

MAX44009

Industry's Lowest-Power Ambient Light Sensor with ADC

ELECTRICAL CHARACTERISTICS (continued)

(VCC = 1.8V, TMIN to TMAX = -40°C to +85°C, unless otherwise noted.) (Note 1)

PARAMETER	SYMBOL	CONDITIONS	MIN	TYP	MAX	UNITS
I²C TIMING						
Serial-Clock Frequency	f _{SCL}				400	kHz
Bus Free Time Between a STOP and a START Condition	t _{BUF}		1.3			μs
Hold Time (Repeated) START Condition	t _{HD,STA}		0.6			μs
Low Period of the SCL Clock	t _{LOW}		1.3			μs
High Period of the SCL Clock	t _{HIGH}		0.6			μs
Setup Time for a Repeated START Condition	t _{SU,STA}		0.6			μs
Data Hold Time	t _{HD,DAT}	(Note 4)	0		0.9	μs
Data Setup Time	t _{SU,DAT}		100			ns
Fall Time of SDA Transmitting	t _F	I _{SINK} ≤ 6mA, t _R and t _F are measured between 0.3 x V _{DD} and 0.7 x V _{DD}		100		ns
Setup Time for STOP Condition	t _{SU,STO}		0.6			μs
Pulse Width of Spike Suppressed	t _{SP}	Input filters on the SDA and SCL inputs suppress noise spikes	0		50	ns

Note 1: All devices are 100% production tested at T_A = +25°C. Temperature limits are guaranteed by design.

Note 2: Green 538nm LED chosen for production is such that the IC responds to 100 lux fluorescent light with 100 lux.

Note 3: With respect to green LED 538nm response.

Note 4: A master device must provide a hold time of at least 300ns for the SDA signal (referred to V_{IL} of the SCL signal) to bridge the undefined region of SCL's falling edge.

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Typical Operating Characteristics

(VCC = 1.8V, default power-up setting, unless otherwise noted.)

