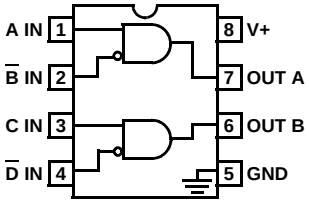
Data Sheet | July 29, 2009 | FN7285.4

Dual Input, High Speed, Dual Channel Power MOSFET Driver

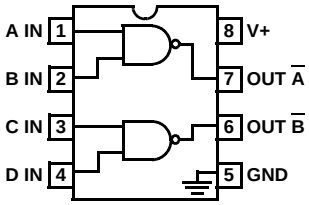
The EL7242/EL7252 dual input, 2-channel drivers achieve the same excellent switching performance of the EL7212 family while providing added flexibility. The 2-input logic and configuration is applicable to numerous power MOSFET drive circuits. As with other Intersil drivers, the EL7242/EL7252 are excellent for driving large capacitive loads with minimal delay and switching times. “Shoot-thru” protection and latching circuits can be implemented by simply “cross-coupling” the 2-channels.

Pinouts

EL7242
(8 LD PDIP, SOIC)
TOP VIEW



EL7252
(8 LD PDIP, SOIC)
TOP VIEW



Manufactured under U.S. Patent Nos. 5,334,883, #5,341,047

Features

- Logic AND/NAND input
- 3V and 5V Input compatible
- Clocking speeds up to 10MHz
- 20ns Switching/delay time
- 2A Peak drive
- Isolated drains
- Low output impedance
- Low quiescent current
- Wide operating voltage — 4.5V to 16V
- Pb-free available (RoHS compliant)

Applications

- Short circuit protected switching
- Undervoltage shut-down circuits
- Switch-mode power supplies
- Motor controls
- Power MOSFET switching
- Switching capacitive loads
- Shoot-thru protection
- Latching drivers

CAUTION: These devices are sensitive to electrostatic discharge; follow proper IC Handling Procedures.
1-888-INTERSIL or 1-888-468-3774 | Intersil (and design) is a registered trademark of Intersil Americas Inc.
Copyright Intersil Americas Inc. 2003, 2005, 2008, 2009. All Rights Reserved
All other trademarks mentioned are the property of their respective owners.

Ordering Information

PART NUMBER	PART MARKING	PACKAGE	PKG. DWG. #
EL7242CNZ (Note 1)	EL7242CN Z	8 Ld PDIP** (Pb-free)	E8.3
EL7242CSZ (Note 1)	7242CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7242CSZ-T7* (Note 1)	7242CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7242CSZ-T13* (Note 1)	7242CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7242CN (Note 2)	EL7242CN	8 Ld PDIP	MDP0031
EL7242CS (Note 2)	7242CS	8 Ld SOIC	MDP0027
EL7242CS-T7* (Note 2)	7242CS	8 Ld SOIC	MDP0027
EL7242CS-T13* (Note 2)	7242CS	8 Ld SOIC	MDP0027
EL7252CSZ (Note 1)	7252CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7252CSZ-T7* (Note 1)	7252CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7252CSZ-T13* (Note 1)	7252CSZ	8 Ld SOIC (Pb-free)	MDP0027
EL7252CN	EL7252CN	8 Ld PDIP	E8.3
EL7252CS	7252CS	8 Ld SOIC	MDP0027
EL7252CS-T7* (Note 2)	7252CS	8 Ld SOIC	MDP0027
EL7252CS-T13* (Note 2)	7252CS	8 Ld SOIC	MDP0027

*Please refer to TB347 for details on reel specifications.

**Pb-free PDIPs can be used for through hole wave solder processing only. They are not intended for use in Reflow solder processing applications.
NOTES:

1. These Intersil Pb-free plastic packaged products employ special Pb-free material sets, molding compounds/die attach materials, and 100% matte tin plate plus anneal (e3 termination finish, which is RoHS compliant and compatible with both SnPb and Pb-free soldering operations). Intersil Pb-free products are MSL classified at Pb-free peak reflow temperatures that meet or exceed the Pb-free requirements of IPC/JEDEC J STD-020.
2. These parts are not recommended for new designs.

