



蛍光表示管製品規格
VACUUM FLUORESCENT DISPLAY
SPECIFICATION

H

形名 Type No. 16-LY-036/GR/GAK/GK
(S-47436)

双葉電子工業株式会社

生産本部電子管技術部
ENGINEERING DEPT.
ELECTRONIC COMPONENTS
CORPORATE PRODUCTION DIVISION
FUTABA CORPORATION

用途: Application Character Display

概要: Features 16digits, 16segments Alpha-numeric with decimal point & comma.

発光色: Color of Illumination Green (G. $x=0.235, y=0.405$)

外形寸法 Outer Dimension	Panel Length	P.L.	205.2	mm
	Panel Height	P.H.	29.0	mm
	Panel Thickness	P.T.	8.0	mm
端子 Lead	Lead Pitch	L.P.	2.0	mm
	Lead Out		SIL	

定格: Ratings

項目: Item	Symbol	Min.	Recommended	Max.	Unit
フィラメント電圧: Filament Voltage	*1 Ef	6.75	7.5	8.25	Vac
せん頭グリッド電圧: Peak Grid Voltage	ec	-	42	50	Vp-p
せん頭アノード電圧: Peak Anode Voltage (下記Du条件: At following Du)	eb(G.)	-	42	50	Vp-p
	eb()	-			Vp-p
	eb()	-			Vp-p
	eb()	-			Vp-p
カットオフバイアス: Cut-off Bias	*2 Ek	-	7.5	-	Vdc
デューティファクタ: Duty Factor	Du		1/20		-
パルス幅: Pulse Width	tp		80		μs
拡散グリッド電圧: Diffusion Grid Voltage	*3 Ecd	-		-	Vdc
フィラメントダンパー電圧: Filament Damper Voltage	*4 EFd	-		-	Vdc
動作温度: Operating Temperature	Topr	- 20	-	+ 70	°C
保存温度: Storage Temperature	Tstg	- 55	-	+ 80	°C

*1. AC50または60Hzの実効値。
50Hz or 60Hz r.m.s.

*2. フィラメントトランスのセンタータップに印加する。
Ek is applied to the center tap of the filament transformer.

*3. Rd= kΩの抵抗を通して印加する。
Ecd is supplied through " kΩ" resistor to the Gd terminal.

*4. RFd= kΩの抵抗を通して印加する。
EFd is supplied through " kΩ" resistor to the Fd terminal.

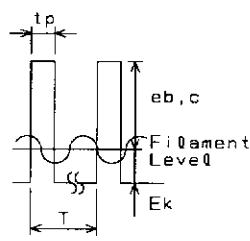
注1. フィラメント電圧は表示管の寿命表示品位に大きな影響を与える要因となりますので、必ず定格範囲内で御使用下さい。
Note1. The filament voltage shall be kept within above rating to maintain the expected life and display quality.

注2. 本規格と異なる使い方をされる場合は、事前に御相談下さい。

Note2. In case of the driving condition differs from this specification, consult to FUTABA for the proper usage.

B1

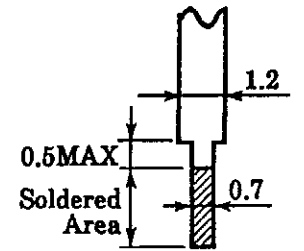
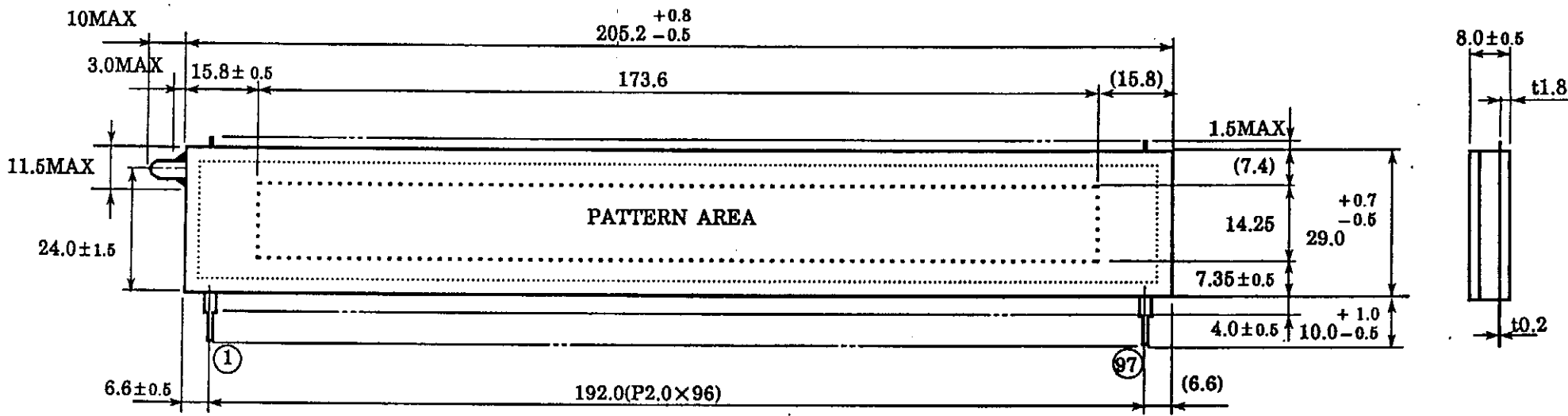
電気的特性 : Electrical Characteristics

