 25°C

PARAMETER¶	FROM (INPUT)	TEST CONDITIONS	MIN	TYP	MAX	UNIT
tPLH .	D-1-			9	14	ns
^t PHL	Data	0 - 15 - 5		9	14	
1PLH	Strobe C	$C_L = 15 \text{ pF},$ Strobe \overline{G} $R_L = 400 \text{ s},$		13	20	
1PHL	attobe G			14	21	ns
tPLH	Select A/B	See Note 3		15	23	ns
†PHL	aelect A/B		Ī-	18	27] ""5

 $[\]mathbf{1}_{tpLH}$ = propagation delay time, low-to-high-level output

 $^{^{\}ddagger}$ All typical values are at $V_{CC} = 5 \text{ V}$, $T_{A} = 25^{\circ}\text{C}$.

⁸ Not more than one output should be shorted at a time and duration of short-circuit should not exceed one second.

NOTE 2: ICC is measured with 4.5 V applied to all inputs and all outputs open,

tpHL = propagation delay time, high-to-low-level output

NOTE 3: Load circuits and voltage waveforms are shown in Section 1.

SN54LS157, SN54LS158, SN74LS157, SN74LS158 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

recommended operating conditions

		SN54LS'			SN74LS'		
	MIN	NOM	MAX	MIN	NOM	MAX	UNIT
V _{CC} Supply voltage	4.5	5	5.5	4.75	5	5.25	V
IOH High-level output current			-400			-400	μА
IOL Low-level output current			4			8	mA
TA Operating free-air temperature	-55		125	0		70	°C

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

	DA 0 4445				at		SN54LS			SN74LS	·	
	PARAME	IEK	TES	T CONDITION	Si	MIN	TYP‡	MAX	MIN	ТҮР‡	MAX	UNIT
ViH	High-level inpu	t voltage				2		_	2			٧
VIL	Low-level input	t voltage		-			•	0.7			0.8	٧
Vik	Input clamp vo	Itage	V _{CC} - MIN,	I _I = -18 mA				-1.5			-1.5	V
νон	High-level outp	ut voltage	V _{CC} = MIN, V _{IH} = 2 V, V _{IL} = MAX, I _{OH} = -400 μA		2.5	3.4		2.7	3.4		٧	
			V _{CC} = MIN,	V _{IH} = 2 V.	IOL = 4 mA		0.25	0.4		0.25	0.4	V
VOL	Low-level outpo	ut voltage	V _{IL} ≈ MAX		IOL = 8 mA					0.35	0.5	· ·
Ц	Input current at maximum	Ā/B ar G	V _{CC} = MAX.	V ₁ = 7 V				0.2			0.2	mA
'''	input voltage	A or B	CC - MAX.	VI - 7 V				0.1			0.1	
1	High-level	A/B or G	V MAY	V = 2.7 V	•			40			40	
1IH	input current	A or B	V _{CC} = MAX,	V - 2.7 V				20			20	μA
1	Low-tevel	A/B or G	Vcc = MAX,	V = 0.434				-O.8			-0.8	mΑ
11L	input current	A or B	OCC - MAA,	V - 0.4 V				-0.4			-0.4	
los	Short-circuit ou	itput current§	V _{CC} = MAX			-20		-100	-20		-100	mA
					'LS157	1	9.7	16		9.7	16	
	All A inpu		VCC = MAX,	X, See Note 2			4.8	8		4.8	8	
¹ cc			V _{CC} = MAX, All A inputs at All other inputs	· ·	'L\$158		6.5	11		6.5	11	mΑ

¹ For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions. \ddagger All typical values are at V_{CC} = 5 V, T_A = 25 °C, 8...

switching characteristics, $V_{CC} = 5 \text{ V}$, $T_A = 25^{\circ} \text{ C}$

PARAMETER	FROM	TEST COMPLIANCE		'LS157	7	Ţ	UNIT		
L ANAMICIEN 1	(INPUT)	TEST CONDITIONS	MIN	TYP	MAX	MIN	TYP	MAX	0.0
1PLH	N			9	14		7	12	
1PHL	Data	0 45 5		9	14		10	15	ns
1PLH		C _L = 15 pF,		13	20	Ī	11	17	
tPHL	Strobe G	R _L = 2 kΩ,		14	21	Τ	18	24	ns
tPLH	Select A/B	See Note 3		15	23		13	20	
TPHL	Select A/B	+		18	27		16	24	ns

ItpLH = propagation delay time, low-to-high-level output

^{\$} Not more than one output should be shorted at a time and duration of short-circuit should not exceed one second.

NOTE 2: $I_{\mbox{CC}}$ is measured with 4.5 V applied to all inputs and all outputs open.

tpнt = propagation delay time, high-to-low-level output NOTE 3: Load circuits and voltage diagrams are shown in Section 1.

