

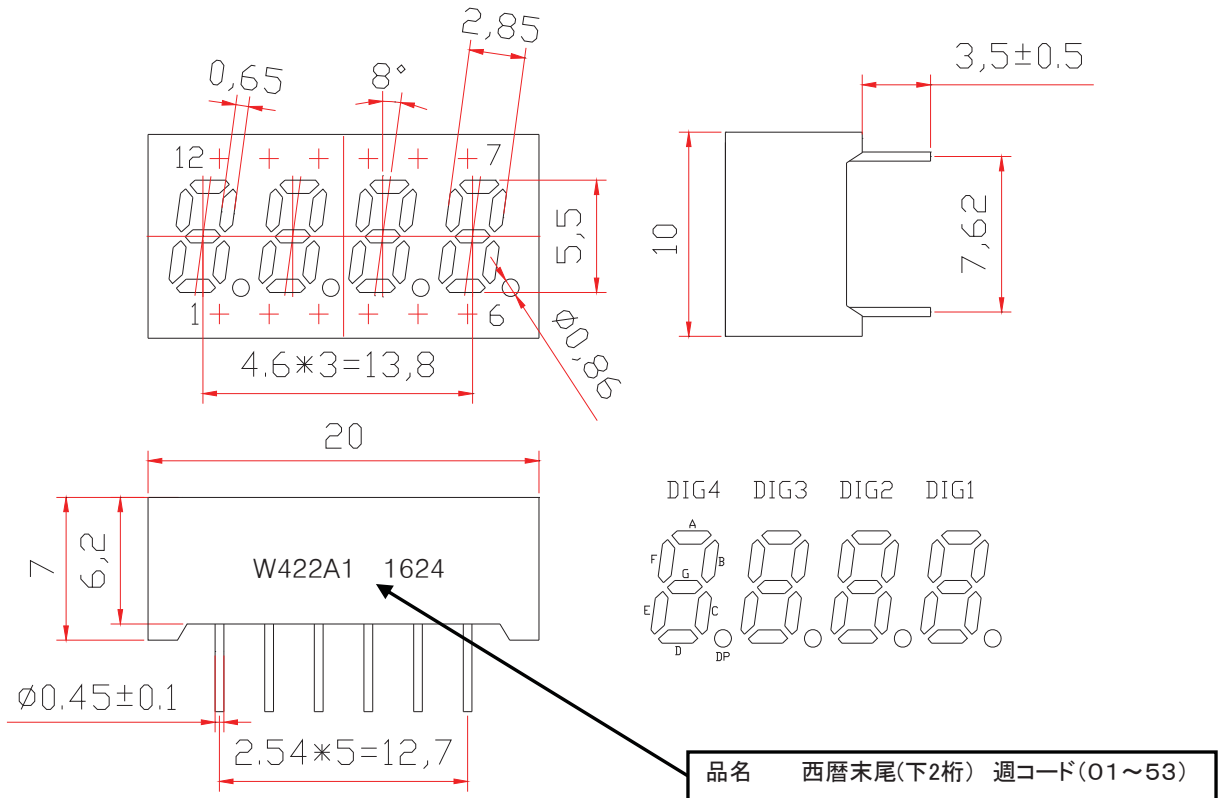
W422A1



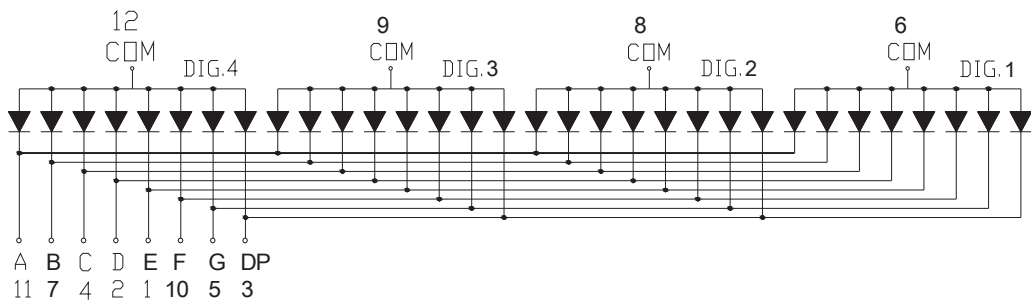
アルファードバイス株式会社

REVISION: A4

# 1. 外形



# 2. 回路図



# 3. ピン配置

PIN NO.	CONNECTION	PIN NO.	CONNECTION
1	Cathode E	7	Cathode B
2	Cathode D	8	Common DIG.2
3	Cathode DP	9	Common DIG.3
4	Cathode C	10	Cathode F
5	Cathode G	11	Cathode A
6	Common DIG.1	12	Common DIG.4