Absolute Maximum Ratings (T_A = +25°C)

Supply (V+ to GND) 16.5V
Input Pins . . . . . -0.3V to +0.3V above V+
Combined Peak Output Current 4A
Storage Temperature Range . . . . . .-65°C to +150°C

Operating Conditions

Ambient Operating Temperature . . . . . .-40°C to +85°C
Operating Junction Temperature . . . . . .+125°C

Thermal Information

Power Dissipation
8 Ld SOIC 570mW
8 Ld PDIP* 1050mW
Pb-Free Reflow Profile. . . . . .see link below
http://www.intersil.com/pbfree/Pb-FreeReflow.asp
*Pb-free PDIPs can be used for through hole wave solder processing only. They are not intended for use in Reflow solder processing applications.

CAUTION: Do not operate at or near the maximum ratings listed for extended periods of time. Exposure to such conditions may adversely impact product reliability and result in failures not covered by warranty.

IMPORTANT NOTE: All parameters having Min/Max specifications are guaranteed. Typical values are for information purposes only. Unless otherwise noted, all tests are at the specified temperature and are pulsed tests, therefore: $T_J = T_C = T_A$

DC Electrical Specifications T_A = +25°C, V = 15V, unless otherwise specified.

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
INPUT						
V_{IH}	Logic “1' Input Voltage		2.4			V
I_{IH}	Logic “1' Input Current	@V+		0.1	10	µA
V_{IL}	Logic “0' Input Voltage				0.8	V
I_{IL}	Logic “0' Input Current	@0V		0.1	10	µA
V_{HVS}	Input Hysteresis			0.3		V
OUTPUT						
R_{OH}	Pull-up Resistance	I_{OUT} = -100mA		3	6	Ω
R_{OL}	Pull-down Resistance	I_{OUT} = +100mA		4	6	Ω
I_{PK}	Peak Output Current	Source		2		A
		Sink		2		A
I_{DC}	Continuous Output Current	Source/Sink	100			mA
POWER SUPPLY						
I_S	Power Supply Current	Inputs High		1	2.5	mA
V_S	Operating Voltage		4.5		16	V

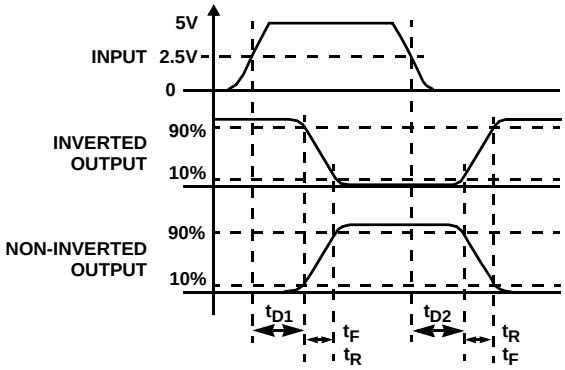
AC Electrical Specifications T_A = +25°C, V = 15V, unless otherwise specified.

PARAMETER	DESCRIPTION	TEST CONDITIONS	MIN	TYP	MAX	UNITS
SWITCHING CHARACTERISTICS						
t_R	Rise Time (Note 3)	C_L = 500pF			10	ns
		C_L = 1000pF			20	ns
t_F	Fall Time (Note 3)	C_L = 500pF			10	ns
		C_L = 1000pF			20	ns
t_{D-ON}	Turn-On Delay Time (Note 3)			20	25	ns
t_{D-OFF}	Turn-Off Delay Time (Note 3)			20	25	ns

