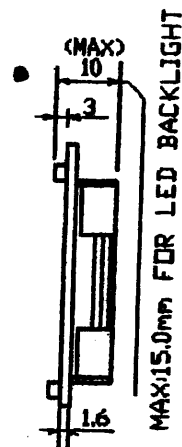
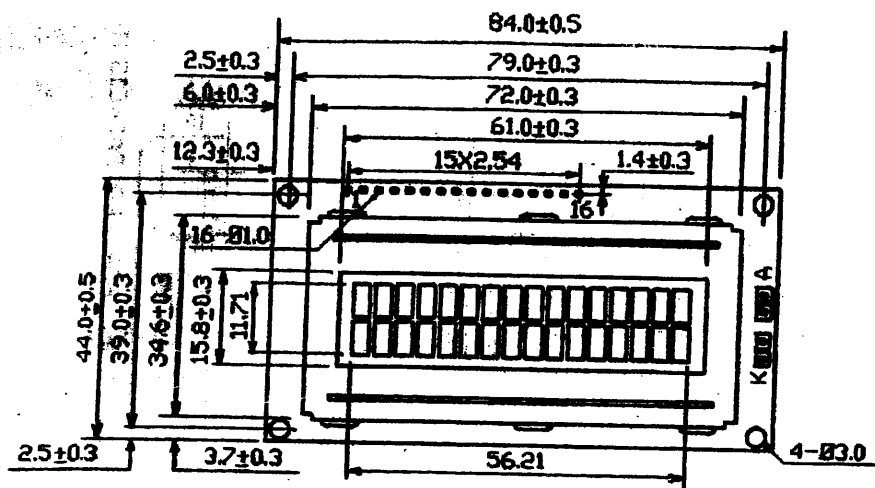


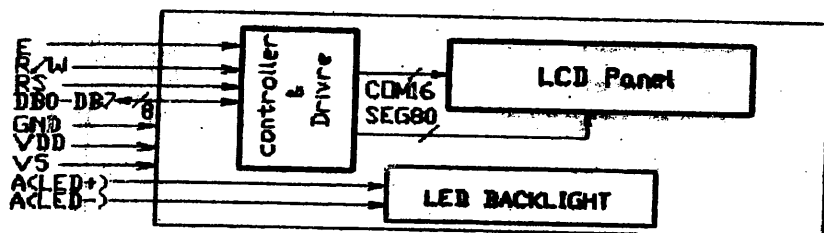
TRI MODS-1535 TN NON B/L

16 X 2 CHARACTER MODULE



142 542
142 554
142 566
142 578
142 580
142 591
142 610
142 638
142 657

Block Diagram & DD RAM Address

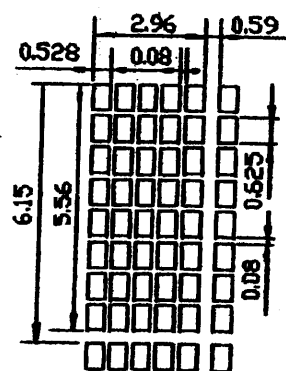


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Line1	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Line2	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F