#### 4. 特徴

- ・ 高信頼性
- ・ 赤単色
- ・ 低消費電力
- ・ Easy Assembly

#### 5. 説明

- ・ 4桁表示
- ・ 文字高:5.5mm(0.22")
- ・ **Black Face and White Segment**

#### 6. 絶対最大定格 (Ta=25°C):

Parameter	Symbol	Condition	Color	Rating	Units
Power Dissipation Per Segment	$P_d$	—	Red	65	mW
Forward Current Per Segment	$I_F$	—	Red	25	mA
Peak Forward Current Per Segment	$I_{FP}$	1/10 Duty 10KHz	Red	100	mA
Reverse Voltage Per Segment	$V_R$	—	Red	5	V
Operating Temperature Range	$T_{opr}$	—	—	-35~+85	°C
Storage Temperature Range	$T_{stg}$	—	—	-35~+85	°C

#### 7. 電気/光学特性 (Ta=25°C)

Item	Symbol	Test conditions	Location	Rating			Units
				Min.	Typ.	Max.	
Forward Voltage	$V_F$	$I_F=20mA$	Per Segment	—	2.00	2.60	V
Reverse Current	$I_R$	$V_R=5V$	Per Segment	—	—	100	$\mu A$
Luminous Intensity	$I_v$	$I_F=10mA$	Per Segment	4001	6500	—	$\mu cd$
Peak Emission Wave Length	$\lambda_p$	$I_F=20mA$	Per Segment	—	640	—	nm
	$\lambda_d$			—	631	—	
Spectral Line Half Width	$\Delta \lambda$	$I_F=20mA$	Per Segment	—	20	—	nm

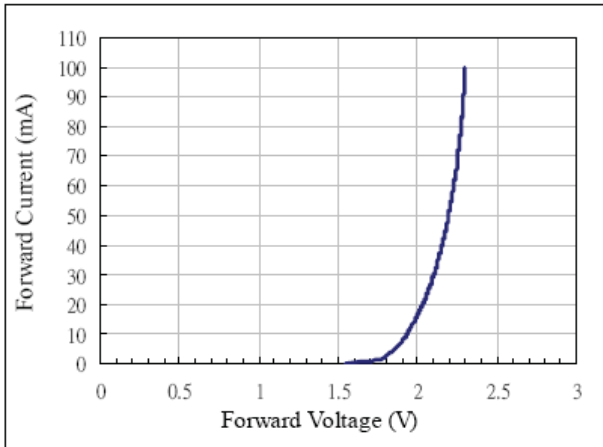
フローはんだ付け条件：はんだ付け温度  $\leq +260^\circ C$ ，はんだ付け時間  $\leq 3sec$ 。

手はんだ条件：はんだ付け温度  $\leq +320^\circ C$  はんだ付け時間  $\leq 3sec$ 。

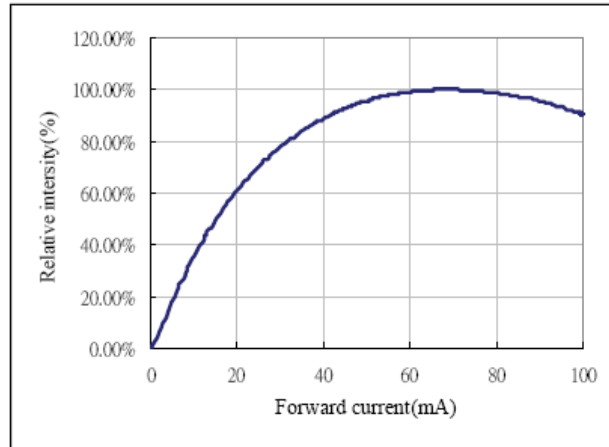
**Electrostatic Discharge Threshold: HBM 1500V**

