

PART	QTY	MFG	D/C
1241.6834.1122000	162	Schurter	2011
0-0170376-1	720	Tyco/AMP	2003
0-0172213-2	360	Tyco/AMP	2003
0031.1081 5x20 Type 0G	500	Schurter	2007
0603-5A-220-JAT	3000	AVX	2007
0-828904-1	9	AMP	2010
0902 000 9909	400	Harting	
0903 196 7921	50	HARTING	2003
1104/05	2300	Braunstein	2001
123NQ100 PBF	34	IR	2006
15pin SUB-D connector male	50		2009
15pin SUB-D-housing	100		2008
1812HC102KAT1A-MAT	800	AVX	2003
20ETF06S PBF D2-Pack	9	IR	2007
2322 329 05221	1984	Phoenix	2007
2410RL-05W-B10-C00	1	NMB	2010
282192-1	5	AMP	2010
3.14.001.006	75	Rafi	2003
312.300 300mA 250V 6,3x32	10	Littelfuse	2004
312.375 375mA 250V 6,3x32	10	Littelfuse	2004
3120-F321-P7T1-W01D-16A	315	ETA	2008
4303.2401 5,0x20mm	1	Schurter	2009
493581-1	10	AMP	2010
503-0 4K7 1%	900	Vitrohm/Yageo	2002+
593-0 33R 5% BF0414 33R	200	Vitrohm/Yageo	2006
70 602 118 = M12x0,75	606	Crouzet	2006
7116-1050	20	Yazaki	2009
744 762 256 0,560uH 5% 1008 E	60	Würth	
74ABT245D	8	Texas	
74ABT574AD	14	Texas	
74HC4052D	50	NXP	2007
8100-0797	2820	Sumitomo	2003
8-1437586-8 ADF-08S	17	Tyco	
83 161 318	24	Crouzet	2003
9009 10A 250Vac	50	HEIL/Schurter	2007
9009xaaa0a81+HN14.45a	50	HEIL/Schurter	2007
970 070 151 SW5 M2,5 L=7 C=7	2000	Würth	
9pin SUB-D-housing	50		2008
A32-LC-TT ASTW DIL32 EMF	30	Assmann	2006
AD603AR	28	Analog Devices	
AD7814ARM	24	Analog Devices	2005
AD9617JN	6	Analog Devices	
ADF-08S 8-1437586-8	17	Tyco	
ADP3309ART-3	70	Analog Devices	2004+
AGP09G-NEW/GR	50	Assmann	2008
AGP15G-NEW/GR	100	Assmann	2008
ALD124	3	NAIS-Matsushita	2011
AM26C32CN	50	Texas	2006
AM26LS32ACN	15	AMD	
AM29F040B-90JI	8	AMD	
AM8530H-6PC DIP40	7	AMD	
AMP MODU II 1-215307-5	48	Tyco	2008
AMP MODU II 826467-3	50	Tyco	2008
AMP MODU II 926477-1	50	Tyco	2008
AN87C196KD	12	Intel	1991
ARN 200-05/8	1	TVM	
AT17C128-10PI	2	Atmel	
AT25020A-10PI-2,7	25	Atmel	2005
AT89C2051-24PU	20	Atmel	2007
AT89C51ID2-SLSUM	5	Atmel	2007
B32654-A4155-J	100	Epcos	
B33531-A5122-F	190	EMZ	2002
B33531-A5162-F	175	EMZ	2002
B33531-A5163-F	200	EMZ	2002
B33531-A5202-F	200	EMZ	2002
B33531-A5221-F	200	EMZ	2002
B33531-A5272-F	125	EMZ	2002
B33531-A5362-F	200	EMZ	2002
B33531-A5363-F	165	EMZ	2002
B33531-A5391-F	200	EMZ	2002
B33531-A5392-F	190	EMZ	2002
B33531-A5471-F	65	EMZ	2002
B33531-A5681-F	65	EMZ	2002
B33531-A5752-F	50	EMZ	2001
B33531-A5821-F	165	EMZ	2002
B82442-A1473-K 47uH/340mA SIMID05	2	Epcos	2007
BAS16	20	Infineon	2006

