



## DISPLAY LED

### 1.ELEMENT APPEARANCE

Model No.	Material	Lighting Color	Surface Color	Segment Color
RT-DTA2519HR	AlGaInP	Red	Black Color	White Color

### 2.ABSOLUTE MAXIMUM RATINGS AT Ta=25°C

Characteristic	Symbol	Rating	Unit
Forward direct current	IFM	20	mA
Reverse voltage	VRM	5	V
Operating temperature	Topr	-35 to +80	°C
Storage temperature	Tstg	-35 to +80	°C
Power dissipation	Pd	60	mW
Peak forward current (1/10 duty cycle,0.1ms pulse width)	Ifp	100	mA

### 3.ELECTRO-OPTICAL CHARACTERISTICS AT Ta=25°C

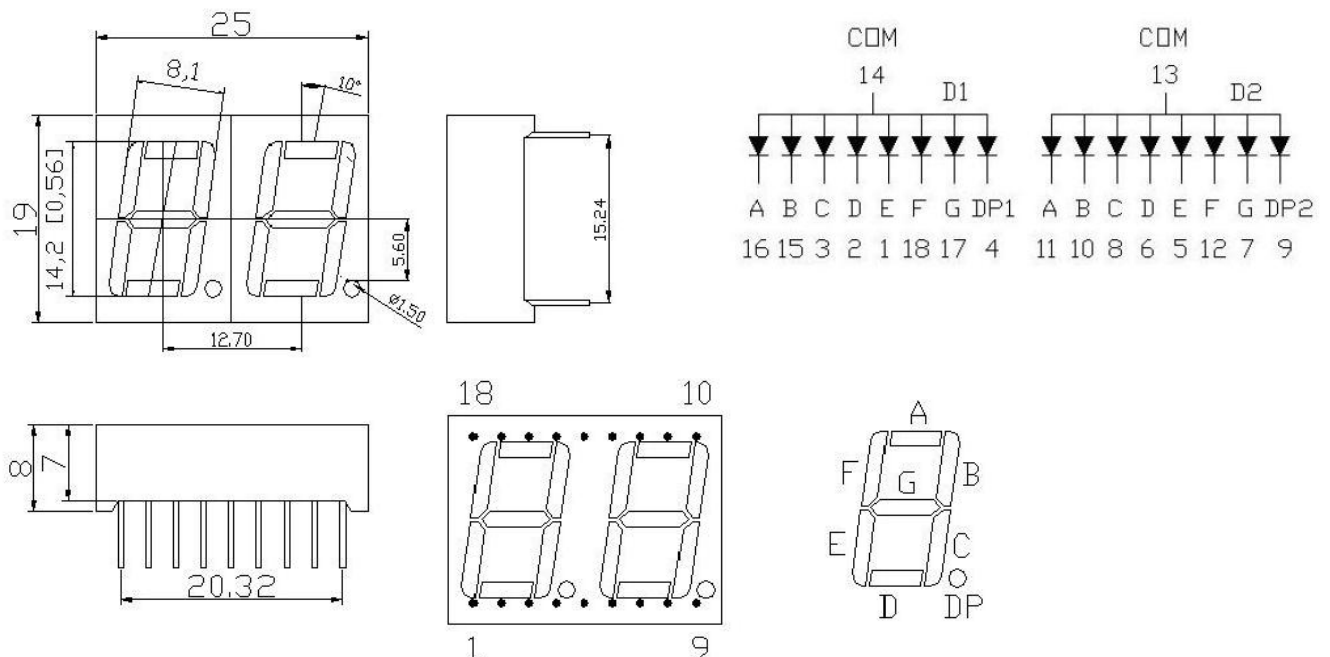
Characteristic	Symbol	Condition	Min.	Typ.	Max.	Unit
Luminous intensity	Iv	IF= 5 mA	16	45		mcd
Forward voltage	VF	IF= 5 mA	1.5	1.8	2.2	V
Reverse current	IR	VR= 5V			10	μA
Dominant wavelength	λd	IF= 5 mA	620		635	nm
Viewing angle	2θ 1/2	IF= 5mA		120		nm