## 8. 電気光学特性グラフ

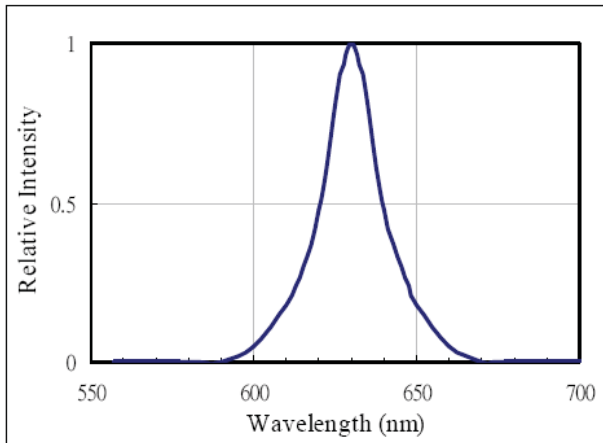
### Forward current vs. Forward voltage



### Relative intensity vs. Forward current



### Relative intensity vs. Wavelength



## 9. 信頼性試験

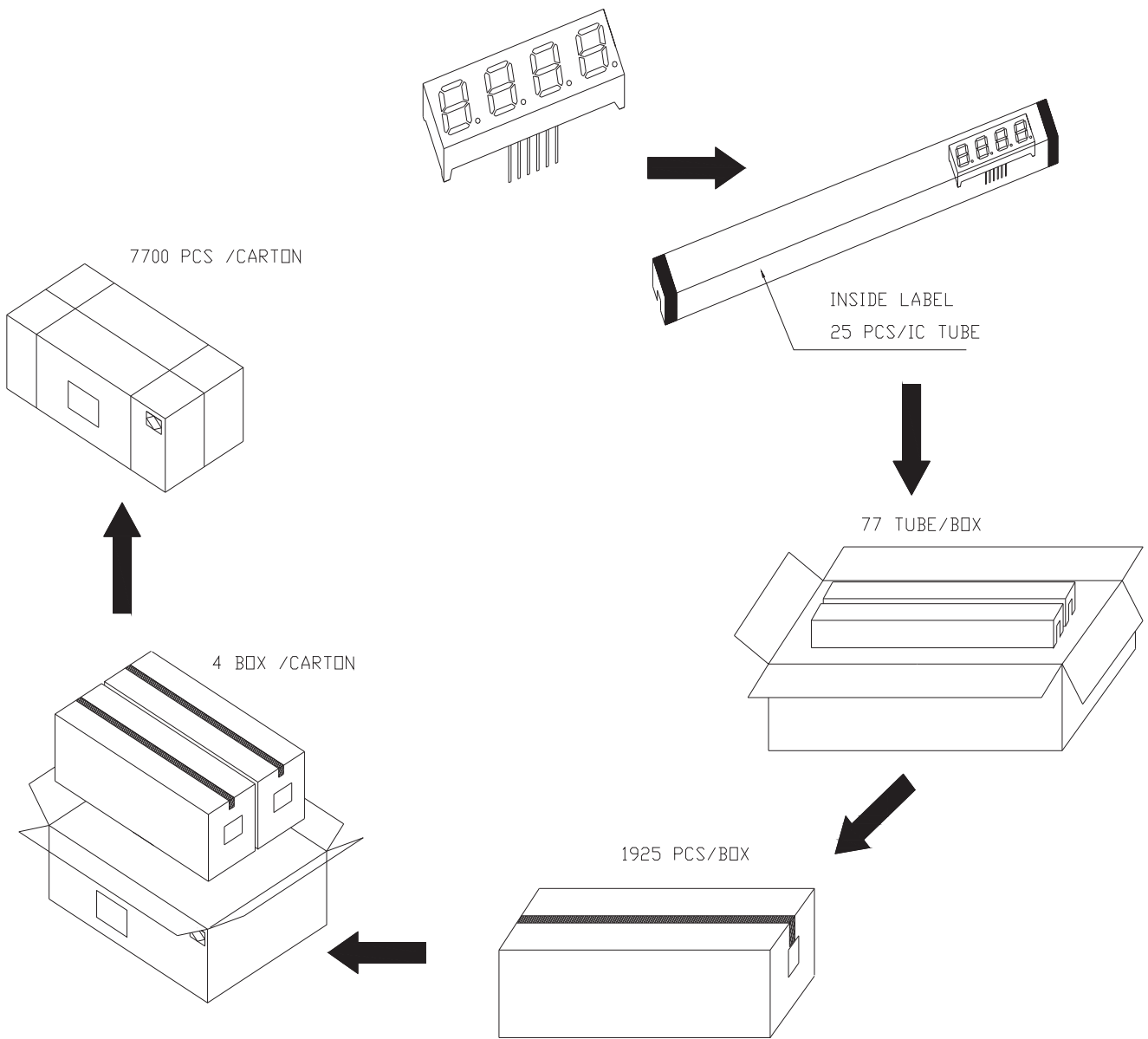
CLASSIFICATION	TEST ITEM	DESCRIPTION AND TEST CONDITION
ENDURANCE TEST	OPERATION LIFE	EVALUATES RESISTANCE OF THE DEVICE WHEN OPERATED AT ELECTRICAL STRESS $T_a$ = UNDER ROOM TEMPERATURE $I_F = I_F \text{ max}$
	HIGH TEMPERATURE HIGH HUMIDITY STORAGE	EVALUATES MOISTURE RESISTANCE OF THE DEVICE WHEN STORED FOR A LONG TERM AT HIGH TEMPERATURE AND HUMIDITY $T_a = 65 \pm 5^\circ\text{C}$ RH=90~95%RH TEST TIME=240± 2Hrs
	HIGH TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN HIGH TEMPERATURE $T_a = 85 \pm 5^\circ\text{C}$ (COB: $T_a = 65 \pm 5^\circ\text{C}$ ) TEST TIME=1000Hrs(-24Hrs, +72Hrs)
