

OLED module / A9F4C0A

A9F4C0A Data sheet (A9F4-S102-12)

1. Application

This specification applies to the A9F4C0A OLED module.

Product Overview

Item	Specifications	
Product Name	OLED Module	
Color	Red	
Active Area	15.25 mm × 15.6 mm	
Panel Size	25.9 mm × 21.4 mm	
External Size	39.9 mm × 21.4 mm	

2. Operating conditions

Parameter	Symbol	Min.	Тур.	Max.	Unit
Operating temperature *1	Тор	-10	25	60	°C

^{*1.} Ambient temperature (TA)

3. Absolute Maximum Ratings

Parameter	Symbol	Value	Unit
Absolute maximum forward current	IF	40	mA
Absolute maximum reverse voltage	VR	-1	V
Absolute operating temperature *1	Тор	-20 ~ +70	°C
Absolute storage temperature *1	Tstg	-20 ~ +85	°C

^{*1.} Ambient temperature (TA)

4. Electrical/Optical parameters

Parameter	Symbol	Condition	Min.	Тур.	Max.	Unit
Forward Voltage *1	VF	IF=5.9mA, TA=25℃	_	2.4	_	V
Brightness *1*3	Lv	11	-	500	_	cd/m²
Chromaticity coordinate x *1*3	Сх	II	0.687	0.697	0.707	-
Chromaticity coordinate y *1*3	Су	II	0.293	0.303	0.313	-
Optical Output degradation*2	Lop50%	II	500	_	_	h

^{*1.} Initial data

Regardless of the above, ignore dark spots within 1 mm from the active area outline.

^{*2.} Operation lifetime is the time to 50% of the initial luminance,@TA=25°C.

^{*3.} These values are measured at the center of the Active area.

^{*4.} Uneven brightness or pattern is not a malfunction.

^{*5.} In the initial state at the time of delivery, the dark spots stating below shall be allowable.

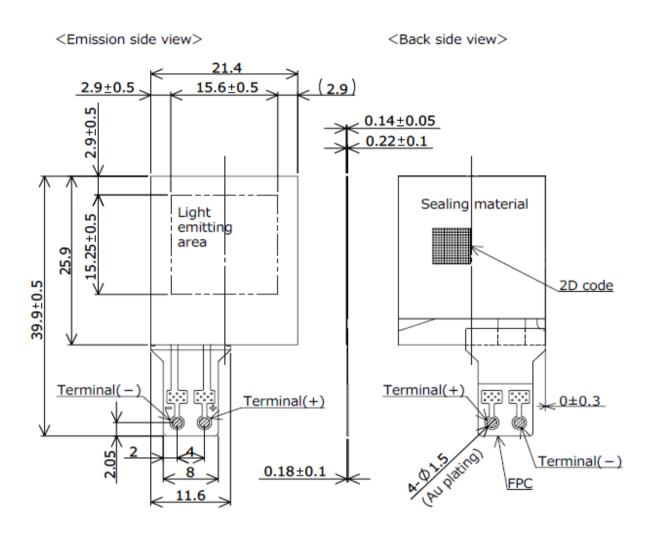
⁻ Under 0.3mm diameter ; can be ignored

^{- 0.3}mm~1.5mm diameter; under 20 pieces/panel

^{*6.} Set Forward Current to more than 2.1mA for stable operation.



5. Mechanical parameters



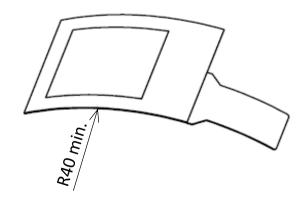
Unless Otherwise Specified, Tolerance ±0.3mm

<Bending conditions>

Use the module under following bending conditions.

* Bending in a direction different from the figure is not recommended.

<Emission side view>

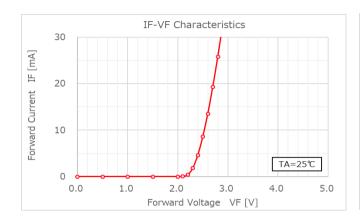


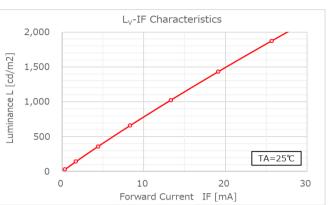


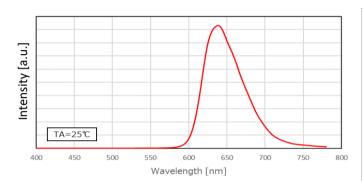
6. Reference data

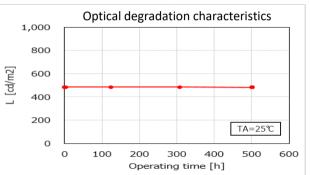
Characteristics chart

-Typical characteristic values, not guaranteed values









7. Recommended soldering conditions

Recommended conditions for manual soldering.