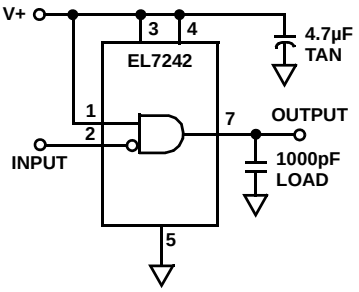
NOTE:

3. Limits established by characterization and are not production tested.

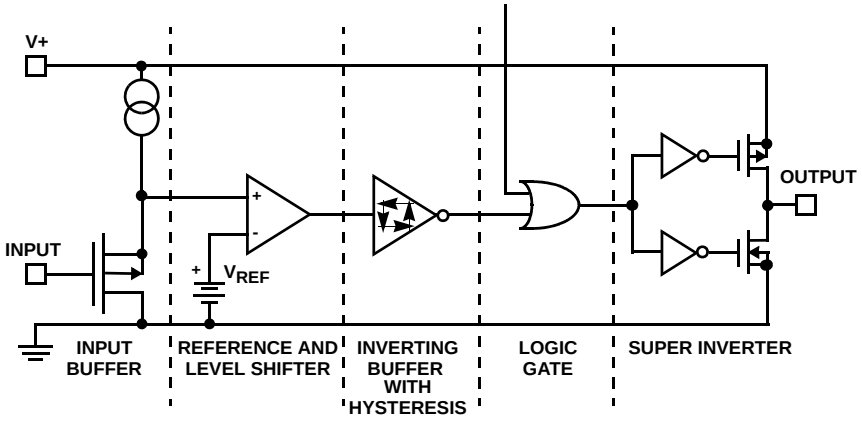
Timing Table



Standard Test Configuration



Simplified Schematic



Typical Performance Curves

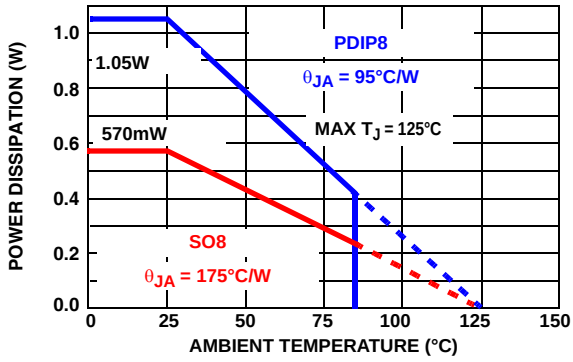


FIGURE 1. MAX POWER/DERATING CURVES

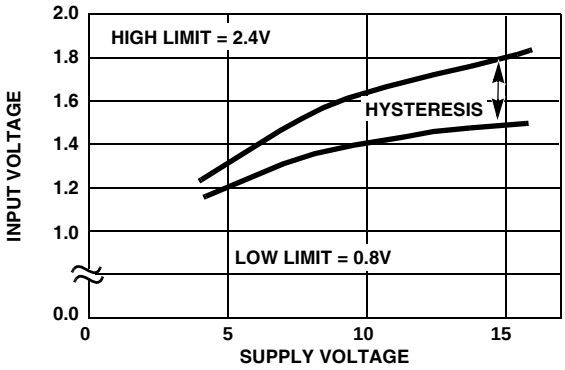


