Absolute Maximum Ratings (@ 25° C)

Parameter	Min	Typ	Max	Units
Input Power Dissipation	-	-	150[1]	mW
Input Control Current	-	-	100	mA
Peak (10ms)	-	-	1	A
Total Package Dissipation	-	-	500[2]	mW
Isolation Voltage Input to Output SOIC Package	3750	-	-	V_{RMS}
Operational Temperature	-40		+85	°C
Storage Temperature	-40	-	+125	°C
Soldering Temperature (10 Seconds Max)	-	-	+260	°C
Flatpack Package	-	-	+220	°C

[1] Derate Linearly 1.33 mW/°C
[2] Derate Linearly 6.67 mW/°C

Absolute Maximum Ratings are stress ratings. Stresses in excess of these ratings can cause permanent damage to the device. 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.

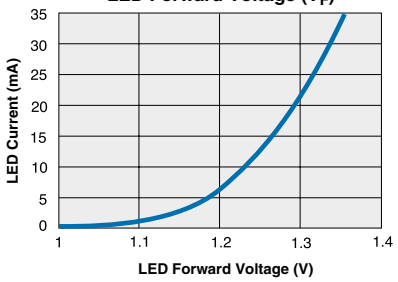
Electrical Characteristics

Parameter	Conditions	Symbol	Min	Typ	Max	Units
Input Characteristics @ 25°C						
LED Voltage Drop	I_F=2-10mA	V_F	0.9	1.2	1.4	V
Reverse LED Current	V_R=5V	I_R	-	-	10	µA
Reverse LED Voltage	-	V_R	-	-	5	V
Forward LED Current	-	I_F	-	-	100	mA
Coupler/Detector Characteristics @ 25°C						
Dark Current	I_F=0mA, V_{CC}=15V	I_D	-	1	25	nA
K1, Servo Gain (I_1/I_F)	I_F=2-10mA, V_{CC}=15V	K1	0.008	-	0.030	-
K2, Forward Gain (I_2/I_F)	I_F=2-10mA, V_{CC}=15V	K2	0.006	-	0.030	-
K3, Transfer Gain (K_2/K_1)[1]	I_F=2-10mA, V_{CC}=15V	K3	0.733	1.0	1.072	-
ΔK3, Transfer Gain Linearity[1] (non-servoed)	I_F=2-10mA	ΔK3	-	-	1.0	%
K3 Temperature Coefficient	I_F=2-10mA, V_{det}=-5V	ΔK3/ΔT	-	0.005	-	%/°C
Common Mode Rejection Ratio	V=20V_{P-P}, R_L=2KΩ, F=100Hz	CMRR	-	130	-	dB
Total Harmonic Distortion	F_O=350Hz, 0dBm	THD	-96	-87	-80	dB
Frequency Response	Photoconductive Operation	BW (-3dB)	-	200	-	kHz
	Photovoltaic Operation	BW (-3dB)	-	40	-	kHz
Input/Output Capacitance	-	$C_{I/O}$	-	3	-	pF
Input/Output Isolation	-	$V_{I/O}$	3750	-	-	V_{RMS}

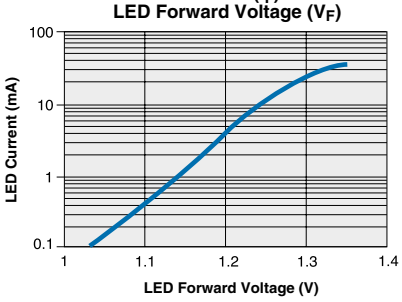
[1] LOC111 and LOC112 Bins D,E,F,G.