Item	Test Condition	Symbol	Min.	Typ.	Max.	Unit
フィラメント電流 Filament Current	$E_f = 7.5 \text{ Vac}$ $e_b = e_c = 0$	I_f	112	125	138	mA
アノード電流 Anode Current	$E_f = 7.5 \text{ Vac}$ $e_c = 42 \text{ Vp-p}$ $e_b(\text{G.}) = 42 \text{ Vp-p}$	$i_b / 16 \sim 166$	-	8.5	17.0	mA
		$i_b /$	-			mA
		$i_b /$	-			mA
		$i_b /$	-			mA
		$i_b /$	-			mA
グリッド電流 Grid Current	*($E_k = 7.5 \text{ Vdc}$) $t_p = 80 \mu\text{s}$ $t_{\text{blank}} = 20 \mu\text{s}$ $D_u = 1/20$	$i_c / 16 \sim 166$	-	9.0	18.0	mA
		$i_c /$	-			mA
		$i_c /$	-			mA
		$i_c /$	-			mA
拡散グリッド電流 Diffusion Grid Current	$E_{cd} = - \text{Vdc}$ $R_d = - \text{k}\Omega$	I_{cd}	-	-	-	mA
輝度 Luminance	$E_{fd} = - \text{Vdc}$ $R_{fd} = - \text{k}\Omega$ 	$L(\text{G.})$ () () () ()	350 (102)	700 (204)	- (-)	cd/m^2 (fL)
		$L(\text{ })$ () () () ()			- (-)	cd/m^2 (fL)
		$L(\text{ })$ () () () ()			- (-)	cd/m^2 (fL)
		$L(\text{ })$ () () () ()			- (-)	cd/m^2 (fL)
		$L(\text{ })$ () () () ()			- (-)	cd/m^2 (fL)
輝度比 Luminance Ratio between Digits		$\frac{L_{\text{max}}}{L_{\text{min}}}$	-	-	2	
グリッド消去電圧 Grid Cut-Off Voltage	$E_f = 7.5 \text{ Vac}$ $E_b = 42 \text{ Vdc}$ $E_c = \text{vary}$	E_{c0}	*(-7.5)	-	-	Vdc
アノード消去電圧 Anode Cut-Off Voltage	$E_f = 7.5 \text{ Vac}$ $D_u = 1/20$ $t_p = 80 \mu\text{s}$ $e_c = 42 \text{ Vp-p}$ $E_b = \text{vary}$	E_{b0}	*(-5.5)	-	-	Vdc

()内は、センタータップを接地した場合である。

*The value in *() is shown for the center tap grounded.

