

# H11A817C Datasheet

[www.digi-electronics.com](http://www.digi-electronics.com)



<https://www.DiGi-Electronics.com>

DiGi Electronics Part Number	H11A817C-DG
Manufacturer	<a href="#">onsemi</a>
Manufacturer Product Number	H11A817C
Description	OPTOISO 5.3KV TRANSISTOR 4DIP
Detailed Description	Optoisolator Transistor Output 5300Vrms 1 Channel 4-DIP

This model H11A817C is available at DiGi Electronics.

DiGi Electronics offers a global database of semiconductor and electronic component datasheets.

We welcome your inquiries regarding pricing, lead time, or other product-related questions.

 [Request a Quote](#)

 [Datasheet Search](#)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.

## Purchase and inquiry

Manufacturer Product Number:

H11A817C

Series:

-

Number of Channels:

1

Current Transfer Ratio (Min):

200% @ 5mA

Turn On / Turn Off Time (Typ):

-

Input Type:

DC

Voltage - Output (Max):

70V

Voltage - Forward (Vf) (Typ):

1.2V

Vce Saturation (Max):

200mV

Mounting Type:

Through Hole

Supplier Device Package:

4-DIP

Manufacturer:

onsemi

Product Status:

Obsolete

Voltage - Isolation:

5300Vrms

Current Transfer Ratio (Max):

400% @ 5mA

Rise / Fall Time (Typ):

2.4µs, 2.4µs

Output Type:

Transistor

Current - Output / Channel:

50mA

Current - DC Forward (If) (Max):

50 mA

Operating Temperature:

-55°C ~ 100°C

Package / Case:

4-DIP (0.300", 7.62mm)

Base Product Number:

H11A

## Environmental & Export classification

Moisture Sensitivity Level (MSL):

1 (Unlimited)

ECCN:

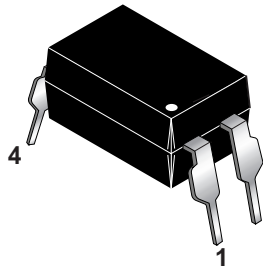
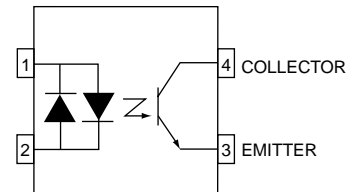
EAR99

REACH Status:

REACH Unaffected

HTSUS:

8541.49.8000

**H11AA814 SERIES**
**H11A617 SERIES**
**H11A817 SERIES**
**PACKAGE**

**H11AA814 SCHEMATIC**

**DESCRIPTION**

The H11AA814 Series consists of two gallium arsenide infrared emitting diodes, connected in inverse parallel, driving a single silicon phototransistor in a 4-pin dual in-line package.

The H11A617 and H11A817 Series consists of a gallium arsenide infrared emitting diode driving a silicon phototransistor in a 4-pin dual in-line package.

**FEATURES**

- Compact 4-pin package
- Current transfer ratio in selected groups:
 

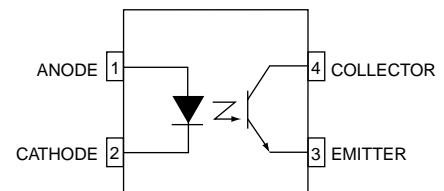
H11AA814:	20-300%	H11A817:	50-600%
H11AA814A:	50-150%	H11A817A:	80-160%
H11A617A:	40%-80%	H11A817B:	130-260%
H11A617B:	63%-125%	H11A817C:	200-400%
H11A617C:	100%-200%	H11A817D:	300-600%
H11A617D:	160%-320%		
- Minimum  $BV_{CEO}$  of 70V guaranteed