PERFORMANCE DATA*

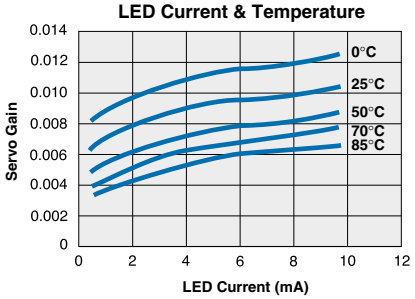
LOC111
LED Current (I_F) vs.
LED Forward Voltage (V_F)



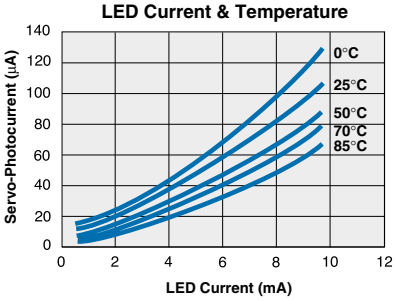
LOC111
LED Current (I_F) vs.
LED Forward Voltage (V_F)



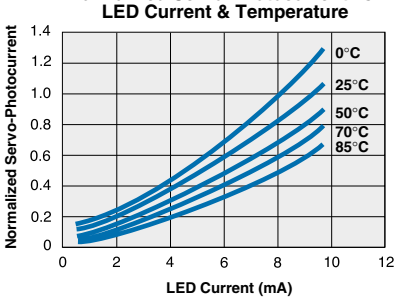
LOC111
Servo Gain vs.
LED Current & Temperature



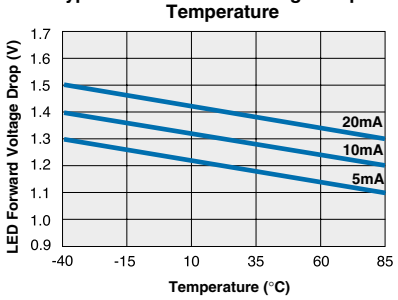
LOC111
Servo-Photocurrent vs.
LED Current & Temperature



LOC111
Normalized Servo-Photocurrent vs.
LED Current & Temperature



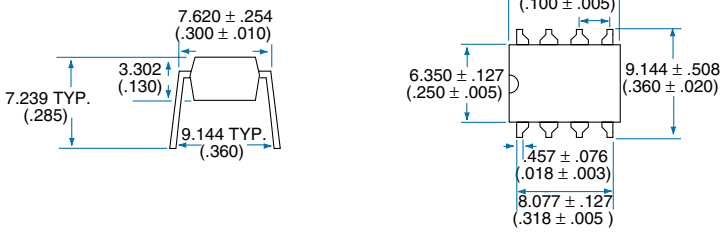
LOC111
Typical LED Forward Voltage Drop vs.
Temperature



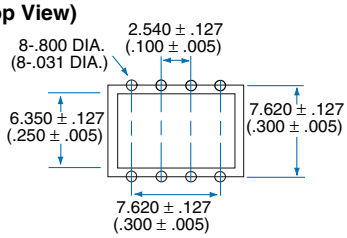
* The Performance data shown in the graphs above is typical of device performance. For guaranteed parameters not indicated in the written specifications, please contact our application department.

MECHANICAL DIMENSIONS

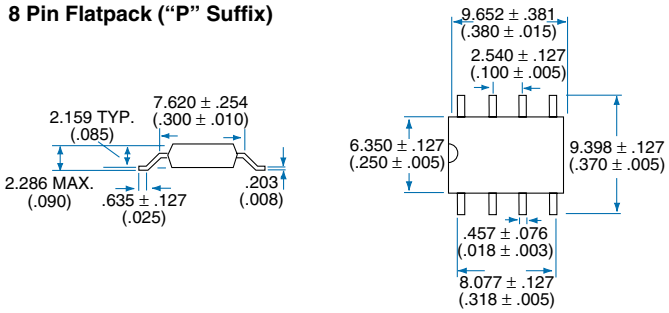
8 Pin DIP Through Hole (Standard)



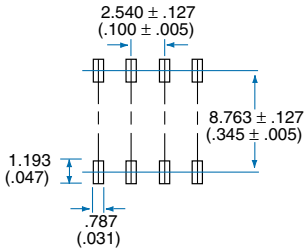
PC Board Pattern (Top View)



