AUGIK±O ARDUINO LAUNCHER KIT DATASHEETS

Red LED Bulb (005-001)

Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Viewing Angle	θ		45		Degrees
Recommended Operating Current	IF_{REC}		20		mA
Forward Voltage	V_F	1.5	1.85	2.5	V

Amber LED Bulb (005-003)

Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Viewing Angle	θ		45		Degrees
Recommended Operating Current	IF_{REC}		20		mA
Forward Voltage	V_F	1.7	2.1	2.6	V

Green LED Bulb (005-002)

Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Viewing Angle	θ		45		Degrees
Recommended Operating Current	IF_{REC}		20		mA
Forward Voltage	V_F	1.7	2.1	2.6	V

Blue LED Bulb (005-004)

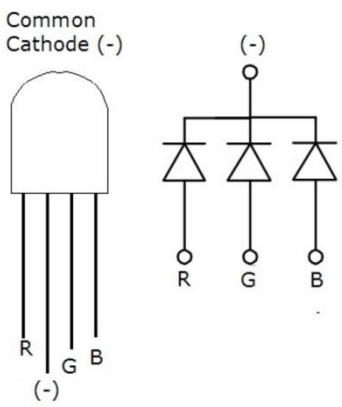
Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Viewing Angle	θ		45		Degrees
Recommended Operating Current	IF_{REC}		20		mA
Forward Voltage	V_F	1.7	3.4	4	V

RGB LED Bulb (005-005)

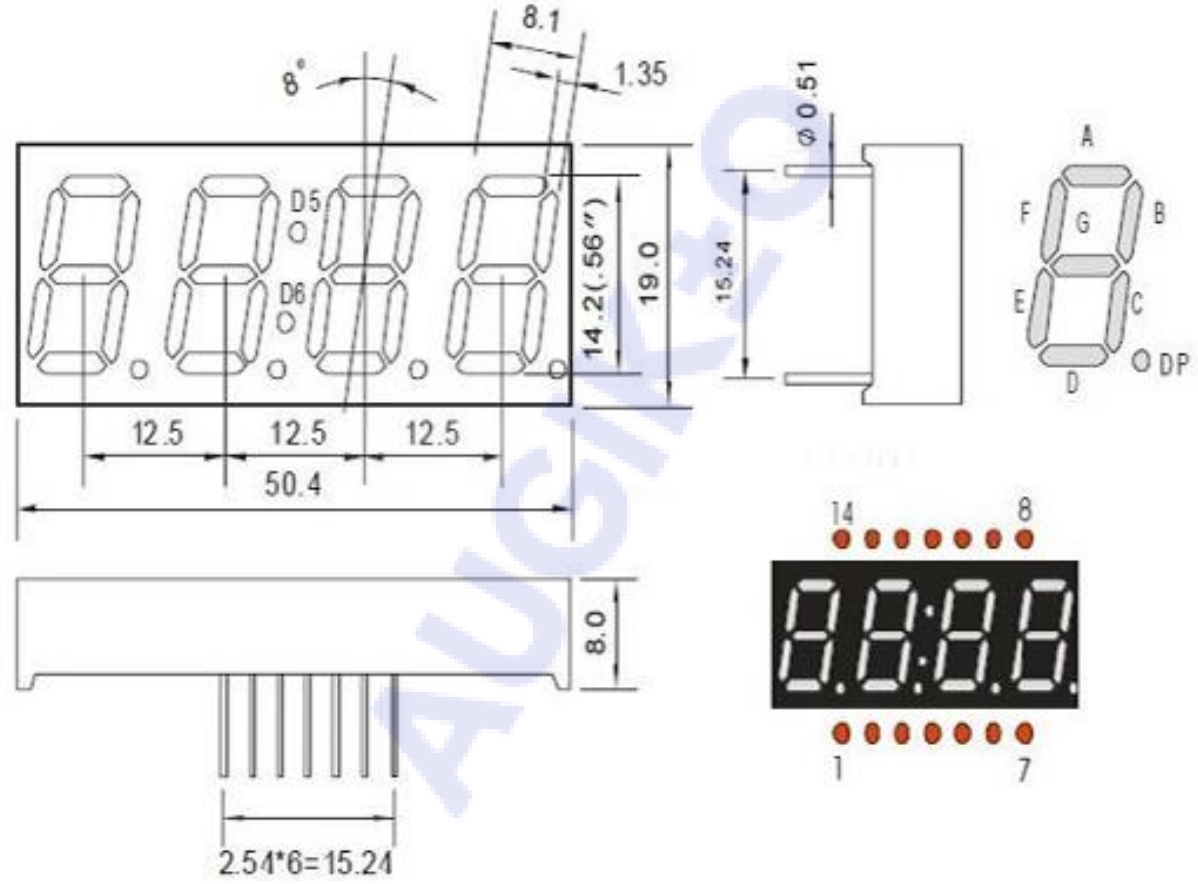
Electrical Characteristics

Parameter	Symbol	Minimum	Typical	Maximum	Unit
Forward Voltage	$V_{F(Red)}$		1.9	2.5	V
	$V_{F(Green)}$		3.2	4	V
	$V_{F(Blue)}$		3.3	4	V