RAM area : 00H — 27H and 40H — 67H

Note : Please select 2 line display

Display Pattern



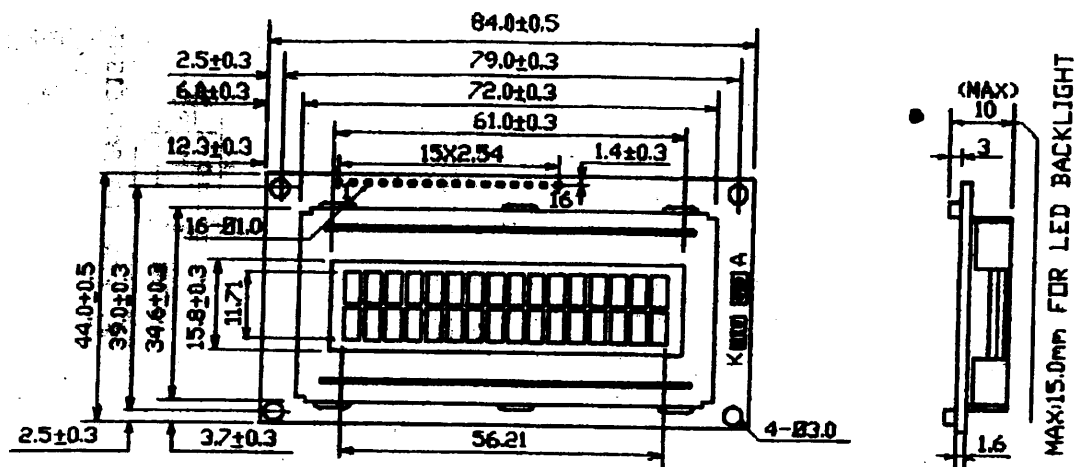
Interface Pin Function

Pin No.	Symbol	Level	Function
1	Vss	—	Power Supply
2	Vdd	—	
3	Vee	—	
4	Rs	H/L	Register select HiData Input LiInstruction Input
5	R/W	H/L	Read/Write select HiData Read(Module-MPU) LiData Write(Module-MPU)
6	E	H/L	Operation start signal for data read/write
7	DB0	H/L	Lower order 4 line data bus with bidirectional three--state. Used for data transfer between the MPU and the module. These four are not used during 4-bit operation.
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	Higher order 4 lines data bus with bidirectional three--state. Used for data transfer between the MPU and the module. DB7 can be used as a BUSY flag
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	ACLED+	—	Supply Voltage for LED Backlighting
16	ACLED-	—	0V(GND)

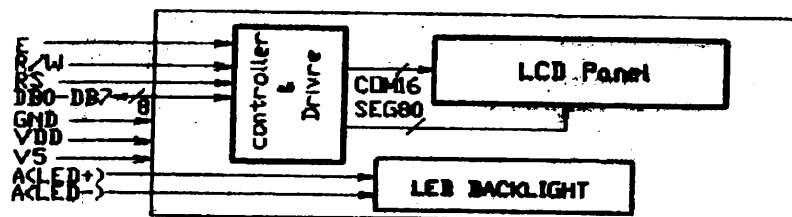
Note : * marked pin are only for LED backlighting type

TRI MODS-1535 TN NON B/L

16 X 2 CHARACTER MODULE



● Block Diagram & DD RAM Address

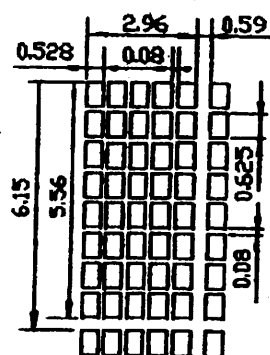


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Line1	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F
Line2	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F

RAM area : 00H — 27H and 40H — 67H

Note : Please select 2 line display

● Display Pattern



● Interface Pin Function

Pin No.	Symbol	Level	Function
1	Vss	—	Power Supply
2	Vdd	—	
3	Vee	—	
4	Rs	H/L	Register select HiData Input LiInstruction Input
5	R/W	H/L	Read/Write select HiData Read(Module → MPU) LiData Write(Module → MPU)
6	E	H/L	Operation start signal for data read/write
7	DB0	H/L	Lower order 4 line data bus with bidirectional three--state. Used for data transfer between the MPU and the module. These four are not used during 4-bit operation.
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	Higher order 4 lines data bus with bidirectional three--state. Used for data transfer between the MPU and the module. DB7 can be used as a BUSY flag
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	AKLED+	—	Supply Voltage for LED Backlighting
16	AKLED-	—	