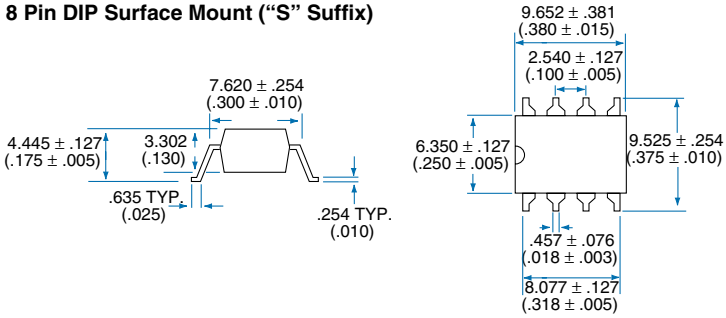
8 Pin Flatpack ("P" Suffix)



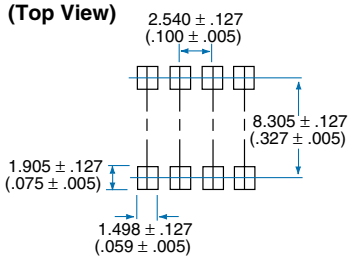
PC Board Pattern (Top View)



8 Pin DIP Surface Mount ("S" Suffix)



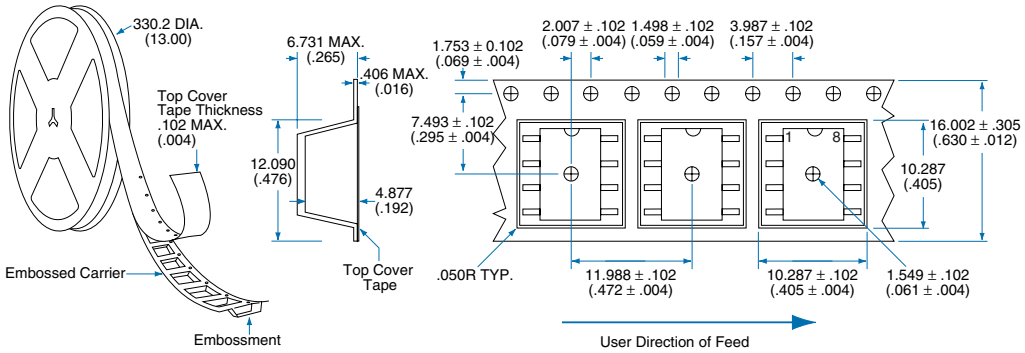
PC Board Pattern (Top View)



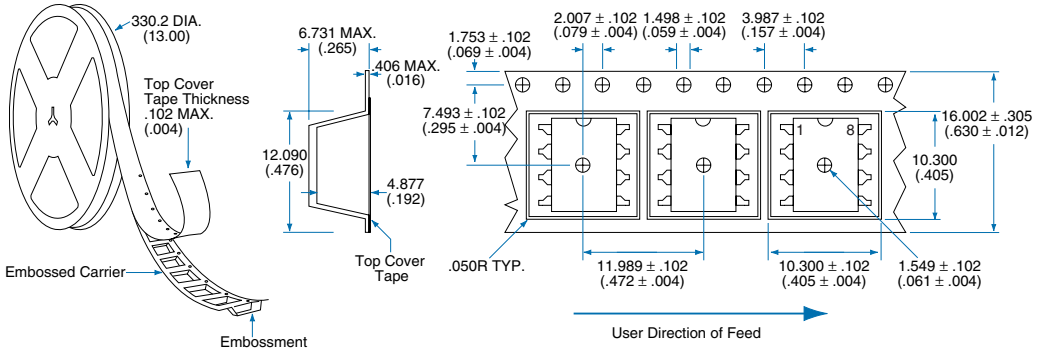
Dimensions
mm
(inches)

MECHANICAL DIMENSIONS

Tape and Reel Packaging for 8 Pin Flatpack Package



Tape and Reel Packaging for 8 Pin Surface Mount Package



Dimensions
mm
(inches)

CLARE

For additional information please visit our website at: www.clare.com

Specification: DS-LOC111-R6.0

4/8/02