FIGURE 2. SWITCH THRESHOLD vs SUPPLY VOLTAGE

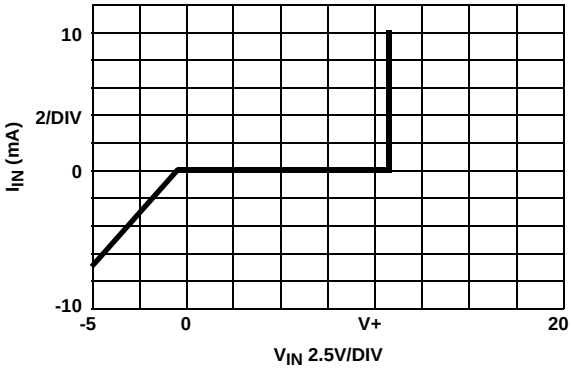


FIGURE 3. INPUT CURRENT vs VOLTAGE

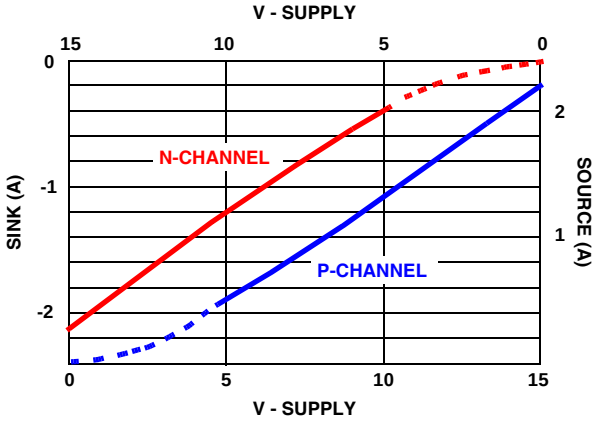


FIGURE 4. PEAK DRIVE vs SUPPLY VOLTAGE

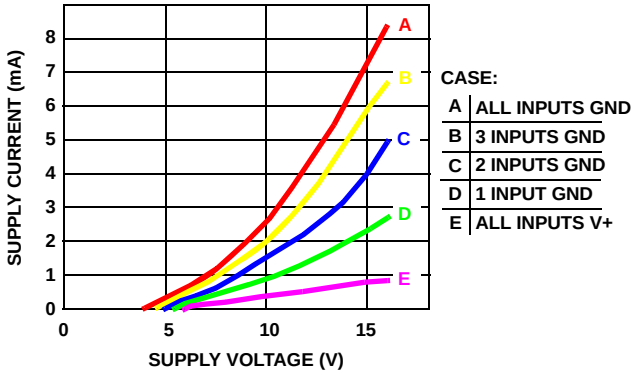


FIGURE 5. QUIESCENT SUPPLY CURRENT

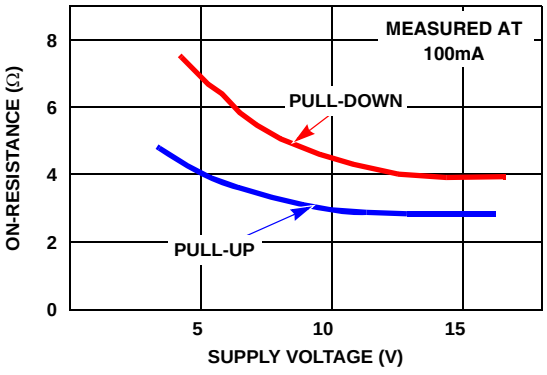


FIGURE 6. ON-RESISTANCE vs SUPPLY VOLTAGE

Typical Performance Curves (Continued)

