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LOC211 Linear Optocouplers



Features

- 16 Pin SOIC Package (PCMCIA Compatible)
- Couples Analog and Digital Signals
- Wide Bandwidth (>200kHz)
- High Gain Stability
- Low Input/Output Capacitance
- Low Power Consumption
- 0.01% Servo Linearity
- THD 87dB Typical
- Machine Insertable, Wave Solderable
- Surface Mount and Tape Reel Versions Available
- VDE Compatible

Applications

- Modem Transformer Replacement With No Insertion Loss
- Digital Telephone Isolation
- Power Supply Feedback Voltage/Current
- Medical Sensor Isolation
- Audio Signal Interfacing
- Isolation of Process Control Transducers

Description

LOC211 is a dual linear optocoupler for use in telecom, medical and power supply isolation circuits. They are available in a 16 Pin SOIC package.

Approvals

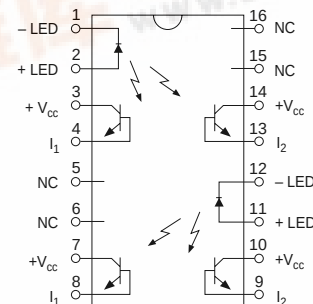
- UL Recognized: File Number E76270
- CSA Certified: File Number LR 43639-10
- BSI Certified:
 - BS EN 60950:1992 (BS7002:1992)
Certificate #:7344
 - BS EN 41003:1993
Certificate #:7344

Ordering Information

Part #	Description
LOC211P	16 Pin Flatpack (50/Tube)
LOC211PTR	16 Pin Flatpack (1000/Reel)

Pin Configuration

LOC210/LOC211 Pinout



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	-	-	800 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)	-	-	+220	°C
Flatpack Package	-	-	+260	°C

¹ Derate Linearly 1.33 mW/°C² Derate Linearly 6.67 mW/°C

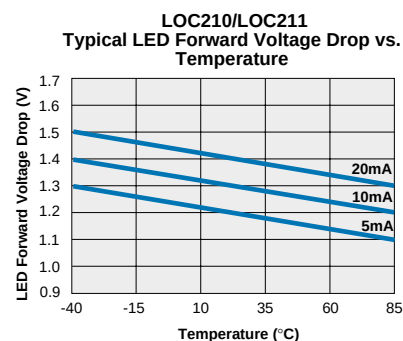
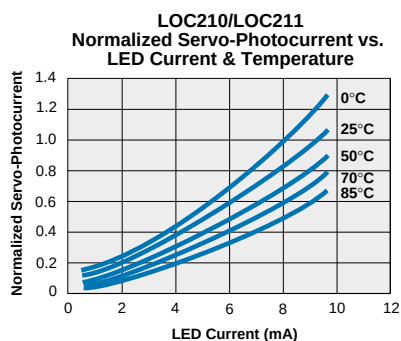
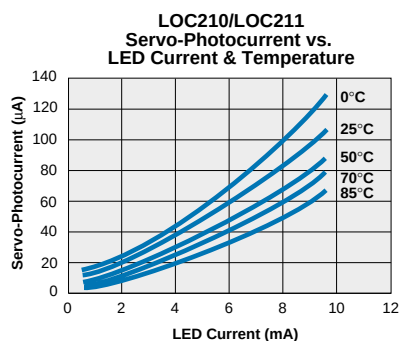
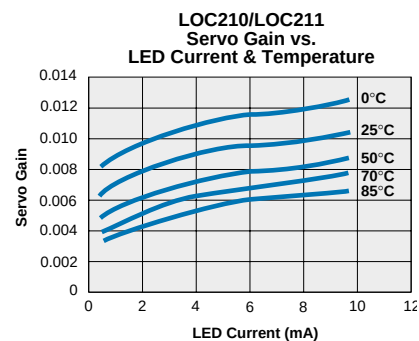
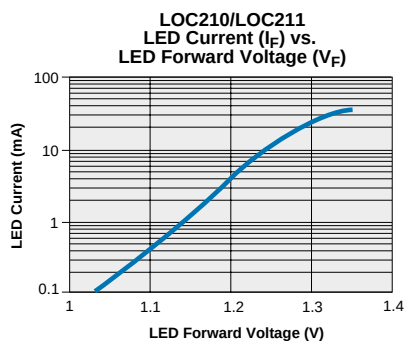
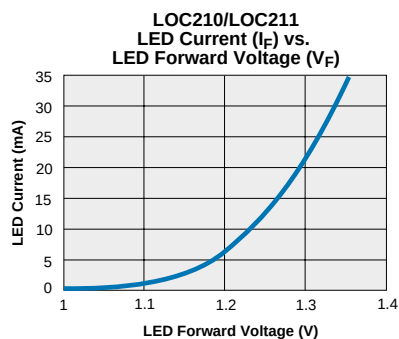
Absolute Maximum Ratings are stress ratings. Functional operation of the device at these or any other conditions beyond those indicated in the operational sections of this data sheet is not implied. Exposure of the device to the absolute maximum ratings for an extended period may degrade the device and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

