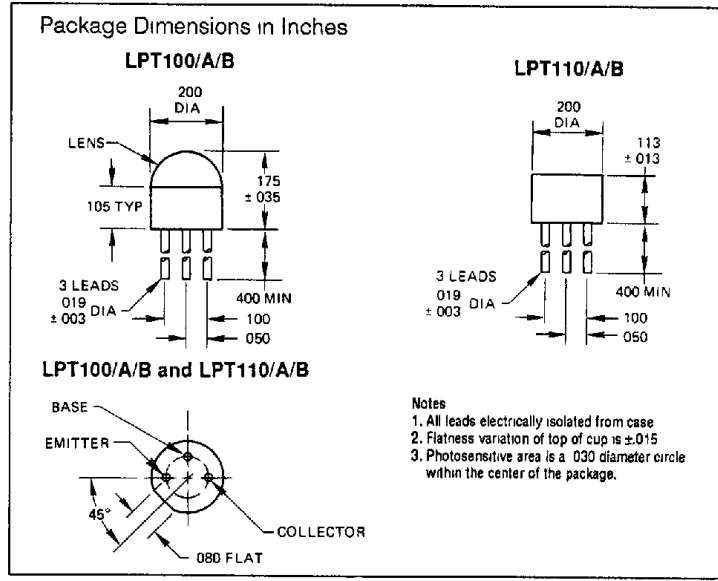
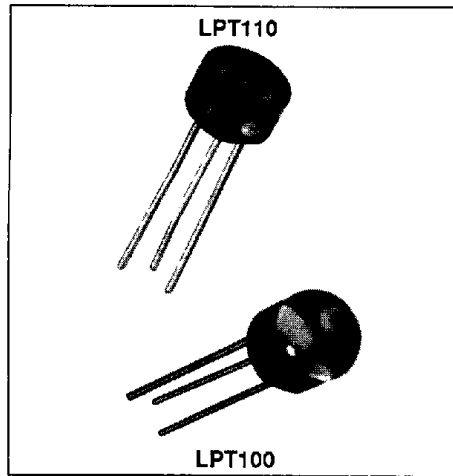


SIEMENS

LPT100/100A/100B
LPT110/110A/110B
PHOTOTRANSISTOR

T-41-61



FEATURES

- Collector Dark Current 0.25 nA Typ.
- Responsivity
 0.6 $\mu\text{A/mW/cm}^2$ Min (Tungsten)
 1.8 $\mu\text{A/mW/cm}^2$ 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_{CB0} Collector to Base Voltage	.50 V
LV_{CE0} 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 $\mu\text{W/cm}^2$ 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 $I_C=4.0$ mA, $V_{CE}=5.0$ V, $R_L=100$ Ohms, GaAs Source.