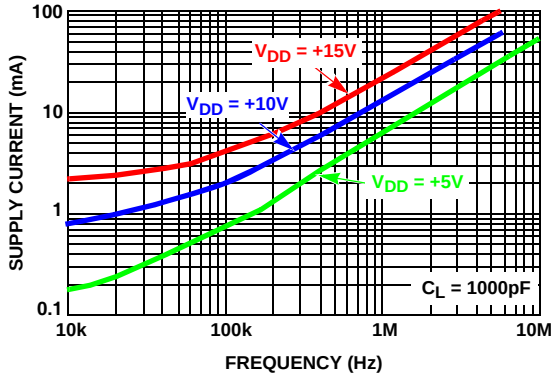


FIGURE 7. AVERAGE SUPPLY CURRENT vs VOLTAGE AND FREQUENCY

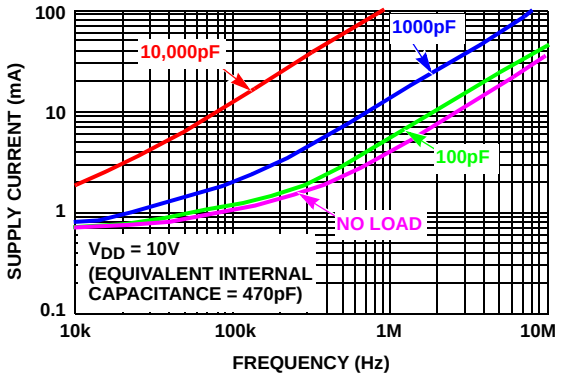


FIGURE 8. AVERAGE SUPPLY CURRENT vs CAPACITIVE LOAD

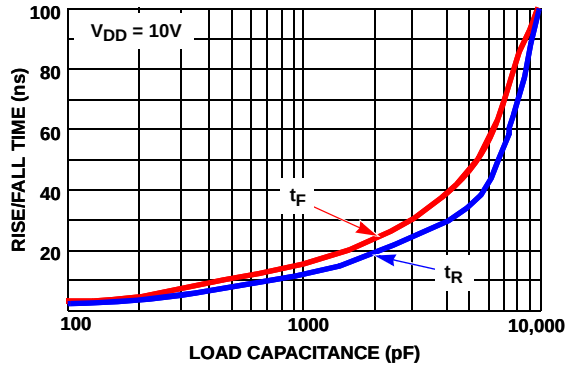


FIGURE 9. RISE/FALL TIME vs LOAD

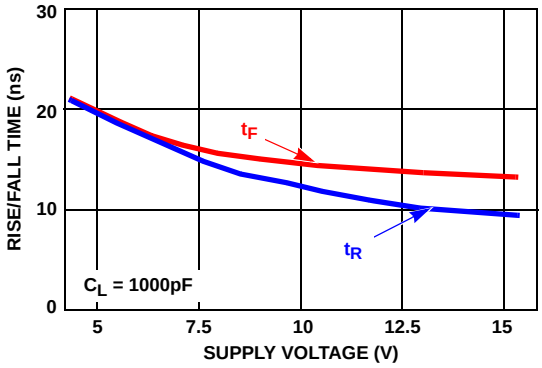


FIGURE 10. RISE/FALL TIME vs SUPPLY VOLTAGE

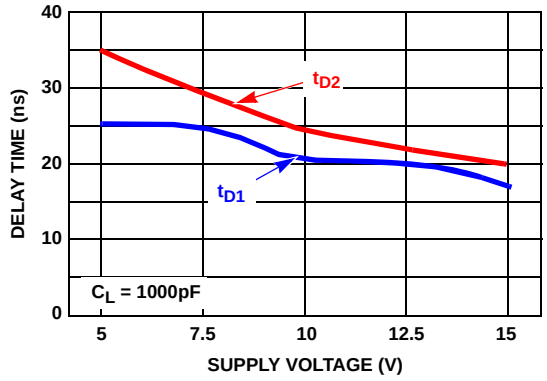


FIGURE 11. PROPAGATION DELAY vs SUPPLY VOLTAGE

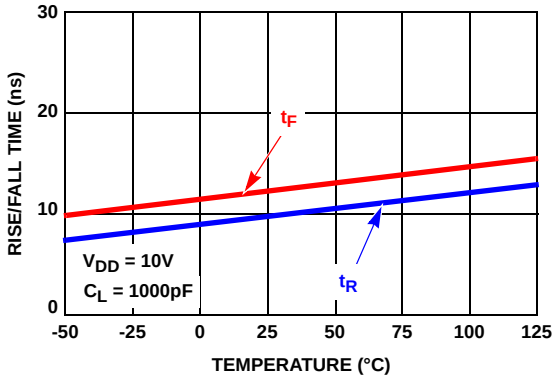


FIGURE 12. RISE/FALL TIME vs TEMPERATURE

Typical Performance Curves (Continued)