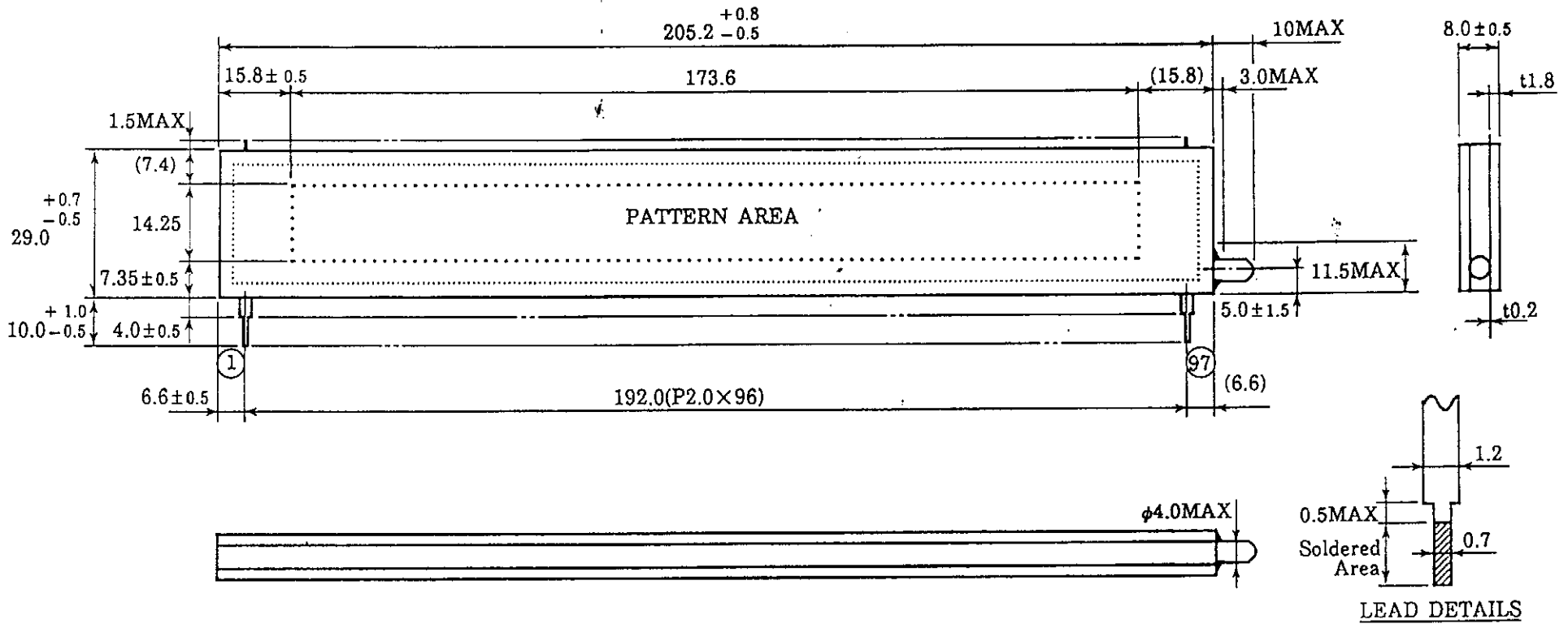
形名 Type No. 16-LY-036/GR/GAK/GK



LEAD DETAILS

PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	
CONNECTION	F 1	F 1	N P	N P	16 G	15 G	14 G	13 G	12 G	11 G	10 G	9 G	8 G	7 G	6 G	5 G	4 G	3 G	2 G	1 G	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	
PIN NO.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97
CONNECTION	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	