Note : * marked pin are only for LED backlighting type

142580

294

STANDARD MODULE

TRIDENT DISPLAYS

Sales & Accounts: Purvaywood Business Park
 Monksmyth Lane, Salford, Radhal, Surrey RH1 5JQ
 Tel: +44 (0) 1737 780700 Fax: +44 (0) 1737 771900
 E-mail: sales@trident.uk.co.uk
 Website: http://www.trident.uk.co.uk
 Manufacturing: Invec 2, Wade Road, Basingstoke
 Hampshire RG24 8NF
 Tel: +44 (0) 1737 780700 Fax: +44 (0) 1256 332836

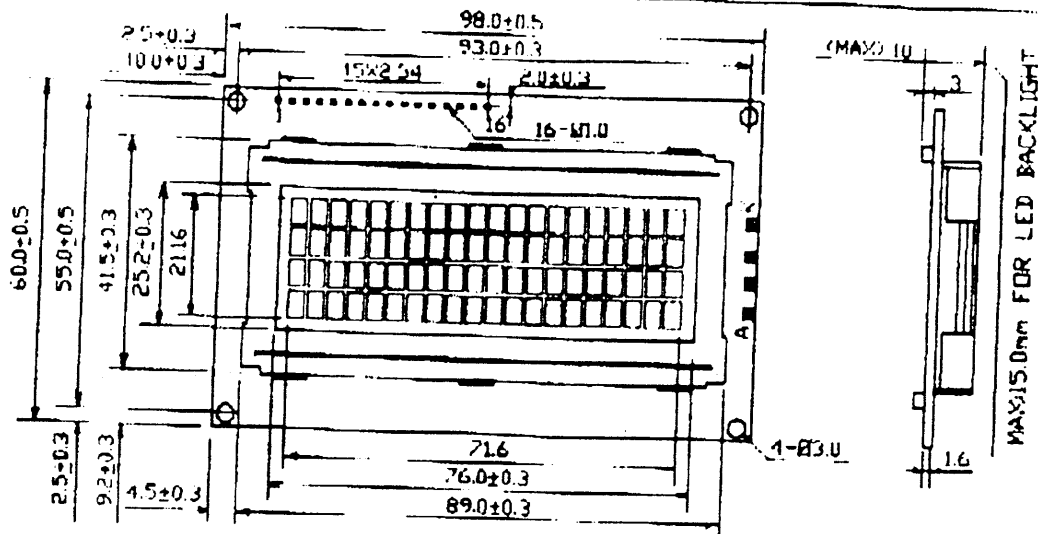


JM 204A

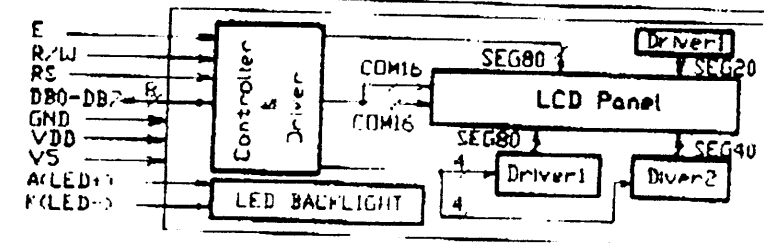
20 Character X 4 Line
 1:16 DUTY, 1:5 BIAS

TRI MODS 1546/7

Module External Dimensions



Block Diagram & DD RAM Address

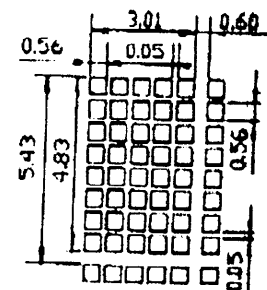


	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20
Line1	00	01	02	03	04	05	06	07	08	09	0A	0B	0C	0D	0E	0F	10	11	12	13
Line2	40	41	42	43	44	45	46	47	48	49	4A	4B	4C	4D	4E	4F	50	51	52	53
Line3	14	15	16	17	18	19	1A	1B	1C	1D	1E	1F	20	21	22	23	24	25	26	27
Line4	54	55	56	57	58	59	5A	5B	5C	5D	5E	5F	60	61	62	63	64	65	66	67