	LOW TEMPERATURE STORAGE	EVALUATES DEVICE DURABILITY FOR LONG TERM STORAGE IN LOW TEMPERATURE $T_a = -35 \pm 5^\circ\text{C}$ TEST TIME=1000Hrs(-24Hrs, +72Hrs)
ENVIRONMENTAL TEST	TEMPERATURE CYCLING	EVALUATES RESISTANCE OF DEVICE AT THERMAL STRESSES OR EXPANSION AND CONTRACTION $85^\circ\text{C} \sim 25^\circ\text{C} \sim -35^\circ\text{C} \sim 25^\circ\text{C}$ 30min 5min 30min 5min 10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )
	THERMAL SHOCK	EVALUATES DEVICE STRUCTURE AND STRUCTURE AND MECHANICAL RESISTANCE WHEN SUDDENLY EXPOSED AT SERVE CHANGES $85 \pm 5^\circ\text{C} \sim -35 \pm 5^\circ\text{C}$ 10min 10min 10 CYCLES(COB: $T_{\text{hot}}=65^\circ\text{C}$ , $T_{\text{cold}}=-25^\circ\text{C}$ )
	SOLDERABILITY	EVALUATES SOLDERABILITY ON LEADS OF DEVICE $T_{\text{SOL}}=230 \pm 5^\circ\text{C}$ DWELL TIME=5±1sec.
	SOLDER RESISTANCE	EVALUATES RESISTANCE TO THERMAL STRESS CAUSED BY SOLDERING $T_{\text{SOL}}=260 \pm 5^\circ\text{C}$ DWELL TIME=10±1sec.