Iron temperature 350°C or less
Heating time Within 3 seconds
Heating position FPC solder terminal

Do not heat anything other than FPC solder terminals.

Be careful not to get flux on the OLED panel.

Flow soldering and reflow soldering are not supported.

8. Attention on storaging

The following conditions are recommended for storage environment

Temperature	~ 25°C
Humidity	~ 50%RH

If stored in high temperature and high humidity conditions, the progress of the dark spots may be accelerated.



Read the following precautions carefully and use this module accordingly.

DANGER Indicates matters deemed to **pose imminent danger to human life or serious injury**.

WARNING Indicates matters deemed to pose potential risk to human life or serious injury.

CAUTION Indicates matter deemed to have the potential to injure someone and/or cause physical damage.

Serious Injury: Injuries that have after-effects, such as loss of eyesight, cuts, burns, electrical shock,

broken bone(s), poisoning, etc., that require hospitalization and/or long-term medical care. Minor Injury: Injuries, such as cuts, bruises, burns, or electrical shock that do not require hospitalization or

extended out-patient medical treatment.

Physical Damage: Extensive damage to a building, household belongings, domestic animals or pets.

Other Other points of concern

		KONICA MINOLTA bears absolutely no responsibility for damage arising due to natural calamities, such as earthquakes, lightning, flood or storm damage, etc., fires KONICA MINOLTA is not responsible for, acts of any third-parties, or any other accidents, nor for damage arising from the customer's intentional or accidental misusage, or occurring under any other abnormal conditions.				
		KONICA MINOLTA bears absolutely no responsibility for any damage incidental to the use or inability to use this module.				
		KONICA MINOLTA bears absolutely no responsibility for damage due to the failure to follow the content in this manual.				
Exempt from Respo		KONICA MINOLTA bears absolutely no responsibility for damage arising due to malfunctions or the like from using adapting equipment not authorized by KONICA MINOLTA.				
		The operation and performance of the module when used independently is not guaranteed.				
		If a customer incorporates this module into other equipment and sells it, the customer alone shall be responsible for complying with the laws and regulations governing the equipment in the country in which it is sold.				
		We ask that customers refrain from disassembling, altering or servicing the module. (May cause breakdown, fire, shock or injury.) If an alteration or the like should be made, resulting in a break-down, it invalidates the warranty and KONICA MINOLTA shall bear absolutely no responsibility.				
	DANGER	Do not use or place the module in a hot location (near flame, a stove, under the hot sun, etc.). (May cause a fire or explosion.)				
	WARNING	Do not put anything nearby that can easily be spilled or catch on fire. (May cause malfunction, a fire, shock or other damage.)				
	WARNING	Do not use for any purpose except as a light source. (May cause malfunction, a fire, shock or other damage.)				
	WARNING	Only use at the specified electrical voltage. (May cause a fire, overheating, shock, etc.)				
	WARNING	We recommend indoor use. When using the module outdoors, take preventative steps against heat, humidity and protect it from water, rain, strong ultraviolet rays, etc. (May cause malfunction, shock or other damage.)				
Installation Environment	WARNING	The module is not water or rain-proof. Refrain from using it in a location with high humidity or where rain, dew or condensation may get on it. (May cause damage and/or failure of its insulation.)				
	CAUTION	Do not position near the air outlet of an air conditioner. (May cause malfunction due to condensation.)				
	CAUTION	Do not use in a humid, hot or cold location or where it is subject to the strong UV rays of direct sunlight. (May cause overheating, a fire, warping or malfunction.)				
	CAUTION	Do not position in a location subject to strong shocks or vibrations. (May cause a malfunction or other damage.)				
	CAUTION	Do not position in a dusty location. (May cause a malfunction or other damage.)				
	CAUTION	Do not position where pets or small children can touch it. (May cause an injury, burn, or other damage.)				
	CAUTION	Do not position where a pet may urinate on it. (May cause a malfunction, corrosion or other damage.)				
	CAUTION	Do not position near corrosive chemicals or where corrosive gases are generated. (May cause a malfunction, corrosion or other damage.)				



