



	LDA110	Units
Break Down Voltage	20	V
Current Transfer Ratio	1000	%
Saturation Voltage	.8	V
Input Control Current	2	mA

### Description

LDA110 is an optocoupler with a single or darlington transistor output. A bi-directional or uni-directional input is available depending on which model you choose. Current transfer ratios range from 33% to 1000%

### Features

- AC and DC Input Versions Available
- Small 6 Pin DIP Package
- 100mA Continuous Load Rating
- 3750V<sub>RMS</sub> Input/Output Isolation
- Machine Insertable, Wave Solderable
- Surface Mount and Tape & Reel Versions Available

### Applications

- Telecom Switching
- Tip/Ring Circuits
- Modem Switching (Laptop, Notebook, Pocket Size)
- Loop Detect
- Ring Detect
- Current Sensing

### Approvals

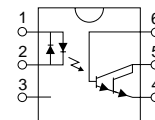
- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- BSI Certified:
  - BS EN 60950:1992 (BS7002:1992)  
Certificate #:7344
  - BS EN 41003:1993  
Certificate #:7344

### Ordering Information

Part #	Description
LDA110	6 Pin DIP (50/Tube)
LDA110S	6 Pin Surface Mount (50/Tube)
LDA110STR	6 Pin Surface Mount (1000/Reel)

### Pin Configuration

LDA110 Pinout



### Absolute Maximum Ratings (@ 25° C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150 <sup>1</sup>	mW
Input Control Current	-	-	100	mA
Peak (10ms)	-	-	1	A
Reverse Input Voltage	-	-	5	V
Phototransistor	-	-	150 <sup>2</sup>	mW
Power Dissipation				
Total Package Dissipation	-	-	800 <sup>3</sup>	mW
Isolation Voltage				
Input to Output	3750	-	-	V <sub>RMS</sub>
Operational Temperature	-40	-	+85	°C
Storage Temperature	-40	-	+125	°C
Soldering Temperature				
DIP Package	-	-	+260	°C
Surface Mount Package (10 Seconds Max.)	-	-	+220	°C

<sup>1</sup> Derate Linearly 1.33 mw/°C

<sup>2</sup> Derate Linearly 2.0 mw/°C

<sup>3</sup> Derate Linearly 6.67 mw/°C

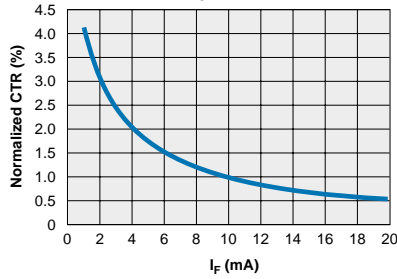
*Absolute Maximum Ratings are stress ratings. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and effect its reliability.*

### Electrical Characteristics

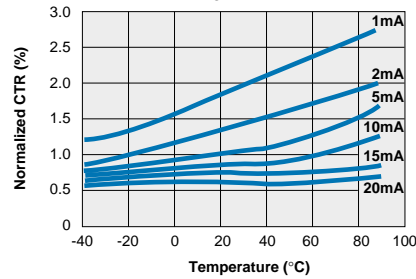
PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
<b>Output Characteristics @ 25°C</b>						
Phototransistor Blocking Voltage	$I_C=10\mu A$	$BV_{CEO}$	20	50	-	V
Phototransistor Output Current	$V_{CE}=5V, I_F=0mA$	$I_{CEO}$	-	50	500	nA
Saturation Voltage	$I_C=2mA, I_F=16mA$	$V_{SAT}$	-	-	-	V
	$I_C=.15mA, I_F=.05mA$		-	0.5	0.5	V
Current Transfer Ratio	$I_F=6mA, V_{CE}=0.5V$	CTR	300	1000	-	%
Output Capacitance	50V, f=1 MHz	$C_{OUT}$	-	3	-	pF
Capacitance						
Input to Output	-	-	-	-	-	-pF
<b>Input Characteristics @ 25°C</b>						
Input Control Current	$I_C=2mA, V_{CE}=0.5V$	$I_F$	2	1	100	mA
Input Voltage Drop	$I_F=5mA$	$V_F$	0.9	1.2	1.4	V
Input Reverse Voltage (LDA101, LDA111)	-	$V_R$	-	-	5	V
Input Reverse Current (LDA101, LDA111)	$V_R=5V$	$I_R$	-	-	10	nA
<b>Common Characteristics @ 25°C</b>						
Input to Output Isolation	-	$V_{I/O}$	3750	-	-	V <sub>RMS</sub>