**APPLICATIONS**
**H11AA814 Series**

- AC line monitor
- Unknown polarity DC sensor
- Telephone line interface

**H11A617 and H11A817 Series**

- Power supply regulators
- Digital logic inputs
- Microprocessor inputs

**H11A617 & H11A817 SCHEMATIC**




# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

## H11AA814 SERIES

## H11A617 SERIES

## H11A817 SERIES

Parameter	Symbol	Device	Value	Units
<b>TOTAL DEVICE</b>				
Storage Temperature	$T_{STG}$	All	-55 to +150	°C
Operating Temperature	$T_{OPR}$	All	-55 to +100	°C
Lead Solder Temperature	$T_{SOL}$	All	260 for 10 sec	°C
Total Device Power Dissipation (-55°C to 50 °C)	$P_D$	All	200	mW
<b>EMITTER</b>				
Continuous Forward Current	$I_F$	All	50	mA
Reverse Voltage	$V_R$	H11A617A/B/C/D H11A817/A/B/C/D	6 5	V
Forward Current - Peak (1 $\mu$ s pulse, 300 pps)	$I_F(pk)$	All	1.0	A
LED Power Dissipation (25°C ambient) Derate above 25°C	$P_D$	All	100 1.33	mW mW/°C
<b>DETECTOR</b>				
Collector-Emitter Voltage	$V_{CEO}$	All	70	V
Emitter-Collector Voltage	$V_{ECO}$	H11AA814/A H11A617A/B/C/D H11A817/A/B/C/D	6 7 6	V
Continuous Collector Current	$I_C$	All	50	mA
Detector Power Dissipation (25°C ambient) Derate above 25°C	$P_D$	All	150 2.0	mW mW/°C

### ELECTRICAL CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ Unless otherwise specified.)

#### INDIVIDUAL COMPONENT CHARACTERISTICS

Parameter	Test Conditions	Symbol	Device	Min	Typ*	Max	Unit
<b>EMITTER</b>							
Input Forward Voltage	$(I_F = 60 \text{ mA})$	$V_F$	H11A617A/B/C/D		1.35	1.65	V
	$(I_F = 20 \text{ mA})$		H11A817/A/B/C/D		1.2	1.5	
	$(I_F = \pm 20 \text{ mA})$		H11AA814/A		1.2	1.5	
Reverse Leakage Current	$(V_R = 6.0 \text{ V})$	$I_R$	H11A617A/B/C/D		.001	10	$\mu\text{A}$
	$(V_R = 5.0 \text{ V})$		H11A817/A/B/C/D				
<b>DETECTOR</b>							
Collector-Emitter Breakdown Voltage	$(I_C = 1.0 \text{ mA}, I_F = 0)$	$BV_{CEO}$	ALL	70	100		V
Emitter-Collector Breakdown Voltage	$(I_E = 100 \mu\text{A}, I_F = 0)$	$BV_{ECO}$	H11AA814/A	6	10		V
			H11A617A/B/C/D	7			
			H11A817/A/B/C/D	6			
Collector-Emitter Dark Current	$(V_{CE} = 10\text{V}, I_F = 0)$	$I_{CEO}$	H11AA814/A, H11A817/A/B/C/D, H11A617C/D H11A617A/B		1	100 50	nA
Collector-Emitter Capacitance	$(V_{CE} = 0 \text{ V}, f = 1 \text{ MHz})$	$C_{CE}$	ALL		8		pF

\*Typical values at  $T_A = 25^\circ\text{C}$ .



# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

## H11AA814 SERIES

## H11A617 SERIES

## H11A817 SERIES

### TRANSFER CHARACTERISTICS ( $T_A = 25^\circ\text{C}$ Unless otherwise specified.)

DC Characteristic	Test Conditions	Symbol	Device	Min	Typ*	Max	Unit
Current Transfer Ratio	$(I_F = \pm 1 \text{ mA}, V_{CE} = 5 \text{ V})$ (note 1)	CTR	H11AA814	20		300	%
			H11AA814A	50		150	%
	$(I_F = 10 \text{ mA}, V_{CE} = 5 \text{ V})$ (note 1)		H11A617A	40		80	%
			H11A617B	63		125	%
			H11A617C	100		200	%
			H11A617D	160		320	%
	$(I_F = 5 \text{ mA}, V_{CE} = 5 \text{ V})$ (note 1)		H11A817	50		600	%
			H11A817A	80		160	%
			H11A817B	130		260	%
			H11A817C	200		400	%
			H11A817D	300		600	%
			$(I_F = 1 \text{ mA}, V_{CE} = 5 \text{ V})$ (note 1)	H11A617A	13		
	H11A617B			22			%
	H11A617C			34			%
H11A617D	56				%		
Collector-Emitter Saturation Voltage	$(I_C = 1 \text{ mA}, I_F = \pm 20 \text{ mA})$ $(I_C = 2.5 \text{ mA}, I_F = 10 \text{ mA})$ $(I_C = 1 \text{ mA}, I_F = 20 \text{ mA})$	$V_{CE(SAT)}$	H11AA814/A			0.2	V
			H11A617A/B/C/D			0.4	
			H11A817A/B/C/D			0.2	
AC Characteristic							
Rise Time	$(I_C = 2 \text{ mA}, V_{CE} = 2 \text{ V}, R_L = 100\Omega)$ (note 2)	$t_r$	ALL		2.4	18	$\mu\text{s}$
Fall Time	$(I_C = 2 \text{ mA}, V_{CE} = 2 \text{ V}, R_L = 100\Omega)$ (note 2)	$t_f$	ALL		2.4	18	$\mu\text{s}$

### ISOLATION CHARACTERISTICS

Characteristic	Test Conditions	Symbol	Min	Typ*	Max	Units
Input-Output Isolation Voltage (note 3)	$f = 60\text{Hz}, t = 1 \text{ min}$	$V_{ISO}$	5300			Vac(rms)
Isolation Resistance	$(V_{I-O} = 500 \text{ VDC})$	$R_{ISO}$	$10^{11}$			$\Omega$
Isolation Capacitance	$(V_{I-O} = 0, f = 1 \text{ MHz})$	$C_{ISO}$		0.5		pf

\*Typical values at  $T_A = 25^\circ\text{C}$ .

#### NOTES

1. Current Transfer Ratio (CTR) =  $I_C/I_F \times 100\%$ .
2. For test circuit setup and waveforms, refer to Figure 8.
3. For this test, Pins 1 and 2 are common, and Pins 3 and 4 are common.

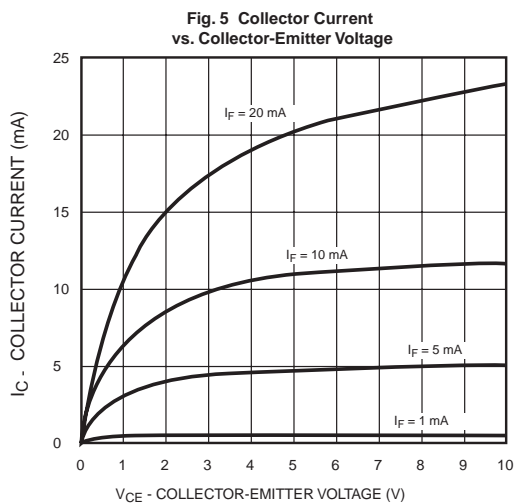
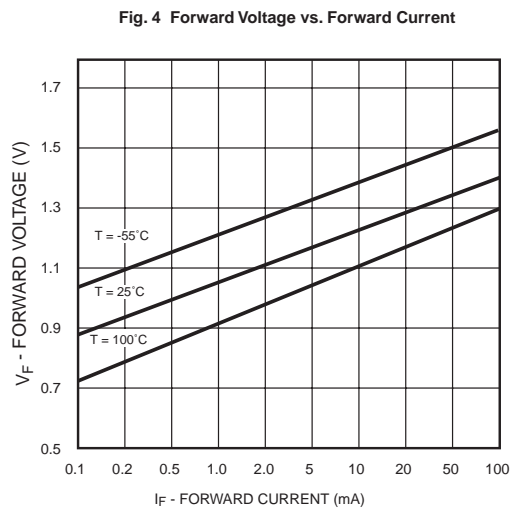
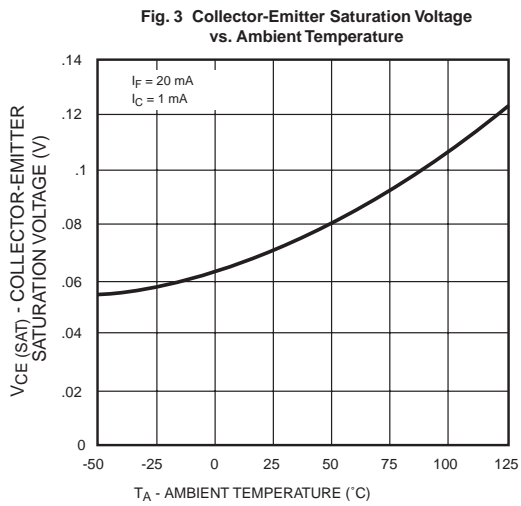
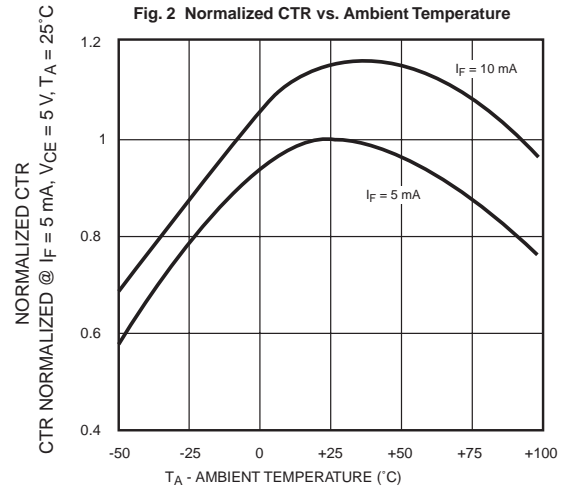
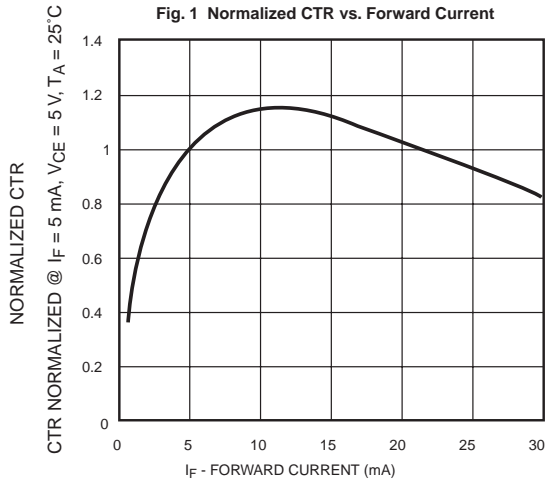


# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

## H11AA814 SERIES

## H11A617 SERIES

## H11A817 SERIES



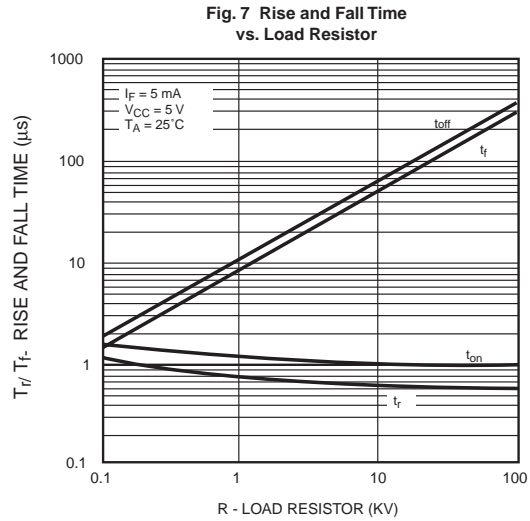
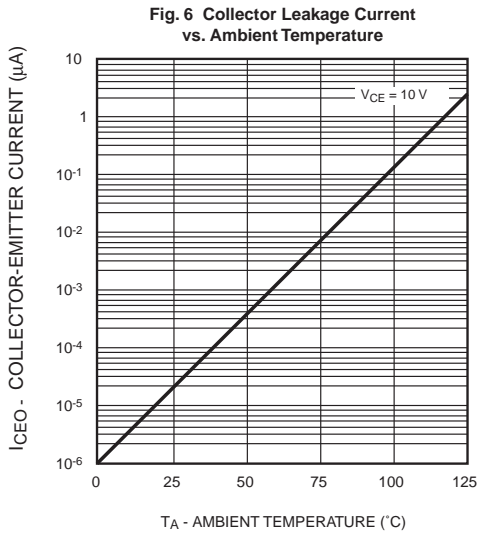


# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

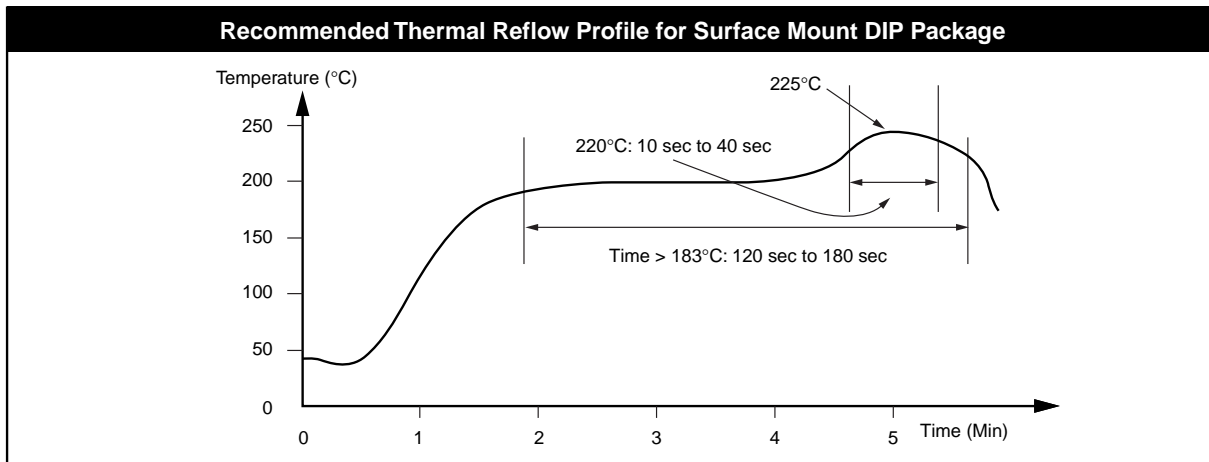
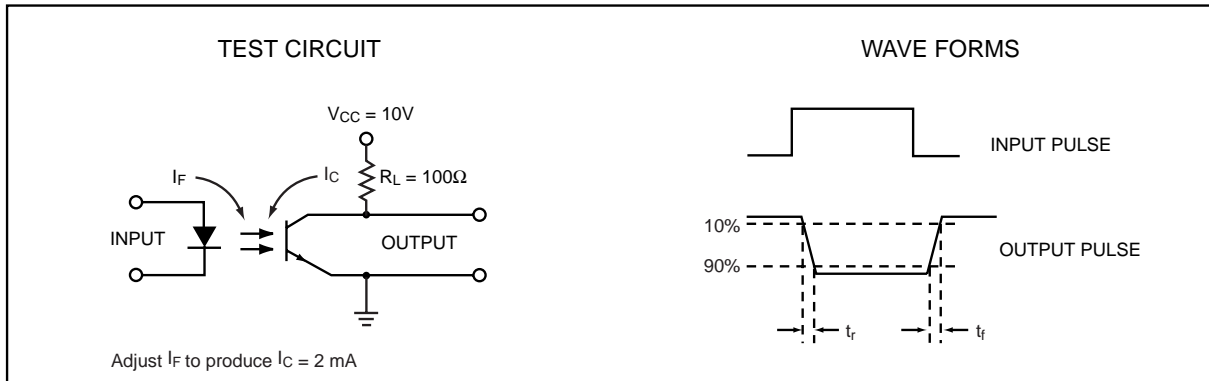
**H11AA814 SERIES**