Electrical Characteristics

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNITS
Input Characteristics @ 25°C1						
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°C1						
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)	I _F =2-10mA, V _{CC} =15V	K3	0.733	-	1.072	-
ΔK3, Transfer Gain Linearity (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	-	-	VRMS

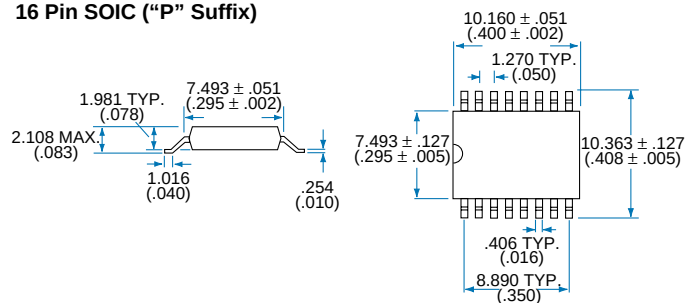
¹ All parameters above are for each optocoupler.

Performance Data

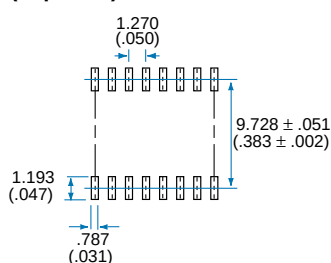


Mechanical Data

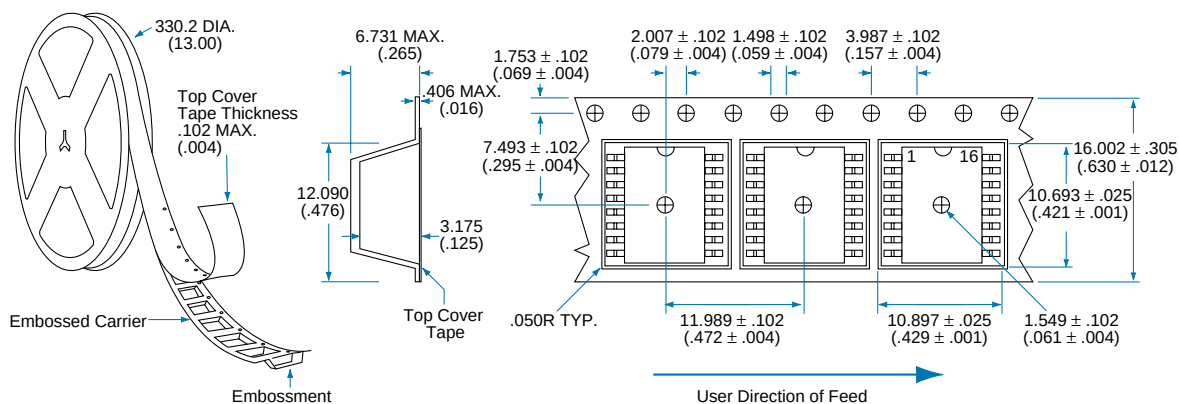
16 Pin SOIC ("P" Suffix)



PC Board Pattern (Top View)



Tape and Reel Packaging for 16 Pin SOIC Package





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