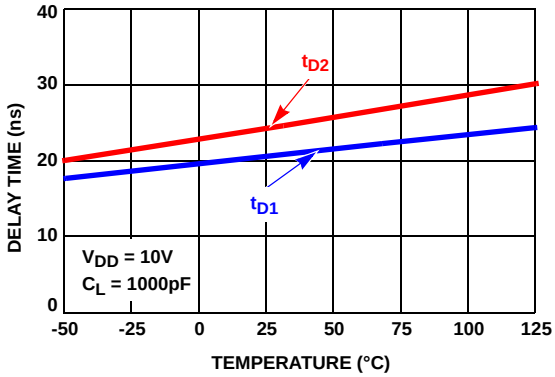
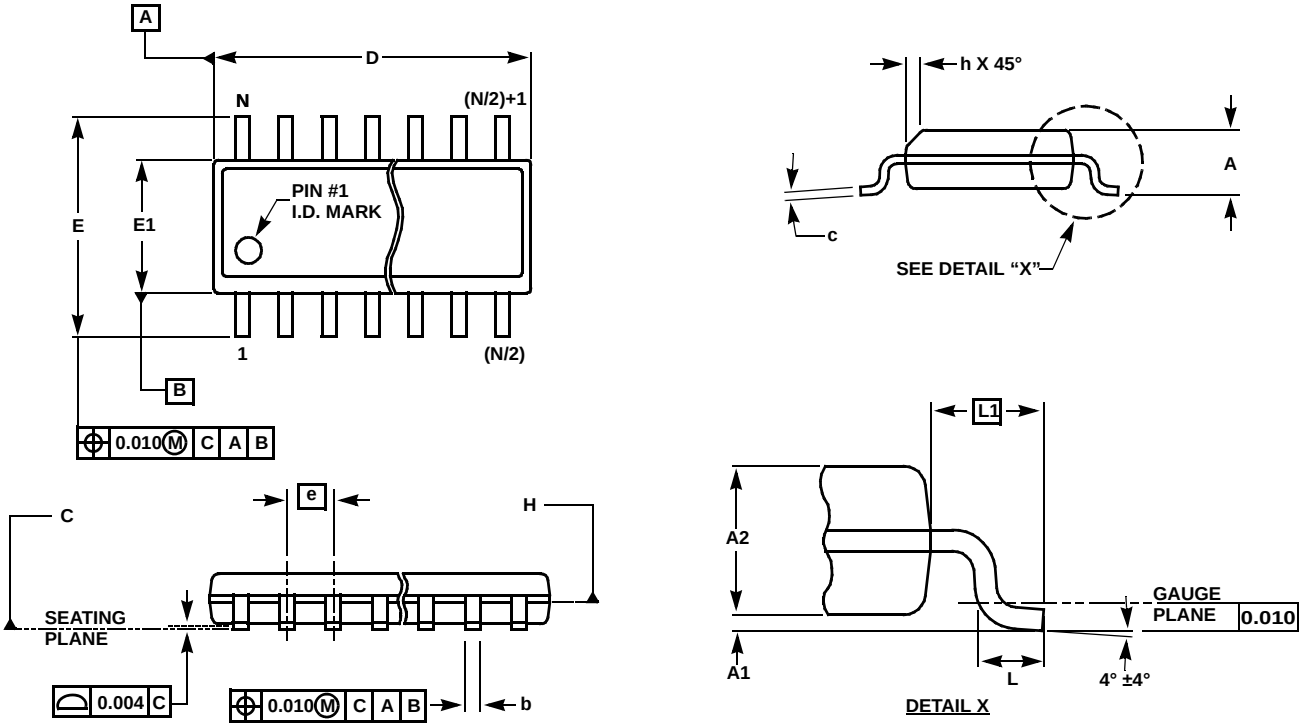


FIGURE 13. DELAY vs TEMPERATURE

Small Outline Package Family (SO)



MDP0027

SMALL OUTLINE PACKAGE FAMILY (SO)