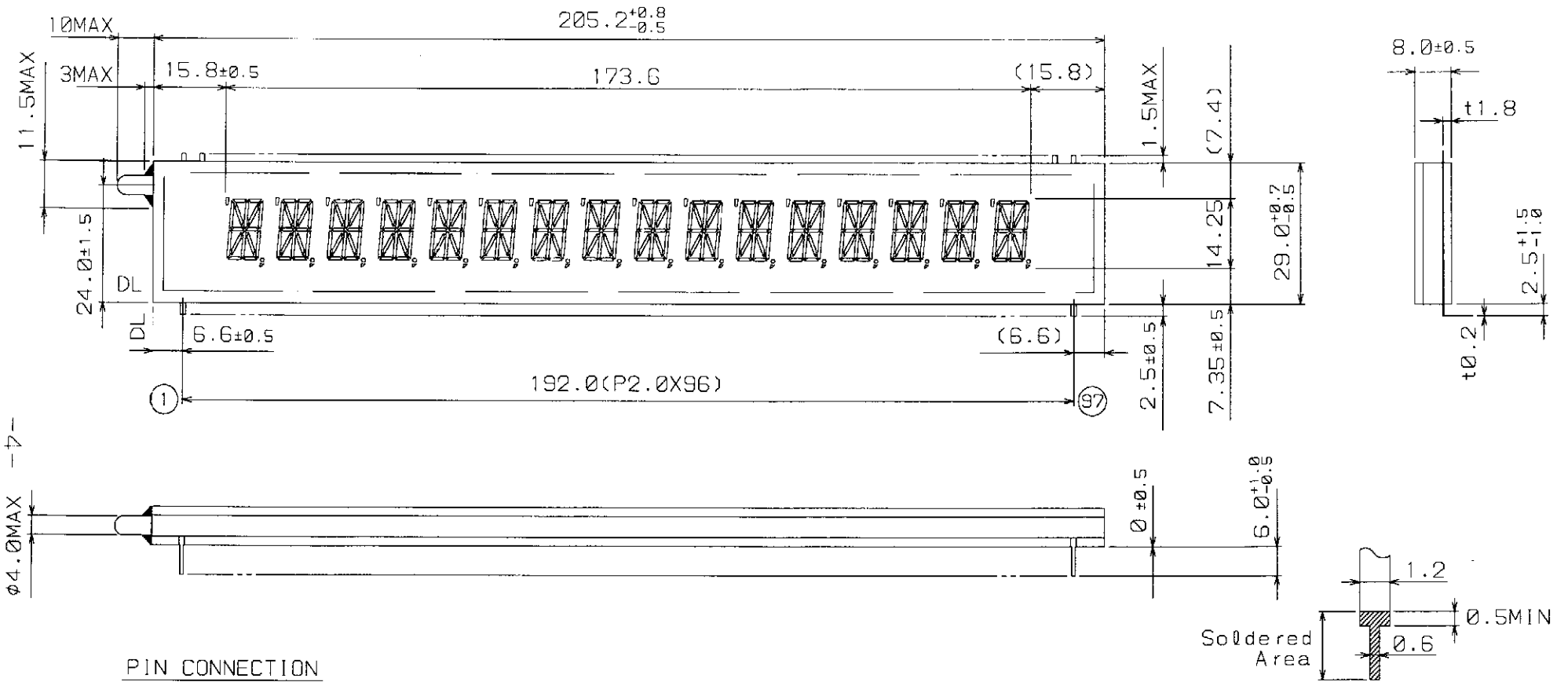


PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48		
CONNECTION	F 1	F 1	N P	N P	16 G	15 G	14 G	13 G	12 G	11 G	10 G	9 G	8 G	7 G	6 G	5 G	4 G	3 G	2 G	1 G	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	
PIN NO.	49	50	51	52	53	54	55	56	57	58	59	60	61	62	63	64	65	66	67	68	69	70	71	72	73	74	75	76	77	78	79	80	81	82	83	84	85	86	87	88	89	90	91	92	93	94	95	96	97	