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	Other	Incorporate the module into an environment with as little dust as possible. (May cause a malfunction.)			
Accombly	Other	Refrain from incorporating it into a corrosive environment, such as one with strong acids or alkalis. (May cause a malfunction or corrosion.)			
Assembly Environment	Other	Do not handle by bare hand. The operators should use with plastic gloves.			
Other		Highly recommend to cover the emitting side of OLED panel. (May cause damage.)			
	Other	When incorporating it into equipment, take steps to protect the module from static electricity. (May cause a malfunction.)			
	DANGER	o not heat up or throw into a fire. Also, do not put into a microwave or high-pressure vessel. (May ause a fire, explosion or malfunction.)			
	DANGER	Do not short terminals. Take care that no conductive matter (pieces of metal, pencil lead, etc.) touches terminals.(May cause a fire, explosion or malfunction.)			
	WARNING	Do not subject to strong shocks, such as by dropping or throwing it. (May cause an explosion, fire or malfunction.)			
	CAUTION	Connect the plus and minus of the power supply correctly. (May cause a malfunction or other damage.)			
Protecting	CAUTION	Do not push on the light-emitting surface or its back or subject it to a strong shock. (May cause a cut or damage.)			
the module	CAUTION	Do not rub, push or hit the light-emitting surface with any hard object, such as a tool. (May cause a cut or damage.)			
	CAUTION	Do not stack modules. (May cause damage.)			
	Other	If the light-emitting surface of the OLED panel was written or affixed , the panel may discolored or damaged.			
	Other	Never allow drops of water or the like to stay on the light-emitting surface; wipe them off gently with a cotton ball or soft, dry cloth. (May cause a stain or discoloration.)			
	Other	We recommend gently wiping the light-emitting surface with a dry cloth. If it gets very dirty, wipe it off gently with a soft cloth and a little IPA, do not use any alkalic or acid(May cause stains or discoloration.)			
	Other	Do not rinse the module with water. (May cause a malfunction.)			
	WARNING	We recommend wearing gloves (a type that does not readily generate static) when handling the module.			
	WARNING	Take care that your pet doesn't bite or scratch the module. (May cause shock, injury or malfunction.)			
	WARNING	In extremely rare cases, looking at bright light stimuli and/or flashing lights repeatedly can result in symptoms such as muscle convulsions, loss of consciousness, etc. Refrain from using if you suspect this may happen.			
Keeping Yourself and Your Pets Safe	CAUTION	Highly recommend to avoid looking directly into the light source for a long time because this can lead to a temporary impairment of eyesight, even if IEC62868:2014 (Safety requirements standard of OLED modules for general lighting) defines OLED module does not need to do Photo biological safety test. Take particular care with infants.			
	CAUTION	Do not touch the light-emitting surface as it may be hot while lit or for some time after it turns off.			
	CAUTION	Take care not to hit, scratch or press on anything hard with it. (May cause damage or injury.)			
	CAUTION	If any abnormal situation like local high brightness, heating, or deformation, please switch off the current and do not use it any more.			
	CAUTION	Do not disassemble or alter the module.			



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	CAUTION	If the module is cracked, take care not to touch anything inside the module. (May cause injury.)
If a Problem or Damage Occur CAUTIO		If a fragment of the cracked module or anything from inside it should get in your mouth or eyes, rinse off anything clinging to your skin thoroughly with clean water and then consult a physician. (May cause injury.)
	CAUTION	Lay it out so no electronic parts are in direct contact with any other parts. We recommend insulating materials for the case. (May cause a malfunction or shock.)
	CAUTION	The layout should prevent the light-emitting surface and the back surface of the panel from being pressed upon with force. (May cause a malfunction or other damage.)
When Designing Equipment	Other	Plan the layout so static electricity cannot be transmitted directly to the module or its connectors. (May cause a malfunction.)
	Other	Plan the layout so the module dissipates heat well. (May cause a malfunction.)
	Other	Plan the layout so the module is not stressed with bending, folding or twisting when incorporating it. (May cause a malfunction or other damage.)
	Other	Highly recommend to avoid twisting or stressing the module strongly.
	Other	At low luminance, the individual differences in modules produces variation in the expression of gradation and this is not a defect.
module Performance	Other	There may be some quite small black and/or bright spots on the light-emitting surface. And depending on the viewing angle, there may be some variation in the color of light and/or irregular, streaky brightness. These arise from the structure of the OLED lighting.
Disposal	Other	When disposing of the module, do so in accordance with all national and local regulations.

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