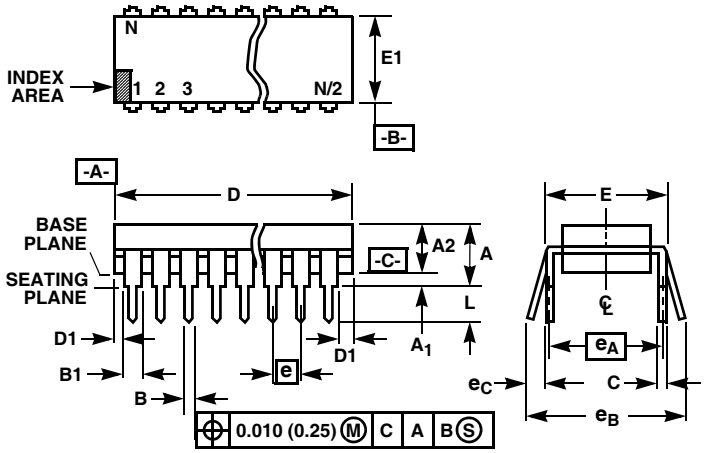
SYMBOL	INCHES							TOLERANCE	NOTES
	SO-8	SO-14	SO16 (0.150")	SO16 (0.300") (SOL-16)	SO20 (SOL-20)	SO24 (SOL-24)	SO28 (SOL-28)		
A	0.068	0.068	0.068	0.104	0.104	0.104	0.104	MAX	-
A1	0.006	0.006	0.006	0.007	0.007	0.007	0.007	±0.003	-
A2	0.057	0.057	0.057	0.092	0.092	0.092	0.092	±0.002	-
b	0.017	0.017	0.017	0.017	0.017	0.017	0.017	±0.003	-
c	0.009	0.009	0.009	0.011	0.011	0.011	0.011	±0.001	-
D	0.193	0.341	0.390	0.406	0.504	0.606	0.704	±0.004	1, 3
E	0.236	0.236	0.236	0.406	0.406	0.406	0.406	±0.008	-
E1	0.154	0.154	0.154	0.295	0.295	0.295	0.295	±0.004	2, 3
e	0.050	0.050	0.050	0.050	0.050	0.050	0.050	Basic	-
L	0.025	0.025	0.025	0.030	0.030	0.030	0.030	±0.009	-
L1	0.041	0.041	0.041	0.056	0.056	0.056	0.056	Basic	-
h	0.013	0.013	0.013	0.020	0.020	0.020	0.020	Reference	-
N	8	14	16	16	20	24	28	Reference	-

Rev. M 2/07

NOTES:

1. Plastic or metal protrusions of 0.006" maximum per side are not included.
2. Plastic interlead protrusions of 0.010" maximum per side are not included.
3. Dimensions "D" and "E1" are measured at Datum Plane "H".
4. Dimensioning and tolerancing per ASME Y14.5M-1994

Dual-In-Line Plastic Packages (PDIP)



NOTES:

1. Controlling Dimensions: INCH. In case of conflict between English and Metric dimensions, the inch dimensions control.
2. Dimensioning and tolerancing per ANSI Y14.5M-1982.
3. Symbols are defined in the "MO Series Symbol List" in Section 2.2 of Publication No. 95.
4. Dimensions A, A1 and L are measured with the package seated in JEDEC seating plane gauge GS-3.
5. D, D1, and E1 dimensions do not include mold flash or protrusions. Mold flash or protrusions shall not exceed 0.010 inch (0.25mm).
6. E and e_A are measured with the leads constrained to be perpendicular to datum -C-.
7. e_B and e_C are measured at the lead tips with the leads unconstrained. e_C must be zero or greater.
8. B1 maximum dimensions do not include dambar protrusions. Dambar protrusions shall not exceed 0.010 inch (0.25mm).
9. N is the maximum number of terminal positions.
10. Corner leads (1, N, N/2 and N/2 + 1) for E8.3, E16.3, E18.3, E28.3, E42.6 will have a B1 dimension of 0.030 - 0.045 inch (0.76 - 1.14mm).

