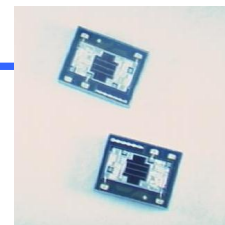


Light Sensor IC

LMSS-101



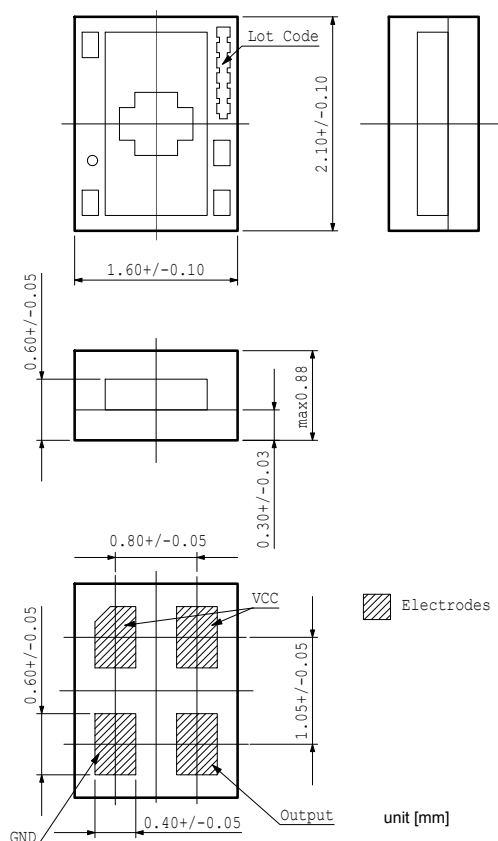
Features

- Close to the human eye spectral response
Special optical technology without using IR cut filter
- Wide illuminance range
- Logarithmically proportional output to illuminance
- Excellent temperature stability
- Small packaging: 2.1 x 1.6 mm x 0.9 mm
- Excellent output linearity
- RoHS compliance

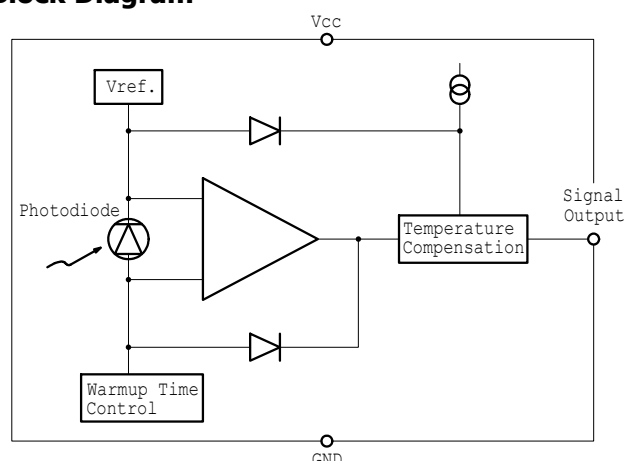
Applications

- Automatic lighting
Security lights, Dimmer Lights, etc.
- Saving energy
TVs, Control panels, etc.
- Dimmer for LCD backlight
PDAs, Mobile phones, Clocks, etc.
- Automatic exposure control
Cameras, CCTVs, Security cameras, etc.

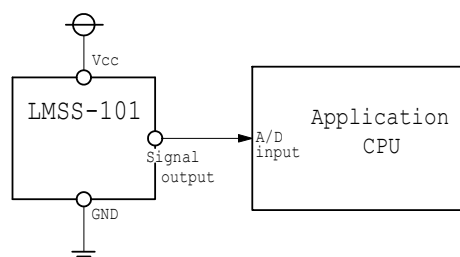
■ Dimensions



■ Block Diagram



■ Standard Application Circuit



■ Absolute Maximum Ratings (Ta=25°C)

Parameter	Symbol	Min.	Max	Unit
Supply Voltage	V _{cc}	-0.3	5.5	V
Power Dissipation *1)	P _d	-	75	mW
Input Terminal Voltage	V _{inmax}	-0.3	V _{cc} +0.3	V
Output Terminal Voltage	V _{omax}	-0.3	V _{cc} +0.3	V
Operating Temperature *2)	T _{opr}	-10	80	°C
Storage Temperature *2)	T _{stg}	-25	85	°C

*1) Derating ratio of power dissipation above 25°C : -1.25mW/°C

*2) No freezing. No dewing. Illuminance : more than 10 lx

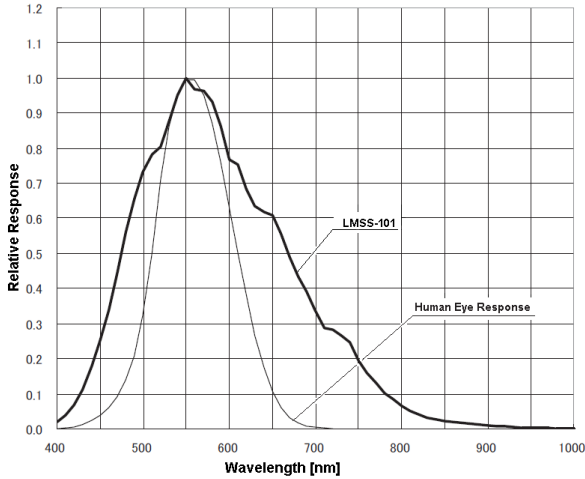
■ Optical Specifications (Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Minimum Illuminance	I _{in} MIN	Color Temp.= 6000K	-	-	0.1	lx
Maximum Illuminance	I _{in} MAX	Color Temp.= 6000K	3000	-	-	lx
Peak Wavelength	λ _p		-	550	-	nm
Peak Wavelength Response	Sen(P)	λ=580nm, Photodiode	0.12	0.15	-	A/W
Infrared Range Response	Sen(IR)	λ=800nm, Photodiode	-	0.04	0.05	A/W