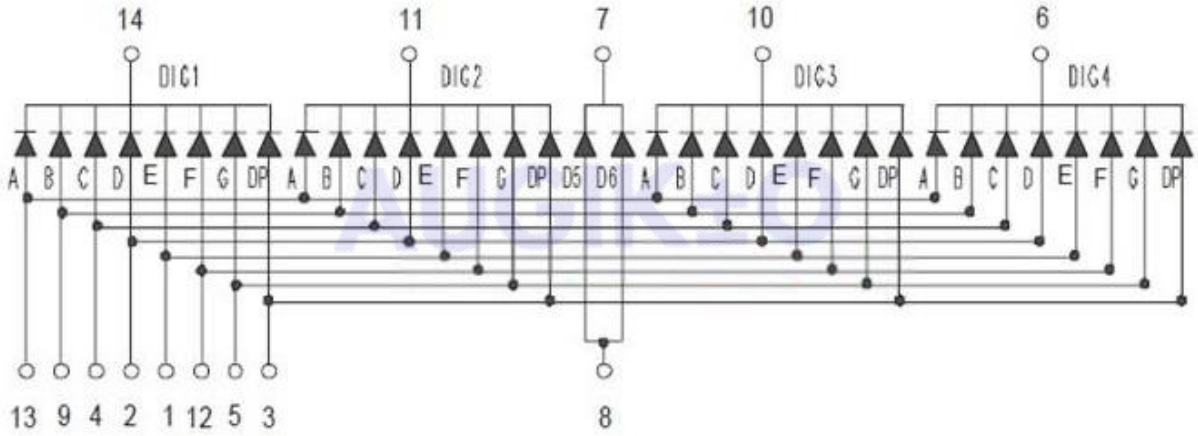


4-Digit LED Display (003-001)

Dimensions



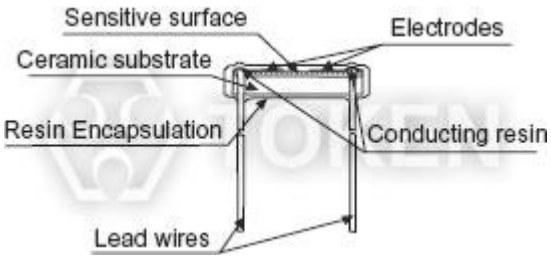
Pin Assignments



Light Sensor (006-101)

Light Dependent Resistor (LDR)

CDS Photo Resistors - in 5mm package



Features

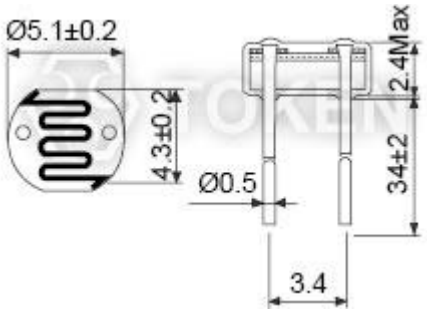
- Epoxy package
- Reliable Performance
- Quick Response
- Good Characteristic of Spectrum

Applications

- Auto Flash for Camera
- Industrial Control
- Photoelectric Control
- Photoswitch;Electronic Toys

Dimensions

All dimensions in mm.



Electrical Characteristics

Parameters	Values
Vmax (V_{DC})	100V
Pmax (mW)	90mW
Ambient Temperature	-30 to 70°C
Spectral Peak (nm)	540 nm
Photo Resistance at 10Lux (kΩ)	5 to 10 kΩ
Dark Resistance (kΩ)	≥ 200 kΩ
Y min	0.6
Rise time (ms)	30
Decay (ms)	40

Temperature Sensor, Passive (006-201)

Thermistor (NTC)

Glass sealed DO-35 10kΩ 1% NTC thermistor B = 3950k

Electrical Characteristics

Characteristics	Symbol	Test Conditions	Minimum	Typical	Maximum	Unit
At 25°C	R_{25}	T_a = 25°C ± 0.05°C $P_T \leq$ 0.1mW	9.9	10	10.1	kΩ
B	B	-		3950		K
Sigma	σ	T_a = 25°C ± 0.5°C	2.5			mW/°C
Time Constant	τ	T_a = 25°C ± 0.5°C			16	Seconds

Maximum Ratings

Characteristics	Values	Unit
Temperature Range	-30°C to +280°C	°C
Maximum Current	1.0	mA
Typical usage current	200	µA

Temperature Relation Equation

The thermistor's temperature can be determined from its resistance using the following equation.

$$T = \frac{3950}{\ln\left(\frac{R}{0.01763227}\right)} - 273.15$$

Where T is temperature in Celsius.

Resistance vs Temperature Relation

T (Celsius)	K (Kelvin)	R (Ohms)	T (Celsius)	K (Kelvin)	R (Ohms)
0	273.15	33621	30	303.15	8037
1	274.15	31893	31	304.15	7700
2	275.15	30266	32	305.15	7379
3	276.15	28733	33	306.15	7074
4	277.15	27288	34	307.15	6783
5	278.15	25925	35	308.15	6506
6	279.15	24639	36	309.15	6241
7	280.15	23425	37	310.15	5989
8	281.15	22279	38	311.15	5749
9	282.15	21197	39	312.15	5520
10	283.15	20175	40	313.15	5301
11	284.15	19208	41	314.15	5093
12	285.15	18294	42	315.15	4894
13	286.15	17430	43	316.15	4703
14	287.15	16612	44	317.15	4522
15	288.15	15837	45	318.15	4348
16	289.15	15104	46	319.15	4182
17	290.15	14409	47	320.15	4024
18	291.15	13751	48	321.15	3872
19	292.15	13127	49	322.15	3727
20	293.15	12535	50	323.15	3588
21	294.15	11974	51	324.15	3455
22	295.15	11441	52	325.15	3328
23	296.15	10936	53	326.15	3207
24	297.15	10456	54	327.15	3090
25	298.15	10000	55	328.15	2978
26	299.15	9567	56	329.15	2871
27	300.15	9155	57	330.15	2769
28	301.15	8764	58	331.15	2671
29	302.15	8391	59	332.15	2577
30	303.15	8037	60	333.15	2486

Table 1 Table of Temperature vs Resistance