

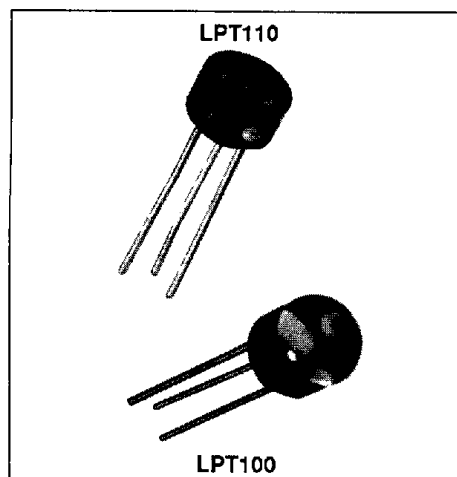
SIEMENS

LPT100/100A/100B

LPT110/110A/110B

PHOTOTRANSISTOR

T-41-61

**FEATURES**

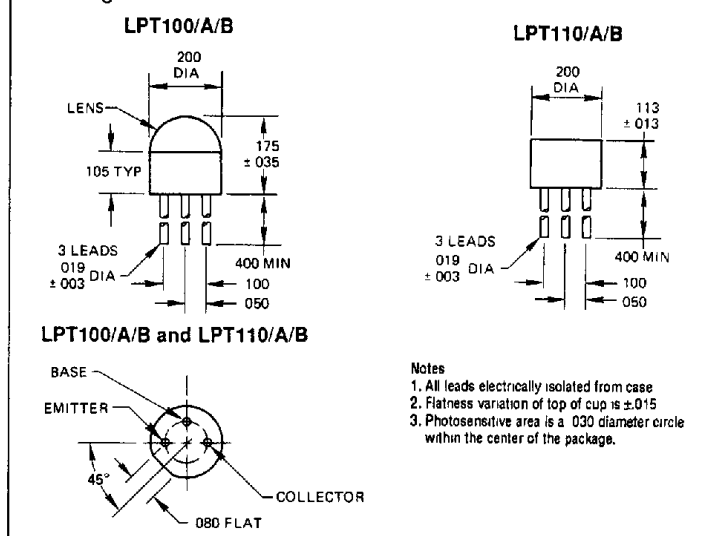
- **Collector Dark Current** 0.25 nA Typ.
- **Responsivity**
0.6 $\mu\text{A}/\text{mW}/\text{cm}^2$ Min (Tungsten)
1.8 $\mu\text{A}/\text{mW}/\text{cm}^2$ Min (GaAs)
- **Photo Current**
0.2 mA Min (Tungsten)
0.6 mA Min (GaAs)
- **Rise and Fall Time** 2.8 μs Typ
- **Applications**
Position Detector, Intrusion Alarm
Sensor, Optical Tachometer

Maximum Ratings

Maximum Temperature/Humidity	
Storage Temperature	-55°C to +100°C
Operating Junction Temperature	-55°C to +85°C
Relative Humidity at Temperature	98% at +65°C
Maximum Power Dissipation ^(1,2)	
Total Dissipation at +25°C	
Case Temperature	200 mW
Total Dissipation at +25°C	
Ambient Temperature	100 mW
Maximum Voltages ⁽³⁾	
BV _{ceo} Collector to Base Voltage	50 V
LV _{ceo} Collector to Emitter Sustaining Voltage	30 V
Maximum Current	
I _c Collector Current	100 mA

Notes

- These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
- These ratings give a maximum junction temperature of +85°C and junction to case thermal resistance of +300°C/W (derating factor of 3.33 mW/°C) and a junction to ambient thermal resistance of +600°C/W (derating factor of 1.67 mW/°C).
- Measured with radiation flux intensity of less than 0.1 $\mu\text{W}/\text{cm}^2$ over the spectrum from 100 to 1500 nm.
- Measured at noted irradiance as emitted from a tungsten filament lamp at a color temperature of 2854° K.
- No electrical connection to emitter lead.
- Measured with a tungsten lamp (2854° K) with a 950 nm filter.
- No electrical connection to base lead.
- Rise time is defined as the time required for I_{ce} to rise from 10% to 90% peak value. Fall time is defined as the time required for I_{ce} to decrease from 90% to 10% of peak value. Test conditions are I_{ce}=4.0 mA, V_{ce}=5.0 V, R_L=100 Ohms, GaAs Source.

Package Dimensions in Inches**Characteristics (T_{amb}=25°C)**

	Min.	Typ.	Max.	
Collector Dark Current ⁽³⁾ (V _{ce} =10 V)		0.25	25	nA
Collector Dark Current ⁽³⁾ (65°C) (V _{ce} =10 V)		0.025	0.5	μA
Collector Dark Current ⁽³⁾ (V _{ce} =5.0 V)		2.0	100	nA
Responsivity (Tungsten) ^(4,5) (V _{ce} =10 V)	0.6	1.6		$\mu\text{A}/\text{mW}/\text{cm}^2$
LPT100/A/B	0.6	1.0		
LPT110/A/B				
Responsivity (GaAs) ^(6,7) (V _{ce} =10 V)				$\mu\text{A}/\text{mW}/\text{cm}^2$
LPT100/A/B	1.8	4.8		
LPT110/A/B	1.8	3.0		
Photocurrent (Tungsten) ^(4,7) (V _{ce} =5.0 V, H=5.0 mW/cm ²)				mA
LPT100	0.2	1.4		
LPT110	0.2	2.1		
LPT100A	1.0	2.0	3.0	
LPT110A	0.6	1.2	1.8	
LPT100B	1.3	2.0	2.6	
LPT110B	0.8	1.2	1.6	
Photocurrent (GaAs) ^(6,7) (V _{ce} =5.0 V, H=5.0 mW/cm ²)				mA
LPT100/A/B	0.6	4.2		
LPT110/A/B	0.6	2.7		
Light Current Rise Time ⁽⁸⁾		2.8		μs
Collector to Emitter ⁽⁴⁾ Saturation Voltage (I _c =500 μA , H=20 mW/cm ²)		0.16	0.4	
Collector to Base Breakdown ⁽³⁾ Voltage (I _c =100 μA)	50	120		V
Collector to Emitter ⁽³⁾ Sustaining Voltage (I _c =1.0 mA)	30	50		V
Emitter to Collector ⁽³⁾ Breakdown (I _{ec} =100 μA)		7.0		V

Phototransistors/
Photodarlington

TYPICAL OPTOELECTRONIC CHARACTERISTICS

T-41-61