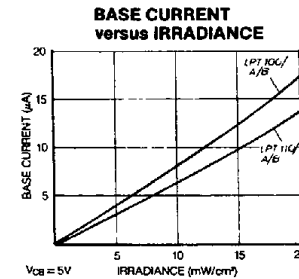
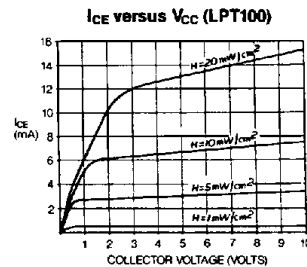
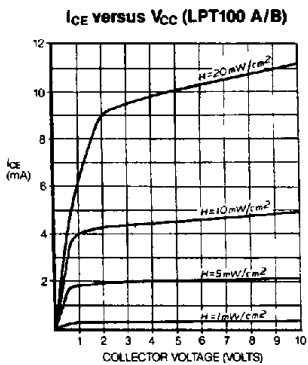
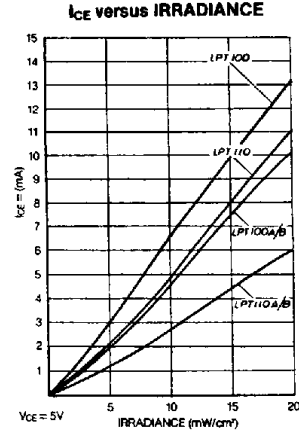
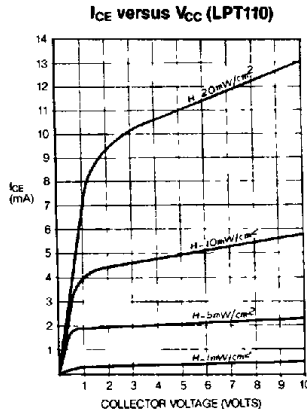
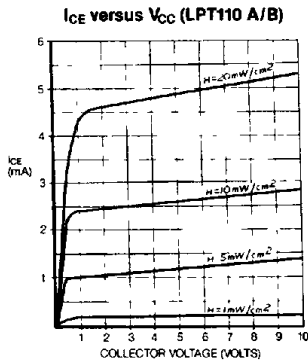
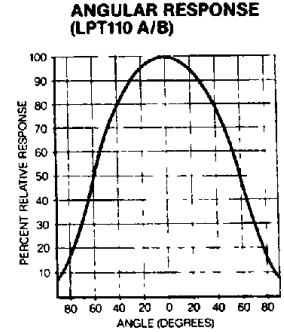
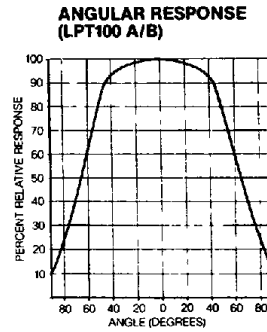
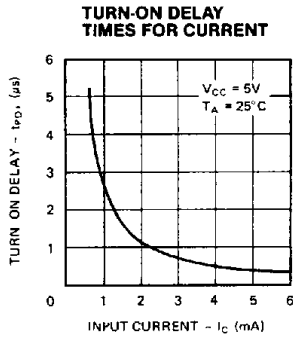
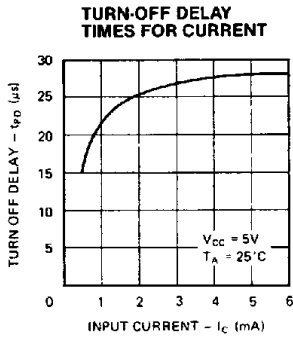
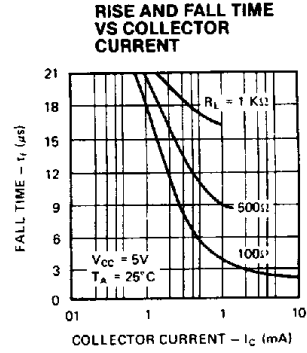
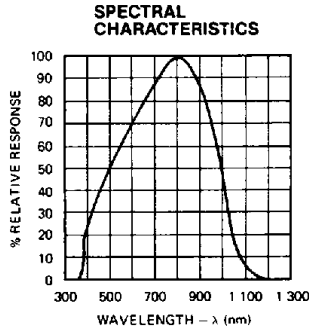
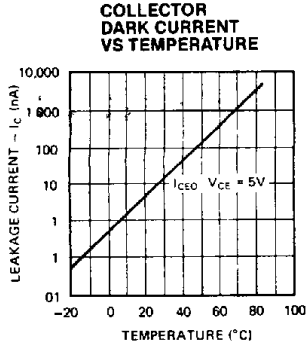
Characteristics ($T_{amb}=25^\circ\text{C}$)

	Min.	Typ.	Max.	
Collector Dark Current ⁽³⁾ ($V_{CB}=10$ V)		0.25	25	nA
Collector Dark Current ⁽³⁾ (65°C) ($V_{CB}=10$ V)		0.025	0.5	μA
Collector Dark Current ⁽³⁾ ($V_{CE}=5.0$ V)		2.0	100	nA
Responsivity (Tungsten) ^(4,5) ($V_{CB}=10$ V)	0.6	1.6		$\mu\text{A/mW/cm}^2$
LPT100/A/B	0.6	1.0		
LPT110/A/B				
Responsivity (GaAs) ^(6,7) ($V_{CB}=10$ V)	1.8	4.8		$\mu\text{A/mW/cm}^2$
LPT100/A/B	1.8	3.0		
LPT110/A/B				
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⁾	t_r, t_f	2.8		μs
Collector to Emitter ⁽⁴⁾ Saturation Voltage ($I_C=500$ μA , $H=20$ mW/cm ²)	$V_{CE(SAT)}$	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)	LV_{CE0}	30	50	V
Emitter to Collector ⁽³⁾ Breakdown ($I_{EC}=100$ μA)	BV_{ECO}	7.0		V

Phototransistors/
Photodarlington

T-41-66

TYPICAL OPTOELECTRONIC CHARACTERISTICS



LPT100/A/B, LPT110/A/B