※Luminous intensity Measurement allowance is ±15%

※Forward voltage Measurement allowance is ±0.05V

※Dominant wavelength Measurement allowance is ±1nm

● DIMENSIONS UNIT : m/m TOLERANCE : ± 0.15mm



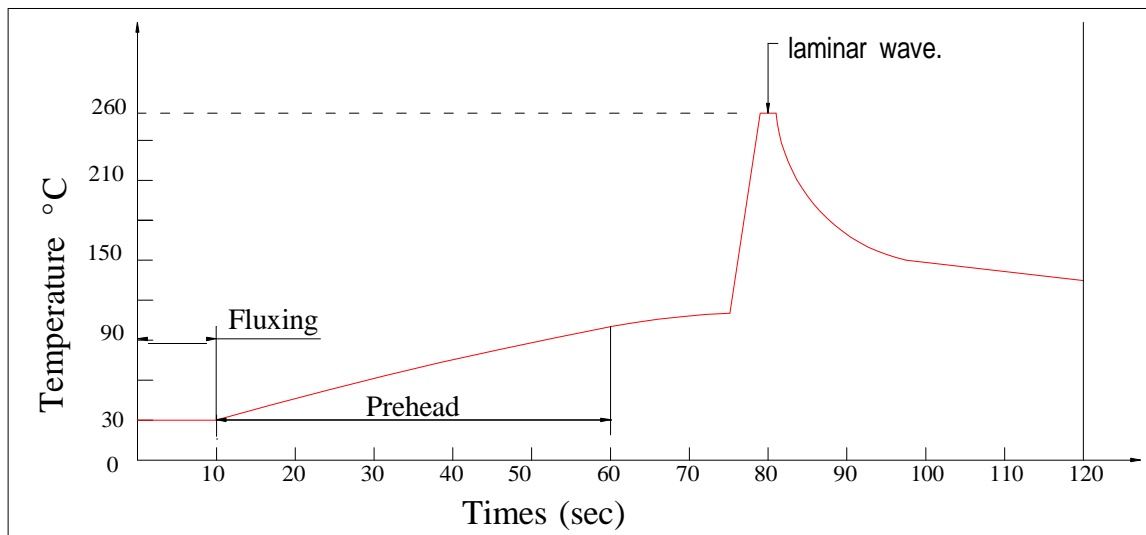


## Soldering Profile

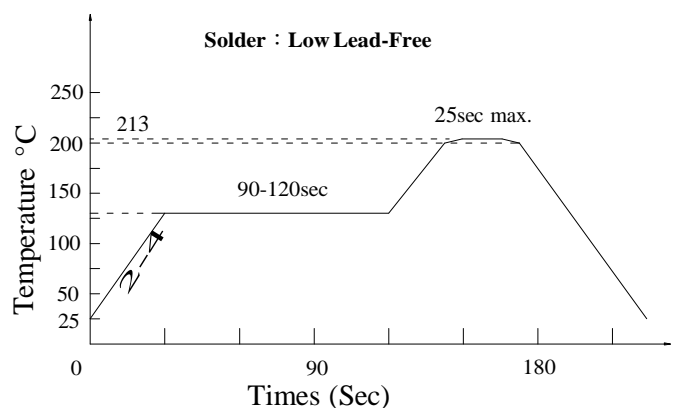
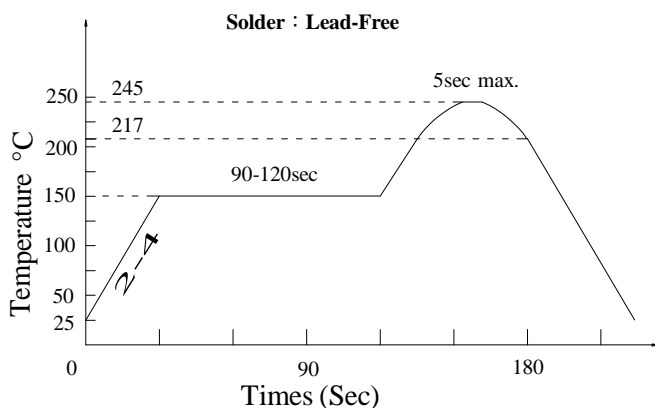
**Compliant with the following condition :**

- (1) Leaded quantity of product below 100 ppm
- (2) Lead-free process

Shape	Lead Frame Type
Hand soldering	1.Temp.at tip of iron : 300 °C max.(30W max.) 2.Soldering time : 3 sec max. 3.Distance : 3 mm MIN (from solder joint to case)
DIP soldering	1.Preheat temp : 100 °C max , 60 sec max. 2.Bath temp : 260 °C max. 3.Bath time : 3 sec max. 4.Distance : 3 mm MIN (From solder joint to case)
Recommended soldering profile	1.Preheat temp. : 100 °C , 50 sec max. 2.Peak temp. : 260 °C max. 3.Peak time : 3 sec max. 4.Duration above: 200°C , 3 sec max.



Profile Feature	SMD Type	
	Solder : Lead-Free	Solder : Low Lead-Free
Preheat temp	150-180 °C , 4°C/sec max. 120 sec max.	130-170 °C , 4°C/sec max. 120 sec max.
Peak temp	245 °C max. , 5 sec max.	213 °C max. , 25 sec max.
Duration above	217 °C , 60 sec max.	200 °C , 40 sec max.





## Reliability Test Items

### CONDITIONS :

The reliability of products shall be satisfied with items listed below.

NO.	<u>Item</u>	Condition	Time / Cycle	Criteria	Ac / Re	Sample Quantity
1	Thermal Shock	0°C(5min) ~70°C(5min)	20 Cycles	Open / Shot	0 / 1	60 pcs
2	High Temp. Storage	85°C	1000 Hrs	Open / Shot	0 / 1	60 pcs
3	Low Temp. Storage	-30°C	1000 Hrs	Open / Shot	0 / 1	60 pcs
4	Temperature Cycle Test	-25°C~85°C	100 Cycles , 200Hrs	Open / Shot	0 / 1	60 pcs
5	High Temp. High Humidity Test	60°C, 90% RH	1000Hrs	Open / Shot	0 / 1	60 pcs
6	DC Operation Life Test	IF=10mA	1000Hrs	Power decay	≤30%	60 pcs