Electrical Specifications

Absolute Maximum Ratings (T_A = 25° C unless otherwise noted)			
Parameter	**Symbol**	**Maximum**	**Units**
DC supply voltage	V_{DD}	6	V
Voltage on any pin with respect to GND		-0.5, +6	V
Voltage on any pin with respect to V_{DD}		-6, +0.5	V
Current into or out of any pin other than GND, cathode		±20	mA
Current into or out of GND, cathode		±150	mA
Illuminance / background light	I_X	25	kLux
ESD immunity (human body model)	ESD	±4 HBM; contact discharge	kV
Operating temperature range	T_{OPR}	-40°C to +85°C	
Storage temperature range	T_{STG}	-40°C to +105°C	

Note: Permanent damage to the device may occur if operated outside the Absolute Maximum specifications. Proper function and reliability of the device at these or any other conditions outside the Recommended Operating Conditions may also be adversely affected

Electrical Specifications (cont.)

Electrical Characteristics (T_A = 25° C unless otherwise noted)

SUPPLY CHARACTERISTICS

#	PARAMETER	SYM	CONDITIONS	MIN	NOM	MAX	UNIT	NOTES
1	Supply voltage	V_{DD}		2.7		5.5	V	
2	Supply current—active	I_{DDA}	[OP,DS] = 'b01; [CA] = 'b1			4.2	mA	1
3	Supply current (including LED drive)	I_{DD}	[OP,DS] = 'b01; [CA] = 'b1			16	mA	
4	Supply voltage ripple immunity	ΔV_{DDpp}	Sinusoidal; f ≤ 10 kHz	.02 * V_{DD}			V	16
5	Wake-up time	t_{WU}				32	ms	2

LED I-SINK PIN CHARACTERISTICS

#	PARAMETER	SYM	CONDITIONS	MIN	NOM	MAX	UNIT	NOTES
6	LED pulsed drive current	$I_{OL:K:max}$	Maximum [LED] value; VDD—V(K) ≤ 2V		85		mA	
7	LED pulsed drive current	$I_{OL:K:min}$	Minimum [LED] value; VDD—V(K) ≤ 2V		3		mA	
8	LED pulse period	t_{PER}			2		µs	
9	LED pulse duty cycle	DC_{PW}			12.5%			
10	LED pulse settling time	$t_{S:K}$				100	ns	3

OUT PIN CHARACTERISTICS

#	PARAMETER	SYM	CONDITIONS	MIN	NOM	MAX	UNIT	NOTES
11	Output low voltage (OUT pin)	$V_{OL:OUT}$	I_{OL} = 4mA; [OP,DS] = 'b01; [CA] = 'b1; photodiode DARK			0.4	V	
12	Output high voltage (OUT pin)	$V_{OH:OUT}$	I_{OH} = -4mA; [OP,DS] = 'b11; [CA] = 'b1; photodiode DARK	V_{DD}—1			V	
13	Leakage current (OUT pin)	$I_{L:OUT}$	[OP,DS] = 'b10; [CA] = 'b1; V(OUT) = V_{DD} = 5.5V; photodiode DARK			1	µA	
14	Pullup resistance (OUT pin)	$R_{P:OUT}$	[OP,DS] = 'b10; [CA] = 'b1; V(OUT) = 0; photodiode DARK	6.1		19.1	kΩ	
15	Read output bit time	t_{ROB}	First two bits to be read are 'b0, 'b1	5		20	µs	4
16	Read output delay time	t_{ROD}	[OP,DS] = 'b10; [CA] = 'b1; photodiode DARK; LSB to be read is 'b1			6	µs	5
17	Optical response time	t_{OR}			6	6.5	µs	6

'b0 = [Low]
'b1 = [High]
'b01 = [Low, High]
'b11 = [High, High]
'b10 = [High, Low]

TT Electronics | OPTEK Technology
1645 Wallace Drive, Carrollton, TX 75006 | Ph: +1 972 323 2200
www.ttelectronics.com | www.optekinc.com