

### Electrical Specifications

<b>Absolute Maximum Ratings</b> ( $T_A = 25^\circ\text{C}$ 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		$\pm 20$	mA
Current into or out of GND, cathode		$\pm 150$	mA
Illuminance / background light	$I_x$	25	kLux
ESD immunity (human body model)	ESD	$\pm 4$ 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

#### General Note

TT Electronics reserves the right to make changes in product specification without notice or liability. All information is subject to TT Electronics' own data and is considered accurate at time of going to print.

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### Electrical Specifications (cont.)

**Electrical Characteristics** ( $T_A = 25^\circ\text{C}$  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	$\Delta V_{DDpp}$	Sinusoidal; $f \leq 10\text{ kHz}$	$.02 * V_{DD}$			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; $V_{DD} - V(K) \leq 2V$		85		mA	
7	LED pulsed drive current	$I_{OL:K:MIN}$	Minimum [LED] value; $V_{DD} - V(K) \leq 2V$		3		mA	
8	LED pulse period	$t_{PER}$			2		$\mu\text{s}$	
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)	$V_{OL:OUT}$	$I_{OL} = 4\text{mA}$ ; [OP,DS] = 'b01; [CA] = 'b1; photodiode DARK			0.4	V	
12	Output high voltage (OUT pin)	$V_{OH:OUT}$	$I_{OH} = -4\text{mA}$ ; [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	$\mu\text{A}$	
14	Pullup resistance (OUT pin)	$R_{P:OUT}$	[OP,DS] = 'b10; [CA] = 'b1; $V(OUT) = 0$ ; photodiode DARK	6.1		19.1	$\text{k}\Omega$	
15	Read output bit time	$t_{ROB}$	First two bits to be read are 'b0, 'b1	5		20	$\mu\text{s}$	4
16	Read output delay time	$t_{ROD}$	[OP,DS] = 'b10; [CA] = 'b1; photodiode DARK; LSB to be read is 'b1			6	$\mu\text{s}$	5
17	Optical response time	$t_{OR}$			6	6.5	$\mu\text{s}$	6

'b0 = [Low]

'b1 = [High]

'b01 = [Low, High]

'b11 = [High, High]

'b10 = [High, Low]

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