RAM area: 00H - 27H and 40H - 67H

Note: Please select 2 line display

Display Pattern



Interface Pin Function

Pin No.	Symbol	Level	Function
1	V _{ss}		Power Supply
2	V _{dd}		
3	V _{ee}		
4	P _s	H/L	Register select HiData Input LiInstruction Input
5	P _W	H/L	Read/Write select HiData Read(Module-MPU) LiData Write(Module-MPU)
6	E	H/L	Operation start signal for data read/write
7	DB0	H/L	Lower order 4 line data bus with bidirectional three--state. Used for data transfer between the MPU and the module. These four are not used during 4-bit operation.
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	Higher order 4 lines data bus with bidirectional three--state. Used for data transfer between the MPU and the module. DB7 can be used as a BUSY flag
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
*15	ASLED+		Supply Voltage for LED Backlighting 0V(GND)
*16	KLED-		

Note: * marked pin are only for LED backlighting type

314

STANDARD MODULE

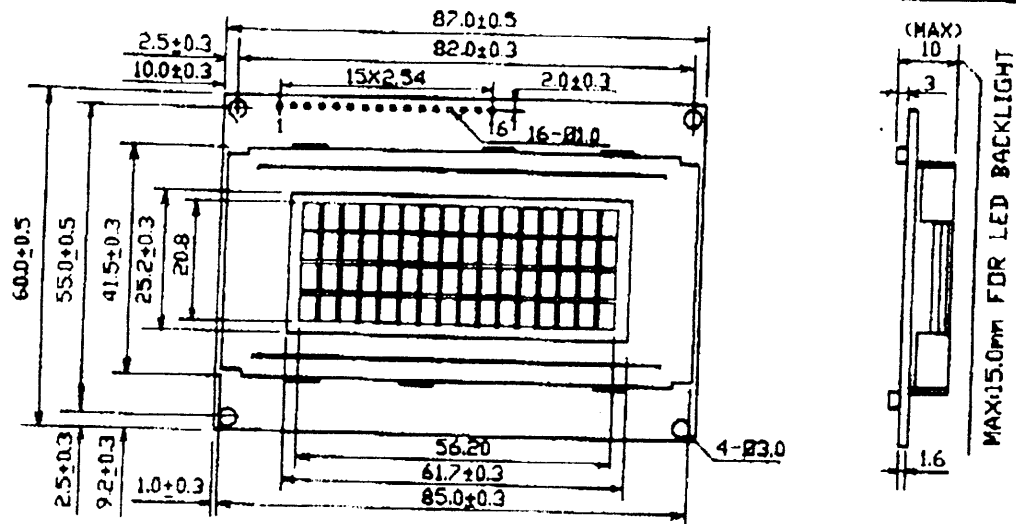
Sales & Accounts Pennywood Business Park
Haverhill Lane, Salfords, Redhill, Surrey RH1 5JQ
Tel: +44 (0) 1737 780790 Fax: +44 (0) 1737 771908
E-mail: sales@pennycare.co.uk
Website: <http://www.0161.0161.co.uk>
Manufacturing Intec z, Wedge Road, Brierleyton
Hampshire RG24 8NE
Tel: +44 (0) 1737 780790 Fax: +44 (0) 1737 771908



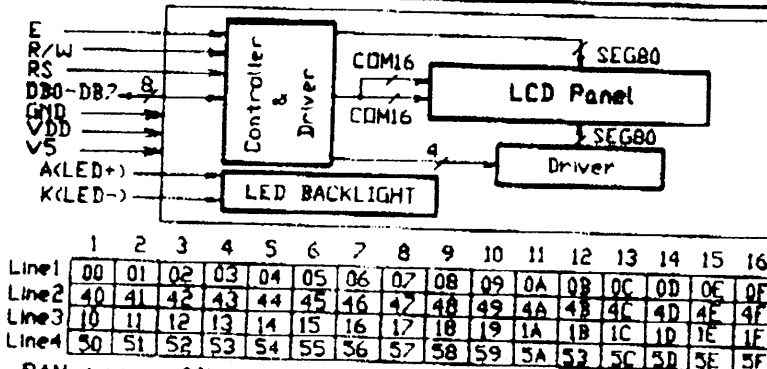
16 Character X 4 Line
1/16 DUTY, 1/5 BIAS