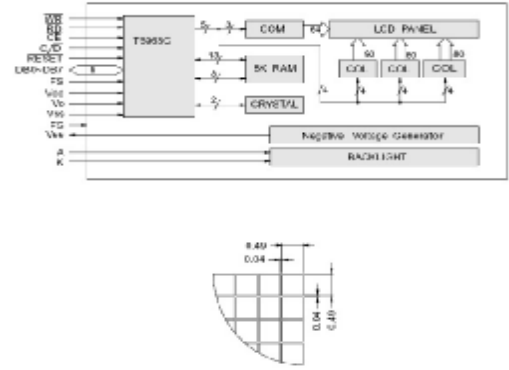
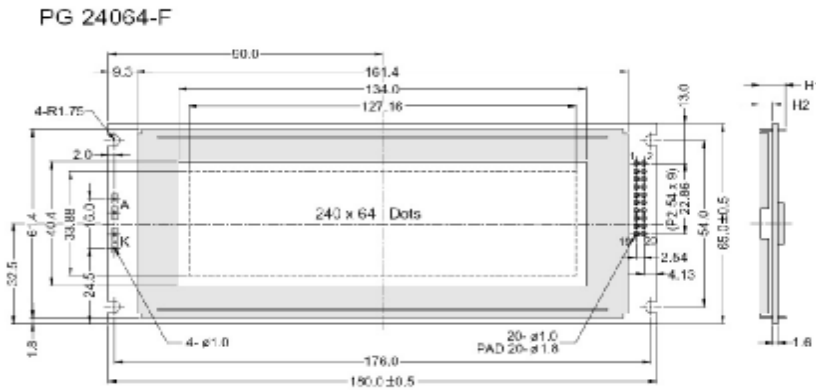
BLM21AG102SN1D	50	Murata	2010
BLM31PG121SN1	2620	Murata	1999
BN460300	2	Spinner	2002
BSS 229	20	Siemens	2002
BUZ50A	20	Infineon	200111
BYD37M	500	PHI	2002
BYD37M	56	PHI	200101
BYD37M	38	PHI	1998
BZG03C36TR	20	Vishay	2007
BZT03-C9V1	500	Philips	199435
CAT10-330J4LF	100	Bourns	2007
CDR125NP-470MC	325	Sumida	2007
CE100F24-2-D	500	ITW Pancon	2007
CE100F24-6-C	400	ITW Pancon	2008
CL21C6R8CBNC	4000	Samsung	2005
CRCW0505 BC 62KOhm TK100 1%	4000	Vishay	2005
CRCW0505 TK100 62K 1% 0805	4000	Vishay	2007
CSTCC4M91G53-R0 4,915	100	Murata	2003
CW2-2409	1	Floeth Electronic	
CY62128ELL-45SXI	5	Cypress	2008
DAC 714	3	Burr-Brown	
DE09P064TXLF	500	FCI	2005
DE09P064TXLF	480	FCI	2006
DG25MS + DKS100	2	Inotec	2001
DIL 32 EMF 32pol RM15,24 A32-LC-TT ASTW	30	Assmann	2006
DS1225AD-85	15	Dallas	
DS12C887A	2	Dallas	
DSP04,8 LCBSBM-5-01A-RT	100	Richco	2008
EC1SM-T-S-50.000M	2	ECLIPTEK	
EC4AW11	2	Cincon	2005
ECA 1CHG222 B 2200uF 16V	70	Panasonic	2000
EGG.0B.303.CLL	1	Lemo	2011
EL4332CS	27	Elantec	
EM6353BY2 SP3B-3,1	20	EM	
ERJ-2RKF3320X	140	Panasonic	
EW24B00NCW EDT=PG24064FRM-ETA-C-Q	121	Powertip	2006
FDS6982	90	Fairchild	2004
FHAC0001ZXJ	1000	Littelfuse	2011
FK214SA-CB	2	Fischer	
FTR-F1CA012V	5	Takamisawa Fujits	
G18068D10-1A-445	15	Scott	
G5NB-1A-24VDC	65	Omron	2011
GBM2550/5	100	Fischer	2003
GMK325F106ZH/T 1210 10uF 35V Y5V	55	Taiyo Yuden	2004
HEF4001UBT	46	Philips	
HY628100BLLG-70	4	Hynix	
HY628100BLLG-70DR	10	Hynix	2001
IDT74FCT3807ASO	85	IDT	
ILD207-T	250	Infineon	
IPS1051LPBF	25	IR	2010
ISO122JP +-0,05% PDIP16	2	Burr-Brown	
K6R1016V1D-T110	216	Samsung	200410
KNR1532 MKP 0,1uF X2 10% 47R 275VAC	1956	Iskra	2006
KSM611B = DTS61N	200	Diptronics	2008
LAN91C111-NU	2	SMSC	2005
LM1117MPX-3,3	100	NSC	
LM329DZ	1	NSC	
LM340T5	20	NSC	
LM7805CT	15	NSC	
LM8261M5/NOPB	90	NSC	2006
LPW470M2GN25M 47uF 400V	10	Jamicon	2005
LQG 15HSR27J 02D	50	Murata	2008
LQH43CN100K03L	13	Murata	2010
LTC1540CS8#PBF	585	Linear Technology	2006
LTC2909ITS8-3,3#PBF	130	Linear Technology	2006
M628128-17E1	4	SGS	
M74HC4078M1R	105	STM	2006
MAX1002CAX	30	Maxim	2002
MAX233ACPP	9	Maxim	
MAX3072EESA+	5	Maxim	2009
MBB0207-25 3K83 0,1%	1000	BC Components	2003
MBB0207-25 54R9 0,1%	500	BC Components	2002
MBB0207-50 43K0 1%	1000	BC Components	2003
MC100LVEL16D	5	ON Semiconductor	
MC100LVELT23D	5	ON Semiconductor	
MC10E016FN	2	Motorola	
MC10E116FN	5	Motorola	
MC33179DG	6	ON Semi	2009