**H11A617 SERIES**

**H11A817 SERIES**



**Figure 8. Switching Time Test Circuit and Waveforms**





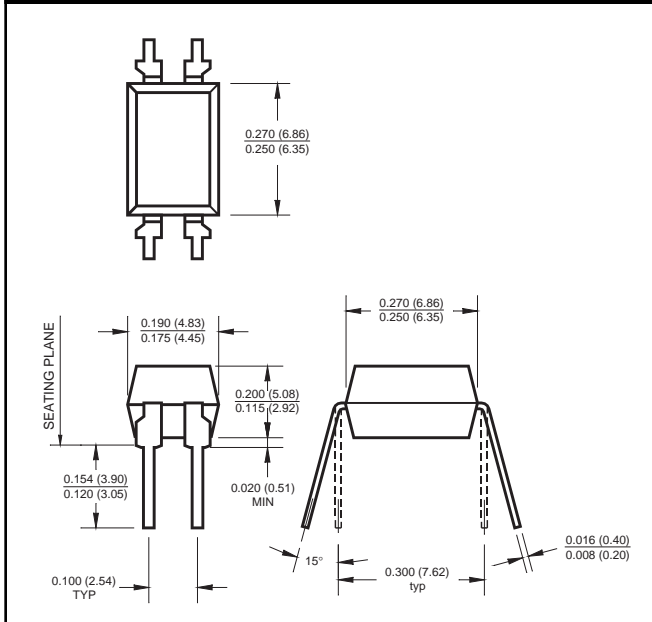
# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

## H11AA814 SERIES

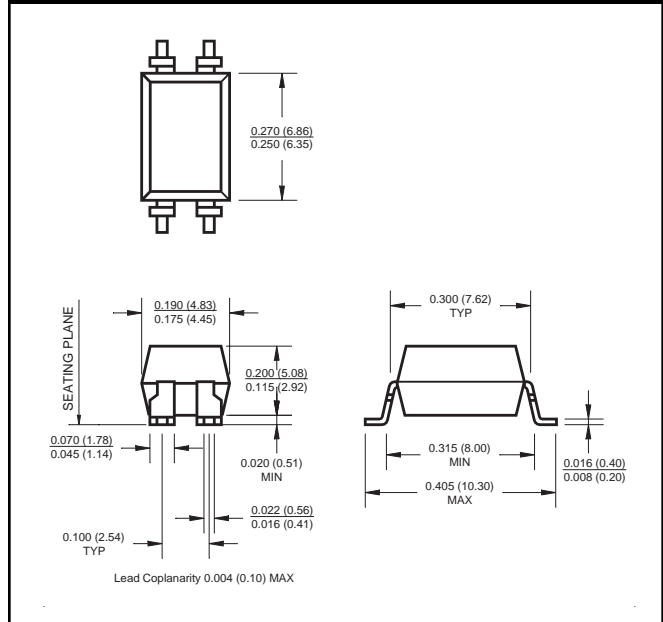
## H11A617 SERIES

## H11A817 SERIES

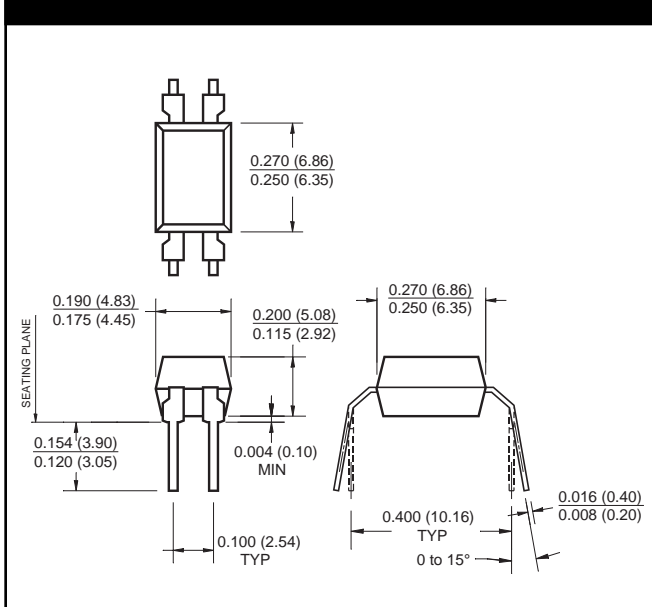
### Package Dimensions (Through Hole)