CONNECTION	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	N P	co m2	a1	a2	j	h	k	b	f	g	m	c	e	r	n	p	d1	d2	Dp	co m1	N P	N P	F 2	F 2

Note 1.)NP-----No pin.
 2.)F1,F2-----Filament
 3.)1G~16G----Grid

16-LY-03GR
 OUTER DIMENSION



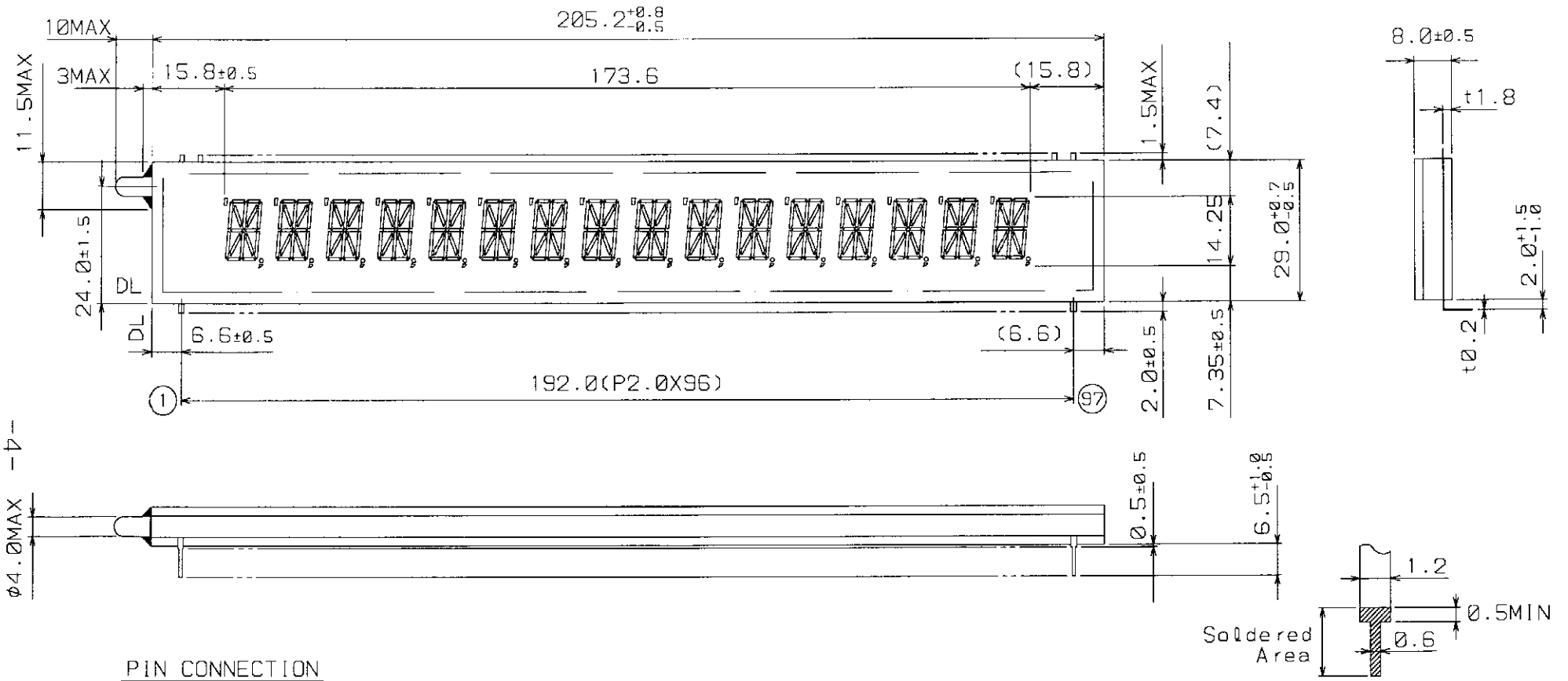
PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	4	5
CONNECTION	F	F	N	N	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	
	1	1	P	P	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	G	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P		