1 0. 梱包仕様

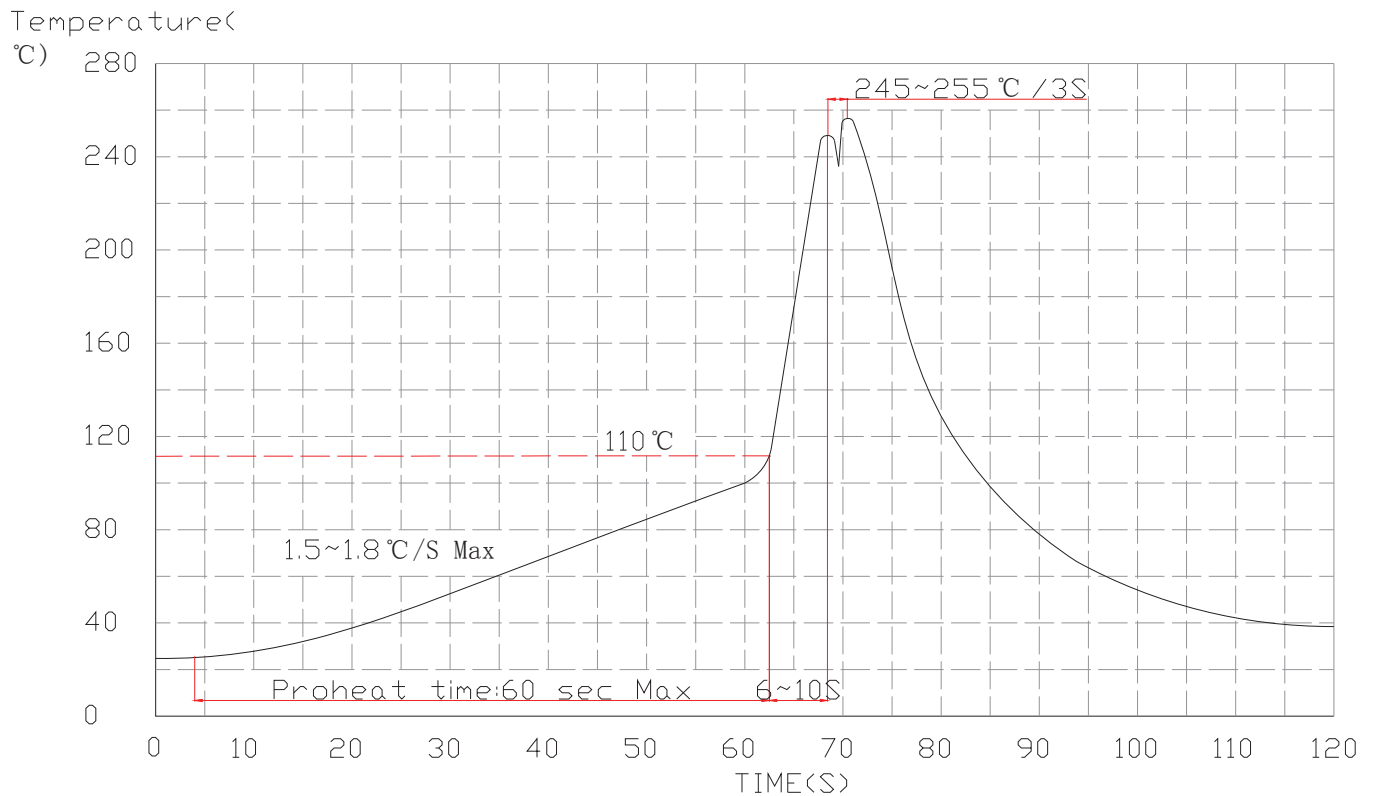
25 pcs / IC Tube.

1925 pcs / Box (537\*175\*125mm).

7700 pcs / Carton (550\*380\*280mm).



## 1 1. 推奨フローはんだ付け条件



### Notes:

- 1.Recommend pre-heat temperature of 110°C or less (as measured with a thermocouple attached to the LED pins) prior to immersion in the solder wave with a maximum solder bath temperature of 260°C.
- 2.Peak wave soldering temperature between 245°C~255°C for 3 sec .
- 3.Do not apply stress to the epoxy resin while the temperature is above 85°C.
- 4.Fixtures should not incur stress on the component when mounting and during soldering process.
- 5.SAC 305 solder alloy is recommended.
- 6.No more than one wave soldering pass.

## 1 2. 推奨パッド