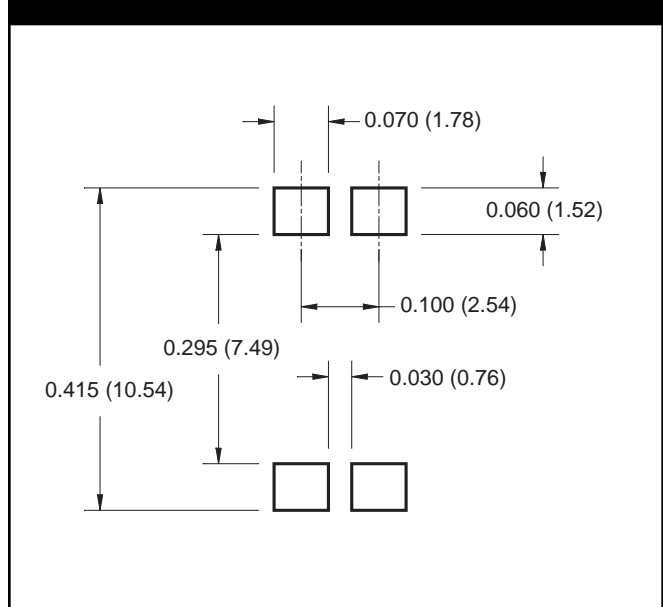
### Package Dimensions (Surface Mount)



### Package Dimensions (0.4" Lead Spacing)



### Footprint Dimensions (Surface Mount)



**NOTE**

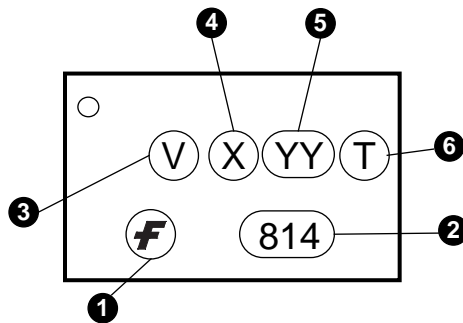
All dimensions are in inches (millimeters)



# 4-PIN PHOTOTRANSISTOR OPTOCOUPLEDERS

**H11AA814 SERIES**
**H11A617 SERIES**
**H11A817 SERIES**
**ORDERING INFORMATION**

Option	Order Entry Identifier	Description
S	.S	Surface Mount Lead Bend
SD	.SD	Surface Mount; Tape and reel
W	.W	0.4" Lead Spacing
300	.300	VDE 0884
300W	.300W	VDE 0884, 0.4" Lead Spacing
3S	.3S	VDE 0884, Surface Mount
3SD	.3SD	VDE 0884, Surface Mount, Tape & Reel

**MARKING INFORMATION**


Definitions	
1	Fairchild logo
2	Device number
3	VDE mark (Note: Only appears on parts ordered with VDE option – See order entry table)
4	One digit year code
5	Two digit work week ranging from '01' to '53'
6	Assembly package code





## 4-PIN PHOTOTRANSISTOR OPTOCOUPERS

---

**H11AA814 SERIES****H11A617 SERIES****H11A817 SERIES**

---

**DISCLAIMER**

FAIRCHILD SEMICONDUCTOR RESERVES THE RIGHT TO MAKE CHANGES WITHOUT FURTHER NOTICE TO ANY PRODUCTS HEREIN TO IMPROVE RELIABILITY, FUNCTION OR DESIGN. FAIRCHILD DOES NOT ASSUME ANY LIABILITY ARISING OUT OF THE APPLICATION OR USE OF ANY PRODUCT OR CIRCUIT DESCRIBED HEREIN; NEITHER DOES IT CONVEY ANY LICENSE UNDER ITS PATENT RIGHTS, NOR THE RIGHTS OF OTHERS.

**LIFE SUPPORT POLICY**

FAIRCHILD'S PRODUCTS ARE NOT AUTHORIZED FOR USE AS CRITICAL COMPONENTS IN LIFE SUPPORT DEVICES OR SYSTEMS WITHOUT THE EXPRESS WRITTEN APPROVAL OF THE PRESIDENT OF FAIRCHILD SEMICONDUCTOR CORPORATION. As used herein:

1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and (c) whose failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury of the user.
2. A critical component in any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

## OUR CERTIFICATE

DiGi provide top-quality products and perfect service for customer worldwide through standardization, technological innovation and continuous improvement. DiGi through third-party certification, we strictly control the quality of products and services. Welcome your RFQ to

Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)



Tel: +00 852-30501935

RFQ Email: [Info@DiGi-Electronics.com](mailto:Info@DiGi-Electronics.com)

DiGi is a global authorized distributor of electronic components.