TRI MODS 1539/40/41/42

● Module External Dimensions

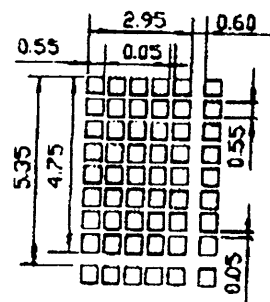


● Back Diagram & DD RAM Address



RAM area : 00H — 27H and 40H — 67H
Note : Please select 2 line display

● Display Pattern



● Interface Pin Function

Pin No.	Symbol	Level	Function
1	Vss	—	Power Supply
2	Vdd	—	
3	Vee	—	
			0V +5V for Liquid Crystal driving
4	Rs	H/L	Register select
			HiData Input LiInstruction Input
5	R/W	H/L	Read/Write select
			HiData Read(Module-MPU) LiData Write(Module-MPU)
6	E	H-H-L	Operation start signal for data read/write
7	DB0	H/L	Lower order 4 line data bus with bidirectional three--state. Used for data transfer between the MPU and the module. These four are not used during 4-bit operation.
8	DB1	H/L	
9	DB2	H/L	
10	DB3	H/L	
11	DB4	H/L	Higher order 4 lines data bus with bidirectional three--state. Used for data transfer between the MPU and the module. DB7 can be used as a BUSY flag
12	DB5	H/L	
13	DB6	H/L	
14	DB7	H/L	
15	AK(LED+)	—	Supply Voltage For LED Backlighting
16	K(LED-)	—	
			0V(GND)

Note : * marked pin are only for LED backlighting type

142 578 ✓
610 ✓
657 ✓

484

TRIDENT DISPLAYS

Sales & Accounts: Perrywood Business Park
Honeybrook Lane, Salford, Greater Manchester, M11 5JQ
Tel: +44 (0) 1797 780790 Fax: +44 (0) 1797 771908
E-mail: sales@trident.co.uk
Website: http://www.tridentdisplays.co.uk
Manufacturing: Intec 2, Wade Road, Basingstoke
Hampshire RG24 0NF
Tel: +44 (0) 1797 780790 Fax: +44 (0) 1256 452836