PIN NO.	5	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	7	
CONNECTION	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N
	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	P	

NOTE 1) F1,F2 --- Filament
 2) NP ----- No pin
 3) DL ----- Datum Line
 4) 1G~16G -- Grid

16-LY-03GK
 OUTER DIMENSION



PIN CONNECTION

PIN NO.	1	2	3	4	5	6	7	8	9	0	1	1	1	1	1	1	1	1	1	2	2	2	2	2	2	2	3	3	3	3	3	3	3	3	4	4	4	4	4	4	4	5						
CONNECTION	F	F	N	N	6	5	4	3	2	1	0	9	8	7	6	5	4	3	2	1	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

PIN NO.	5	5	5	5	5	5	5	6	6	6	6	6	6	6	6	7	7	7	7	7	7	7	7	7	8	8	8	8	8	8	8	8	8	8	9	9	9	9	9	9	9	9	9	9	9	9	9			
CONNECTION	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N	N

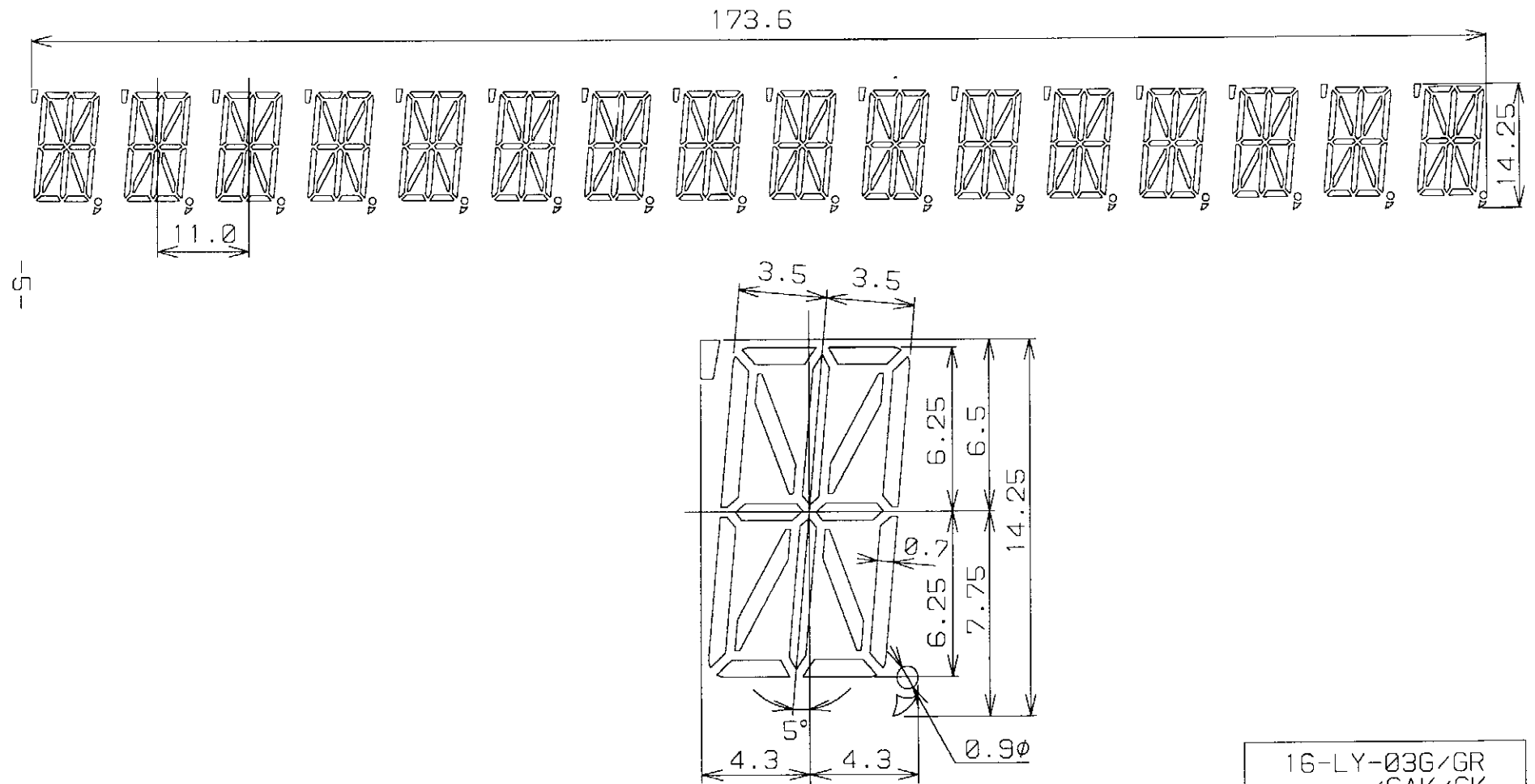
Soldered Area

LEAD DETAILS

NOTE 1) F1,F2 --- Filament
 2) NP ----- No pin
 3) DL ----- Datum Line
 4) 16~16G --- Grid

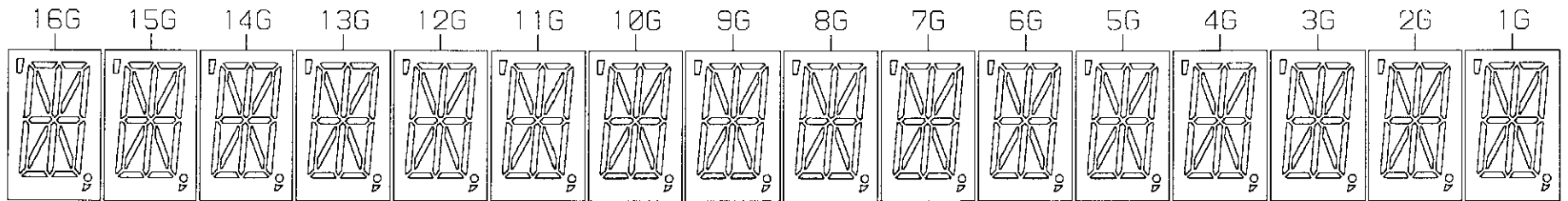
16-LY-03GAK
 OUTER DIMENSION

PATTERN DETAIL

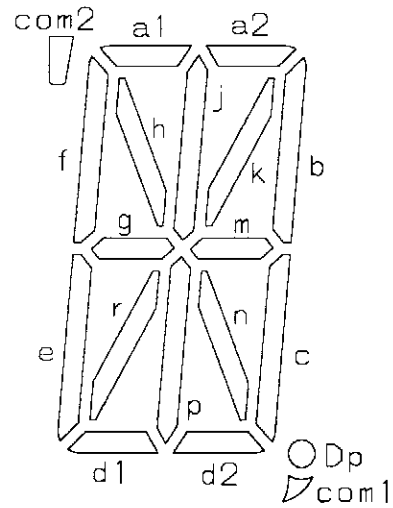


16-LY-03G/GR
/GAK/GK
PATTERN DETAIL

GRID ASSIGNMENT



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16-LY-Ø3G/GR
/GAK/GK
GRID ASSIGNMENT