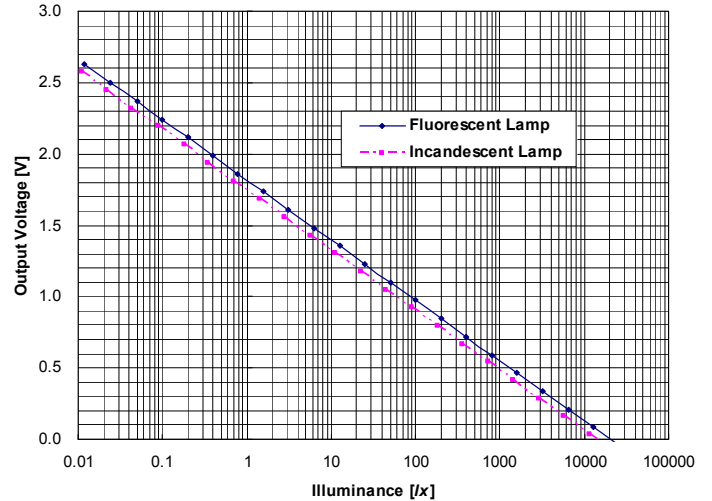
Electrical Specifications (Ta=25°C)

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Operating Voltage	V_{opt}		2.9	-	5.3	V
Current Consumption	I_{opt}	Max. light intensity	230	450	670	μ A
Warm-up Time	T_{ack}		-	-	100	ms
Output Current Range	I_{out}	$V_{out} = 0.2 \sim (V_{cc} - 0.2)V$	-10	-	10	μ A
Output Voltage Range	V_{out}		200		$V_{cc} - 200$	mV
Output Voltage 1	V_{ref1}	at 25 lx, 6000K	1.08	1.30	1.52	V
Output Voltage 2	V_{ref2}	at 3.0 lx, 6000K	1.47	1.69	1.91	V
Output Voltage 3	V_{ref3}	at 0.27 lx, 6000K	1.91	2.13	2.35	V
Temperature Coefficient	dV_{supt}	$\lambda = 580nm$	-	± 0.5	± 1.0	mV/°C

Spectral Response Ta=25°C

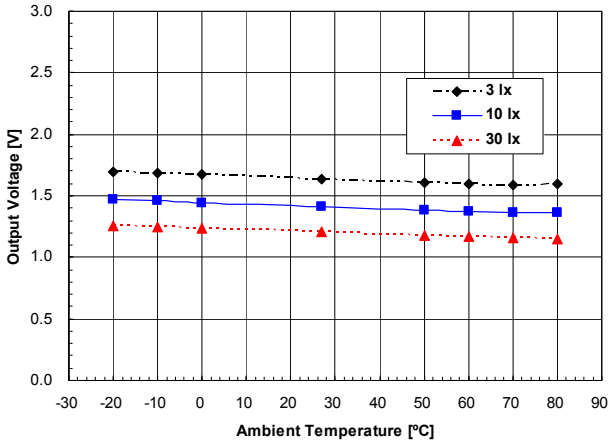


Light Source Dependence Ta=25°C

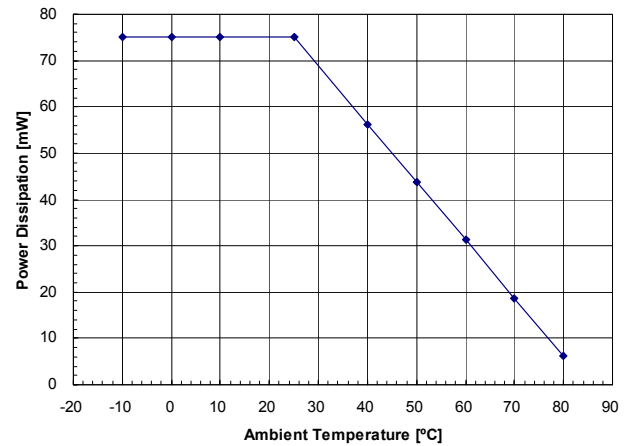


Output Voltage vs. Ambient Temperature

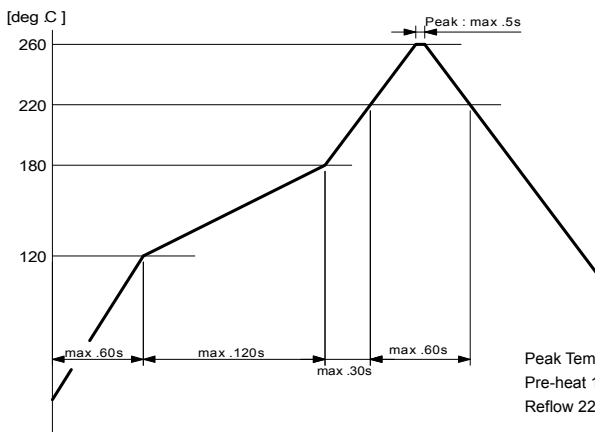
$V_{cc}=4V$



Maximum Power Dissipation vs. Ambient Temp.



Recommended Reflow Profile



Recommended Land Pattern