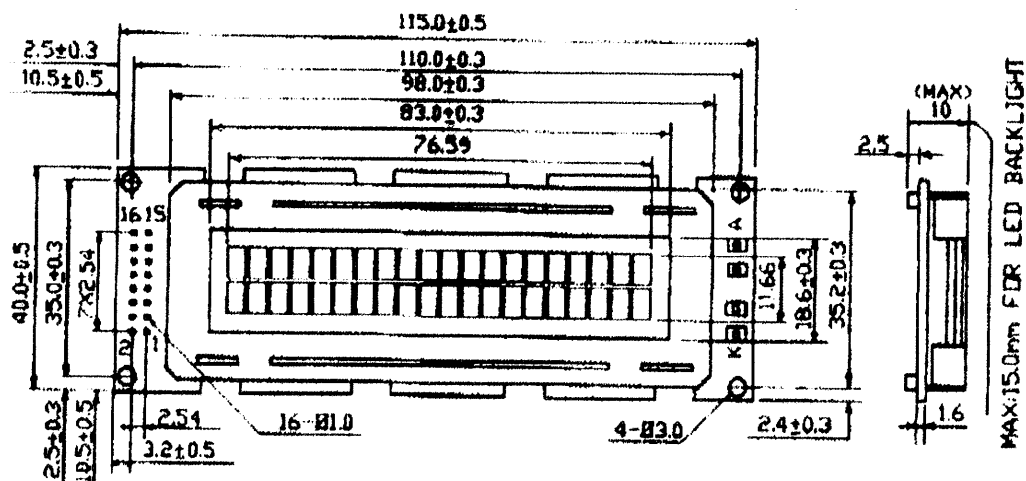
STANDARD MODULE

JM202A

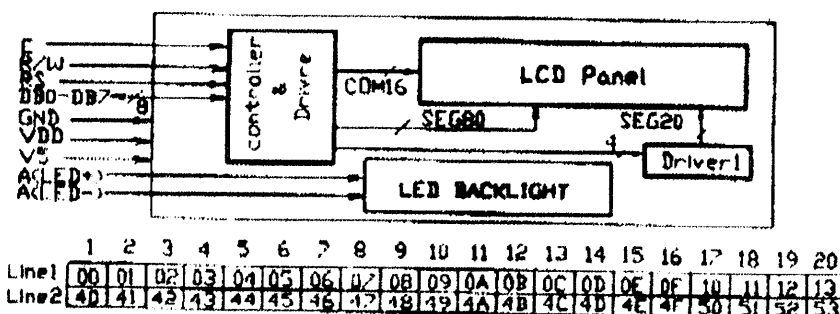
20 Character X 2 Line
1/16 DUTY, 1/5 BIAS

TRI MODS 1543/4/5

Module External Dimensions

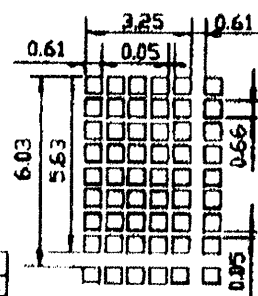


Block Diagram & DD RAM Address



RAM area: 00H — 27H and 40H — 67H
Note: Please select 2 line display

Display Pattern



Interface Pin Function

Pin No.	Symbol	Level	Function	
1	VSS		Power Supply	0V
2	VDD			+5V
3	Vss			For Liquid Crystal driving
4	Rs	H/L	Register select HiData Input LiInstruction Input	
5	R/W	H/L	Read/Write select HiData Read(Module → MPU) LiData Write(Module → MPU)	
6	E	H/L	Operation start signal for data read/write	
7	DB0	H/L	Lower order 4 line data bus with bidirectional three--state. Used for data transfer between the MPU and the module. These four are not used during 4-bit operation.	
8	DB1	H/L		
9	DB2	H/L		
10	DB3	H/L		
11	DB4	H/L	Higher order 4 lines data bus with bidirectional three--state. Used for data transfer between the MPU and the module. DB7 can be used as a BUSY flag	
12	DB5	H/L		
13	DB6	H/L		
14	DB7	H/L		
15	A(LED+)		Supply Voltage for LED Backlighting	
16	V(LED-)		0V(GND)	