SN54S157, SN54S158, SN74S157, SN74S158 QUADRUPLE 2-LINE TO 1-LINE DATA SELECTORS/MULTIPLEXERS

recommended operating conditions

	i	SN54S157 SN54S158				SN74S157 SN74S158			
	MIN	NOM	MAX	MIN	NOM	MAX	l		
Supply voltage, V _{CC}	4.5	5	5.5	4.75	5	5.25	٧		
High-level output current, IOH			-1			-1	mA		
Low-level output current, IOL		•	20			20	mΑ		
Operating free-air temperature, TA	55		125	0		70	°C		

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

	PARAMETER		TES	TEST CONDITIONS [†]		SN54S157 SN74S157			ĺ	58 58	UNIT	
		_	ĺ			MIN	ТҮР‡	MAX	MIN	TYP‡	MAX	
VIH	High-level input voltage					2			2			٧
VIL	Low-level input voltage		[8.0			0.8	
v_{tK}	Input clamp voltage	_	VCC = MIN,	I _I = -18 mA				-1.2			-1.2	٧
Vau	High-level output voltage		VCC = MIN.	V _{1H} = 2 V,	Series 545	2.5	3.4		2.5	3.4		V
YOH	mign-lever output voltage		VIL = 0.8 V.	I _{OH} = -1 mA	Series 74S	2.7	3.4		2.7	3.4		"
V ₀ L	Low-level output voltage		V _{CC} = MIN, V _{IL} = 0.8 V,	V _{IH} = 2 V, I _{OL} = 20 mA				0.5			0.5	٧
ij	Input current at maximum	nput voltage	VCC = MAX,	V ₁ = 5.5 V	,			1	ļ		1	mΑ
ΊΗ	- High-level input current I-	Ā/B or G A or B	VCC = MAX,	V ₁ = 2.7 V				100 50			100 50	μД
HE	Low-level input current	A/B or G A or B	V _{CC} = MAX,	V ₁ = 0.5 V	· · · · · · · · · · · · · · · · · · ·			_4 _2			4	mA
los	Short-circuit ouput curren	ıt §	V _{CC} = MAX	· · · · · · · · · · · · · · · · · · ·		-40		-100	_40		-100	mA
			V _{CC} = MAX, See Note 2	All inputs at 4	.5 V,		50	78		39	61	
lac	Supply current			A inputs at 4.5 at 0 V, See N							81	mA

^{*} For conditions shown as MIN or MAX, use the appropriate value specified under recommended operating conditions.

witching characteristics, V_{CC} = 5 V, T_A = 25°C

PARAMETER ¶	FROM	TEST CONDITIONS	SN54S157 SN74S157			SN54S158 SN74S158			UNIT
	(INPUT)		MIN	TYP	MAX	MIN	TYP	MAX	
^t PLH				5	7.5		4	6	ns 5
tPHL .	Data	C 15 of		4.5	6.5		4	6	
^t PLH	Strobe G	$C_L = 15 pF$, $R_L = 280 \Omega$,		8.5	12.5		6.5	11.5	
tPHL	Strone G	NL = 280 14, See Note 3		7.5	12		7	12	112
tPLH .	Select A/B	266 14016 2		9.5	15		8	12	ns
tPHL .	Select A/R			9.5	15		8	12	1113

TtpLH = propagation delay time, low-to-high-level output



 $[\]ddagger$ All typical values are at V_{CC} = 5 V, T_{A} = 25°C.

^{\$} Not more than one output should be shorted at a time, and duration of the short-circuit should not exceed one second.

Note 2: ICC is measured with all outputs open.

tpHL = propagation delay time, high-to-low-level output

NOTE 3: Load circuits and voltage waveforms are shown in Section 1.

25-Jan-2012

PACKAGING INFORMATION

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak Temp ⁽³⁾	Samples (Requires Login)
76002012A	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Call TI	
7600201EA	ACTIVE	CDIP	J	16	1	TBD	Call TI	Call TI	
7600201FA	ACTIVE	CFP	W	16	1	TBD	Call TI	Call TI	
76033012A	ACTIVE	LCCC	FK	20	1	TBD	Call TI	Call TI	
7603301EA	ACTIVE	CDIP	J	16	1	TBD	Call TI	Call TI	
7603301FA	ACTIVE	CFP	W	16	1	TBD	Call TI	Call TI	
JM38510/07903BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
JM38510/07903BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
JM38510/07904BEA	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI	
JM38510/07904BFA	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI	
JM38510/30903B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	
JM38510/30903BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
JM38510/30903BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
M38510/07903BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
M38510/07903BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
M38510/30903B2A	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	
M38510/30903BEA	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
M38510/30903BFA	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
SN54157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SN54LS157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SN54LS158J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SN54S157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SN54S158J	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI	
SN74157N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74157N3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74LS157D	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157DE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	