E8.3 (JEDEC MS-001-BA ISSUE D)
8 LEAD DUAL-IN-LINE PLASTIC PACKAGE

SYMBOL	INCHES		MILLIMETERS		NOTES
	MIN	MAX	MIN	MAX	
A	-	0.210	-	5.33	4
A1	0.015	-	0.39	-	4
A2	0.115	0.195	2.93	4.95	-
B	0.014	0.022	0.356	0.558	-
B1	0.045	0.070	1.15	1.77	8, 10
C	0.008	0.014	0.204	0.355	-
D	0.355	0.400	9.01	10.16	5
D1	0.005	-	0.13	-	5
E	0.300	0.325	7.62	8.25	6
E1	0.240	0.280	6.10	7.11	5
e	0.100 BSC		2.54 BSC		-
e_A	0.300 BSC		7.62 BSC		6
e_B	-	0.430	-	10.92	7
L	0.115	0.150	2.93	3.81	4
N	8		8		9

Rev. 0 12/93

All Intersil U.S. products are manufactured, assembled and tested utilizing ISO9000 quality systems.
Intersil Corporation's quality certifications can be viewed at www.intersil.com/design/quality

Intersil products are sold by description only. Intersil Corporation reserves the right to make changes in circuit design, software and/or specifications at any time without notice. Accordingly, the reader is cautioned to verify that data sheets are current before placing orders. Information furnished by Intersil is believed to be accurate and reliable. However, no responsibility is assumed by Intersil or its subsidiaries for its use; nor for any infringements of patents or other rights of third parties which may result from its use. No license is granted by implication or otherwise under any patent or patent rights of Intersil or its subsidiaries.

For information regarding Intersil Corporation and its products, see www.intersil.com

TradeElectronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

О компании

ООО "ТрейдЭлектроникс" - это оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов. Реализуемая нашей компанией продукция насчитывает более полумиллиона наименований.

Благодаря этому наша компания предлагает к поставке практически не ограниченный ассортимент компонентов как оптовыми, мелкооптовыми партиями, так и в розницу.

Наличие собственной эффективной системы логистики обеспечивает надежную поставку продукции по конкурентным ценам в точно указанные сроки.

Срок поставки со стоков в **Европе и Америке – от 3 до 14 дней.**

Срок поставки из **Азии – от 10 дней.**

Благодаря развитой сети поставщиков, помогаем в поиске и приобретении экзотичных или снятых с производства компонентов.

Предоставляем спец цены на элементы для создания инженерных сэмплов.

Упорный труд, качественный результат дают нам право быть уверенными в себе и надежными для наших клиентов.

Наша компания это:

- Гарантия качества поставляемой продукции
- Широкий ассортимент
- Минимальные сроки поставок
- Техническая поддержка
- Подбор комплектации
- Индивидуальный подход
- Гибкое ценообразование

Наша организация особенно сильна в поставках модулей, микросхем, пассивных компонентов, ксайленсах (XC), EPF, EPM и силовой электроники.

Большой выбор предлагаемой продукции, различные виды оплаты и доставки, позволят Вам сэкономить время и получить максимум выгоды от сотрудничества с нами!

Trade Electronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

Перечень производителей, продукцию которых мы поставляем на российский рынок



Trade Electronics.ru

гарантия бесперебойности производства и качества выпускаемой продукции

С удовольствием будем прорабатывать для Вас поставки всех необходимых компонентов по текущим запросам для скорейшего выявления групп элементов, по которым сотрудничество именно с нашей компанией будет для Вас максимально выгодным!

С уважением,

Менеджер отдела продаж ООО

«Трейд Электроникс»

Шишлаков Евгений

8 (495)668-30-28 доб 169

manager28@tradeelectronics.ru

http://www.tradeelectronics.ru/