Note: * marked pin are only for LED backlighting type

SPECIFICATIONS OF LED BACKLIGHT

LED BACKLIGHT STYLE

MODEL	LED 01		LED02		LED03		LED04					
	Forward Current mA at 4.1V						Overall Size L1 x W x H	Box Size L2 x W	Active Size LE x WE	Number of LEDs *	Forward Current mA at 4.1V	
	Typ	Max	Typ	Max	Typ	Max					Typ *	Max*
MDL(S)-81809	30	40	50	100			73x22.8x5	69x22.8	64x17.8	2x9	90	180
MDL(S)-16166	30	40	60	120			72.5x18.5x3.8	70x18.5	65x13.8	2x10	100	200
MDL(S)-16119	30	40	60	120	180	360	72.5x18.5x3.8	70x18.5	65x13.8	2x10	100	200
MDL(S)-16168			80	160	160	320	104x18x4.8	100x18	96x12	2x32	160	320
MDL(S)-161612			85	110	180	360	140x28.5x3.8	133x28.5	119.4x18.7	2x17	170	340
MDL(S)-161615			120	240	200	400	---	---	---	---	---	---
MDL(S)-16263	30	40					---	---	---	---	---	---
MDL(S)-16265	30	40	50	100			72x20.5X3.8	67x20.5	61x15.8	2x9	90	180
MDL(S)-16265B	30	40	50	100			72x20.5X3.8	67x20.5	61x15.8	2x9	90	180
MDL(S)-16265C	30	40	50	100			72x20.5x3.8	67x20.5	61x15.8	2x9	90	180
MDL(S)-16265BVK	30	40					---	---	---	---	---	---
MDL(S)-162S65	30	40	50	100			72x20.5x3.8	67x20.5	61x15.8	2x9	90	180
MDL(S)-162D65	30	40	50	100			75x21x3.8	70x21	63.5x15.8	2x8	80	160
MDL(S)-16264	30	40	50	100			56.55x19.5x3.5	53.6x19.5	49.6x12	2x7	70	140
MDL(S)-16268			85	110	180	360	123x27.5x5	119x27.5	114.5x23	2x24	240	480
MDL(S)-16268B					160	320	110x28x4.8	106x28	101x23	2x21	210	420
MDL(S)-16268C			80	160	160	320	110x28x4.8	106x28	101x23	2x21	210	420
MDL(S)-16465			60	120	120	240	---	---	---	---	---	---
MDL(S)-20188			100	200	200	400	137x18x5	132x18	124x14	2x18	180	360
MDL(S)-20189			120	240	240	480	163.6x22x4.8	159.6x22	155.6x18	2x34	340	680
MDL(S)-201812			115	150	240	480	166x25.8x5	160x25.8	147x19	2x22	220	440
MDL(S)-201615			150	300	300	600	---	---	---	---	---	--
MDL(S)-20263	30	40					---	---	---	---	---	---
MDL(S)-20265			60	80	140	280	94x24x4	90x24	84x19	2x18	180	360
MDL(S)-20268					200	400	134x28x5	129x28	124x23	3x18	270	540
MDL(S)-20269					240	480	158.6x29x3.8	158.6x29	149x23	3x21	315	630
MDL(S)-202612					225	300	166x42x4.5	160x42	147x36	4x21	420	840
MDL(S)-20464			70	90	120	240	96.5x31.5x3.7	95x31.5	81x26	2x24	240	480
MDL(S)-20464B			60	120	120	240	75x26.6x3.8	73.4x26.6	60x22	3x8	135	270
MDL(S)-20468					200	400	131x47x5	126x47	121x41.5	6x18	540	1080
MDL(S)-204612					225	300	---	---	---	---	---	---
MDL(S)-24166			80	160	160	320	110x18.5x4.5	106x18.5	100x13.8	2x15	150	300
MDL(S)-24119			80	160	160	320	110x18.5x4.5	106x18.5	100x13.8	2x15	150	300
MDL(S)-24265			70	90	140	280	103.5x20.5x4	101x20.5	94x15.8	2x14	140	280
MDL(S)-24269					260	520	175x27.8x3.8	167.8x27.8	160x23.8	3x22	330	660
MDL(S)-402614					420	600	265.5x42.8x5.0	252x42.8	246x36	5x40	800	1200
MDL(S)-40266			115	150	240	480	163.6x22x4.8	159.6x22	155.6x18	2x34	340	680
MDL(S)-40466			130	260	260	520	172x33x5.0	168x33	163x28	2x36	360	720
MDL(S)-404610†					420	600	---	---	---	---	---	---
MDL(S)-404610(N)†					420	600	---	---	---	---	---	---