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Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak Temp ⁽³⁾	Samples (Requires Login)
SN74LS157DG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157DR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157DRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157DRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157N	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74LS157N3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74LS157NE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74LS157NSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157NSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS157NSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158D	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158DE4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158DG4	ACTIVE	SOIC	D	16	40	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158DR	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158DRE4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158DRG4	ACTIVE	SOIC	D	16	2500	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158N	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74LS158N3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74LS158NE4	ACTIVE	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74LS158NSR	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	





www.ti.com 25-Jan-2012

Orderable Device	Status (1)	Package Type	Package Drawing	Pins	Package Qty	Eco Plan ⁽²⁾	Lead/ Ball Finish	MSL Peak Temp ⁽³⁾	Samples (Requires Login)
SN74LS158NSRE4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74LS158NSRG4	ACTIVE	SO	NS	16	2000	Green (RoHS & no Sb/Br)	CU NIPDAU	Level-1-260C-UNLIM	
SN74S157N	NRND	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74S157N3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74S157NE4	NRND	PDIP	N	16	25	Pb-Free (RoHS)	CU NIPDAU	N / A for Pkg Type	
SN74S158D	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI	
SN74S158DR	OBSOLETE	SOIC	D	16		TBD	Call TI	Call TI	
SN74S158N	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SN74S158N3	OBSOLETE	PDIP	N	16		TBD	Call TI	Call TI	
SNJ54157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SNJ54157W	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
SNJ54LS157FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	
SNJ54LS157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SNJ54LS157W	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
SNJ54LS158FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	
SNJ54LS158J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SNJ54LS158W	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
SNJ54S157FK	ACTIVE	LCCC	FK	20	1	TBD	POST-PLATE	N / A for Pkg Type	
SNJ54S157J	ACTIVE	CDIP	J	16	1	TBD	A42	N / A for Pkg Type	
SNJ54S157W	ACTIVE	CFP	W	16	1	TBD	A42	N / A for Pkg Type	
SNJ54S158FK	OBSOLETE	LCCC	FK	20		TBD	Call TI	Call TI	
SNJ54S158J	OBSOLETE	CDIP	J	16		TBD	Call TI	Call TI	
SNJ54S158W	OBSOLETE	CFP	W	16		TBD	Call TI	Call TI	

⁽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.



PACKAGE OPTION ADDENDUM

25-Jan-2012

(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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OTHER QUALIFIED VERSIONS OF SN54157, SN54LS157, SN54LS158, SN54S157, SN54S158, SN74157, SN74LS157, SN74LS158, SN74S158;

- Catalog: SN74157, SN74LS157, SN74LS158, SN74S157, SN74S158
- Military: SN54157, SN54LS157, SN54LS158, SN54S157, SN54S158

NOTE: Qualified Version Definitions:

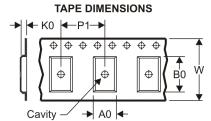
- Catalog TI's standard catalog product
- Military QML certified for Military and Defense Applications

PACKAGE MATERIALS INFORMATION

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TAPE AND REEL INFORMATION





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

QUADRANT ASSIGNMENTS FOR PIN 1 ORIENTATION IN TAPE



*All dimensions are nominal

All difficultions are norminal												
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
SN74LS157DR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74LS157NSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1
SN74LS158DR	SOIC	D	16	2500	330.0	16.4	6.5	10.3	2.1	8.0	16.0	Q1
SN74LS158NSR	SO	NS	16	2000	330.0	16.4	8.2	10.5	2.5	12.0	16.0	Q1

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*All dimensions are nominal

Device	Package Type	Package Drawing	Pins	SPQ	Length (mm)	Width (mm)	Height (mm)
SN74LS157DR	SOIC	D	16	2500	333.2	345.9	28.6
SN74LS157NSR	SO	NS	16	2000	346.0	346.0	33.0
SN74LS158DR	SOIC	D	16	2500	333.2	345.9	28.6
SN74LS158NSR	SO	NS	16	2000	346.0	346.0	33.0

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.

W (R-GDFP-F16)

CERAMIC DUAL FLATPACK



- A. All linear dimensions are in inches (millimeters).
- B. 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 GDFP1-F16 and JEDEC MO-092AC



FK (S-CQCC-N**)

LEADLESS CERAMIC CHIP CARRIER

28 TERMINAL SHOWN



- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- C. This package can be hermetically sealed with a metal lid.
- D. Falls within JEDEC MS-004



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.



D (R-PDS0-G16)

PLASTIC SMALL OUTLINE



- A. All linear dimensions are in inches (millimeters).
- B. This drawing is subject to change without notice.
- Body length does not include mold flash, protrusions, or gate burrs. Mold flash, protrusions, or gate burrs shall not exceed 0.006 (0,15) each side.
- Body width does not include interlead flash. Interlead flash shall not exceed 0.017 (0,43) each side.
- E. Reference JEDEC MS-012 variation AC.



D (R-PDSO-G16)

PLASTIC SMALL OUTLINE



- A. All linear dimensions are in millimeters.
- B. This drawing is subject to change without notice.
- C. Publication IPC-7351 is recommended for alternate designs.
- D. Laser cutting apertures with trapezoidal walls and also rounding corners will offer better paste release. Customers should contact their board assembly site for stencil design recommendations. Refer to IPC-7525 for other stencil recommendations.
- E. Customers should contact their board fabrication site for solder mask tolerances between and around signal pads.



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.



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