MCP809T-300I/TT	25	Microchip	
MICS-D16 0,8Au RM1,27 GOLD	400	Lumberg	2006
MKFL13262-6-0-202	300	Stocko	2004
MKH5135-1-0-500	200	Stocko	2003
MKS1655-6-0-505	200	Stocko	2003
MKS2655-6-0-505	100	Stocko	2003
MOC3063SR2-M	30	Fairchild	2010
MPSA56D27Z	5	Fairchild	2007
MS184-25	300	Fischer	2003
MS510-15	150	Fischer	2003
MS53-25	100	Fischer	2003
MSM22SSR-GN	172	Schurter	2011
MUP1400 R10K	5	Megatron	2011
MUSB-D111-M0	5	Amphenol Canada	2009
MV152-5-V	100	Euroclamp	2008
NMS1205	38	CD Technologies	2005
NSDU45	2	NSC	
NSL25-4G	300		2008
OP270GP	5	Analog Devices	2000
OPA111BM	2	Burr-Brown	2004
PCA82C252T/N2	10	Philips	1997
PE3336-53	3	Peregrine	2009
PE3512-51	40	Peregrine	200641
PG24064FRM-ETA-C-Q	121	Powertip	2006
PHG.0B.303.CLLD52Z	1	Lemo	2011
PO 593-05T33R	200	Vitrohm	2006
RPE AC CLIP Europlug	7	Phihong	2008
RPM-800CBS	10	Rohm	
RSQ7109A5-2.5	800	Stocko	2011
RSQ7112A5-6	400	Stocko	2011
RT 214024 = 5-1393239-5 Tycc	1	Schrack	2006
S 102 Z053-130+	1	Fischer Connectors	2011
SA3180	7	Bulgin	2010
SAB80186-R refurb	1	Siemens	
SFH655A	5	Vishay	2004
SFT 1030 40uH 3A	4	TDK	
SI4569DY	20	Vishay	
SMA07x0,22	600	Filotex	2007
SMA12x0,22	100	Filotex	2007
SMZJ3799B2	400	Vishay	2004
SN54121J	100	Texas	2002
SN74AHC138D	10	Texas	2006
SN74AHC138DBR SSOP16	5	Texas	2011
SN74LV05ADR	150	Texas	2006
SN74LVC00AD	30	Texas	2006
SN74LVC14AD	25	Texas	2006
SN74LVC32AD	10	Texas	
SN74LVT245BDW	5	Texas	2005
SP211ECA	3	Sipex	
SR155E104MAR	1	AVX	
SR201A332GAA	2390	AVX	2003
SS13-E3	500	Vishay	2011
SS13-E3/61T	200	Vishay	2010
ST2-DC 24V-F	10	Nais	2007
TC554001FL-85	210	Toshiba	1997+
TCS006.8U10A 6,8uF 10V 10%	496	Samsung	2008
TE28F640J3C-115	28	Intel	
TEL 3-4822	5	Traco	2011
TGL 7603/7604	10	VEB RFT	
TIP42C	10	ON Semiconductor	
TLGE1100B	5	Toshiba	
TLHG4201	375	Vishay	2008
TLOU1100T09	5	Toshiba	
TLSU1100T09	5	Toshiba	
TLYU1100T09	5	Toshiba	
TMP68HC11A1T	11	Toshiba	
TMP93CS41DFG(JZ)	50	Toshiba	200942
TN2-5V	1	Matsushita	
TPS75601KTT	30	Texas	2009
TYN625	174	STM	2007
U2402B-A	6	Temic	
U2402B-B	94	Temic	
U5125-2	15	APEM	2009
uPD70F3239M2GJ(A-UEN)-A	15	NEC	200649
VN770K	13	STM	200609
VN808CM-E	10	STM	2010
YL-3213 C7 Outlet to C14 Inlet Plug	7	YUNG LI	2005
Z84C4008PSC	10	Zilog	