† at 5.0V with limited resistor

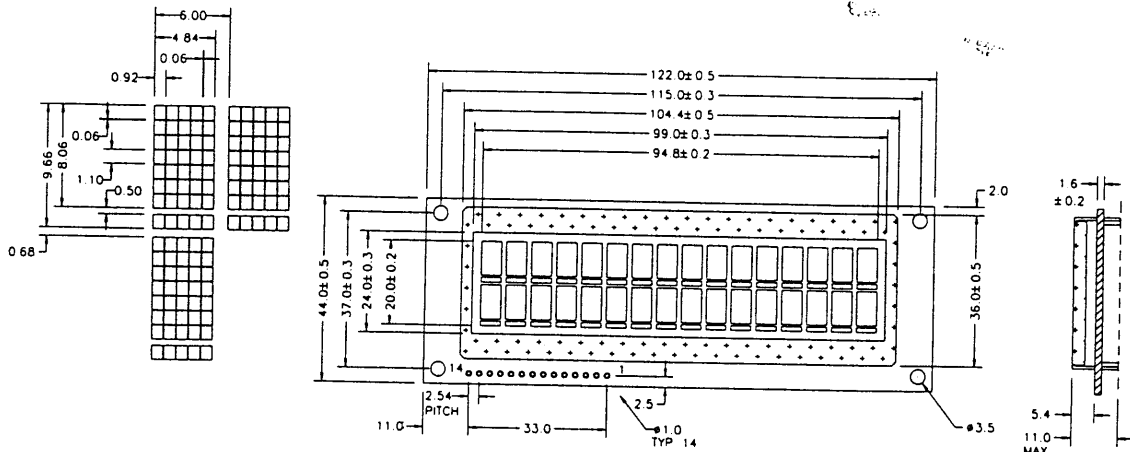
* With minimum order quantity of 500 pieces, reduced number of LEDs can be provided for any of the above models such that total current consumption of LED 04 can be reduced to suit available power.

STANDARD CHARACTER MODULES

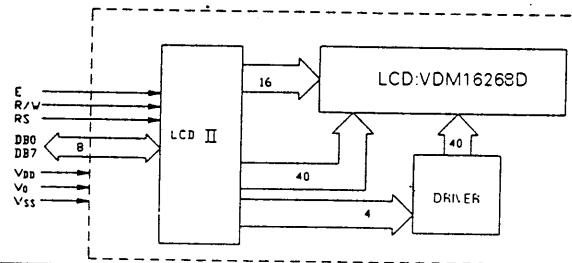
16 CHARACTERS X 2 LINES

CHARACTER SIZE: 4.84W X 8.06H mm (5 X 8 DOTS)

MDL(S) — 16268D



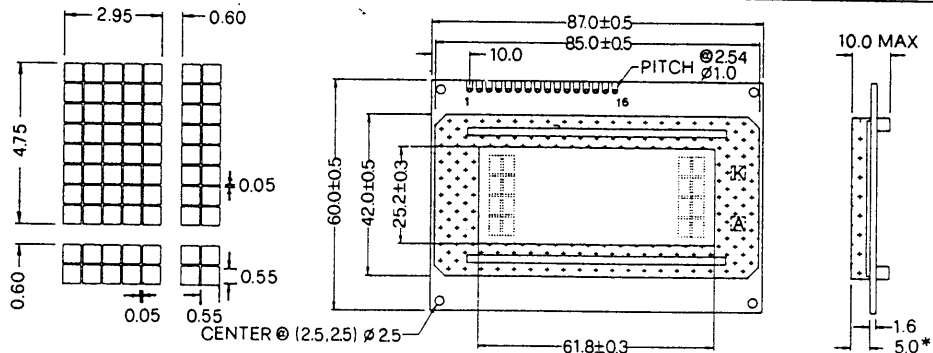
14 PIN CONNECTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14
	GND	VCC	V0	RS	R/W	E	DB0	DB1	DB2	DB3	DB4	DB5	DB6	DB7



16 CHARACTERS X 4 LINES

CHARACTER SIZE: 2.95W X 4.15H mm (5 X 7 DOTS)
2.95W X 4.75H mm (5 X 8 DOTS)

MDL(S)-16465



* LED BACKLIGHT VERSION = 8.0 ± 0.5 mm

14 PIN CONNECTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	A	K
16 PIN CONNECTION	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
	GND	VDD	V0	RS	R/W	E	DB0	DB1	DB2	DB3	DB4	DB5	DB6	DB7	LED(+)	LED(-)