Performance Data

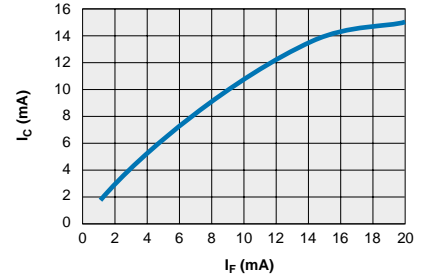
LDA110/LDA111  
Typical Normalized CTR vs. Forward Current  
( $V_{CE} = 0.5V$ )



LDA110/LDA111  
Typical Normalized CTR vs. Temperature  
( $V_{CE} = 0.8V$ )

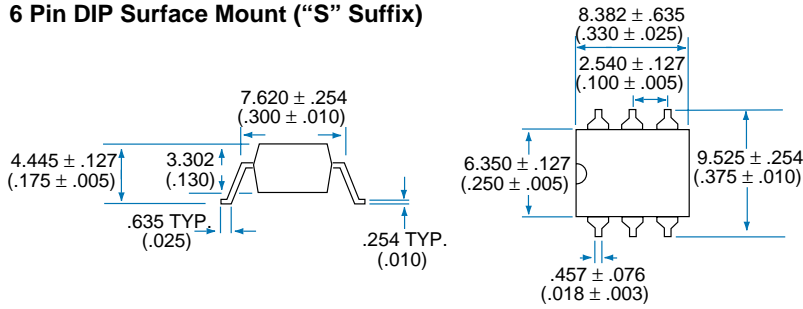


LDA110/LDA111  
Typical Collector Current vs. Forward Current  
( $V_{CE} = 0.8V$ )

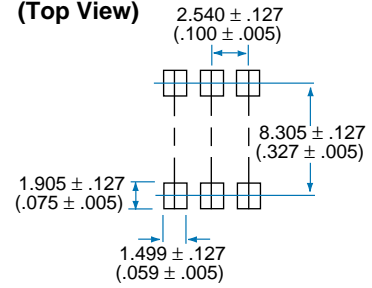


**Mechanical Dimensions**

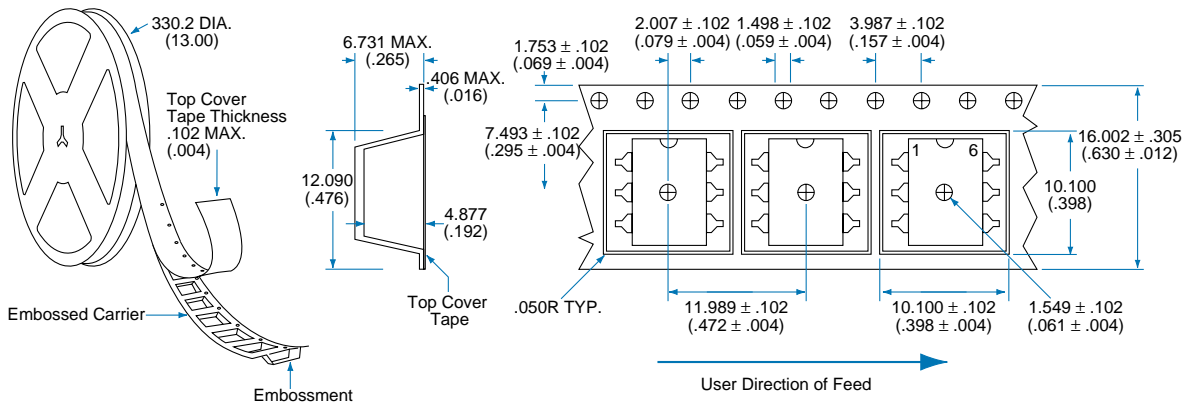
**6 Pin DIP Surface Mount ("S" Suffix)**



**PC Board Pattern (Top View)**



**Tape and Reel Packaging for 6 Pin Surface Mount Package**



Dimensions  
 mm  
 (inches)



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