LCD Grafik-Module / LCD Graphic Modules

PG 24064 FRM-ETA-C-Q Powertip as an alternate to EW 24B00 NCW EDT Corp.

Characters, Dots or Digits	Module no	Module dimension WxHxD mm	Viewing area WxH mm	Dots size	Package mode	Duty	Controller/ Driver	No B/L	EL	LED	White LED	CCFL
240 x 64	EW24B00	180 x 65 x 14 (187 x 76 CCFL)	133 x 40	0.49	SMT	1/64	T6963C	•	•	•	•	•
240 x 64	PG24064-F	180 x 65 x 13.3	134 x 40.4	0.49	SMT	1/64	T6963C	•	•	•	•	•



PG 24064 FRM-ETA-C-Q

- G Graphic type
- 240 Character per line (for character modules)
- 64 Column dots (for graphic modules)
- F CCFL backlight white
- R Standard (Through hole, cable, connector and etc.)
- M STN negative blue

- TA TOSHIBA LSI
- C Polarizer Transmissive / Normal Temp.(NT):0°C~50°C
- 06:00 Viewing direction

The tolerance unless classified $\pm 0.3\text{mm}$

MECHANICAL SPECIFICATION			
Overall Size	180.0 x 65.0	Module	H2 / H1
View Area	134.0 x 40.4	W / O B/L	4.5 / 8.6
Dot Size	0.49 x 0.49	EL B/L	4.5 / 8.6
Dot Pitch	0.53 x 0.53	LED / CCFL B/L	9.2 / 13.3

PIN ASSIGNMENT		
Pin no.	Symbol	Function
1	FG	Frame ground
2	Vss	Power supply(GND)
3	Vdd	Power supply(+)
4	Vo	Contrast Adjust
5	WR	Data write
6	RD	Data read
7	CE	Chip enable
8	C/D	Command / data select
9	Vee	Negative output
10	RST	Reset
11-18	DB0-DB7	Data bus line
19	FS	Font selection
20	NC	No connection

ABSOLUTE MAXIMUM RATING					
Item	Symbol	Condition	Min.	Max.	Units
Supply for logic voltage	Vdd-Vss	25°C	-0.3	7.0	V
LCD driving supply voltage	Vdd-Vee	25°C	0	22.0	V
Input voltage	Vin	25°C	-0.3	Vdd+0.3	V

ELECTRICAL CHARACTERISTICS									
Item	Symbol	Condition	Min.	Typical	Max.	Units			
Power supply voltage	Vdd-Vss	25°C	4.5	—	5.5	V			
LCD operation voltage	Vop	Top	N	W	N	W	V		
		-20°C	—	14.3	—	14.7	—	15.1	V
		0°C	9.7	—	10.2	—	10.7	—	V
		25°C	8.8	13.2	9.4	13.6	9.9	14	V
		50°C	8.6	—	9.1	—	9.6	—	V
70°C	—	12	—	12.4	—	12.5	V		
LCM current consumption (No B/L)	Idd	Vdd=5V	—	10	—	mA			
Backlight current consumption	LED/edge	VB/L=3.5V	—	80	—	mA			
	LED/array	VB/L=4.2V	—	650	—	mA			