



十速科技股份有限公司
tenx technology inc.

TM57ML40

Package Pin Assignment

Application Note

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tenx technology inc.

Rev.1.0, 2012/08/01

AMENDMENT HISTORY

Version	Date	Description
V1.0	Jul, 2012	New release

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PRODUCT NAME

TM57ML40

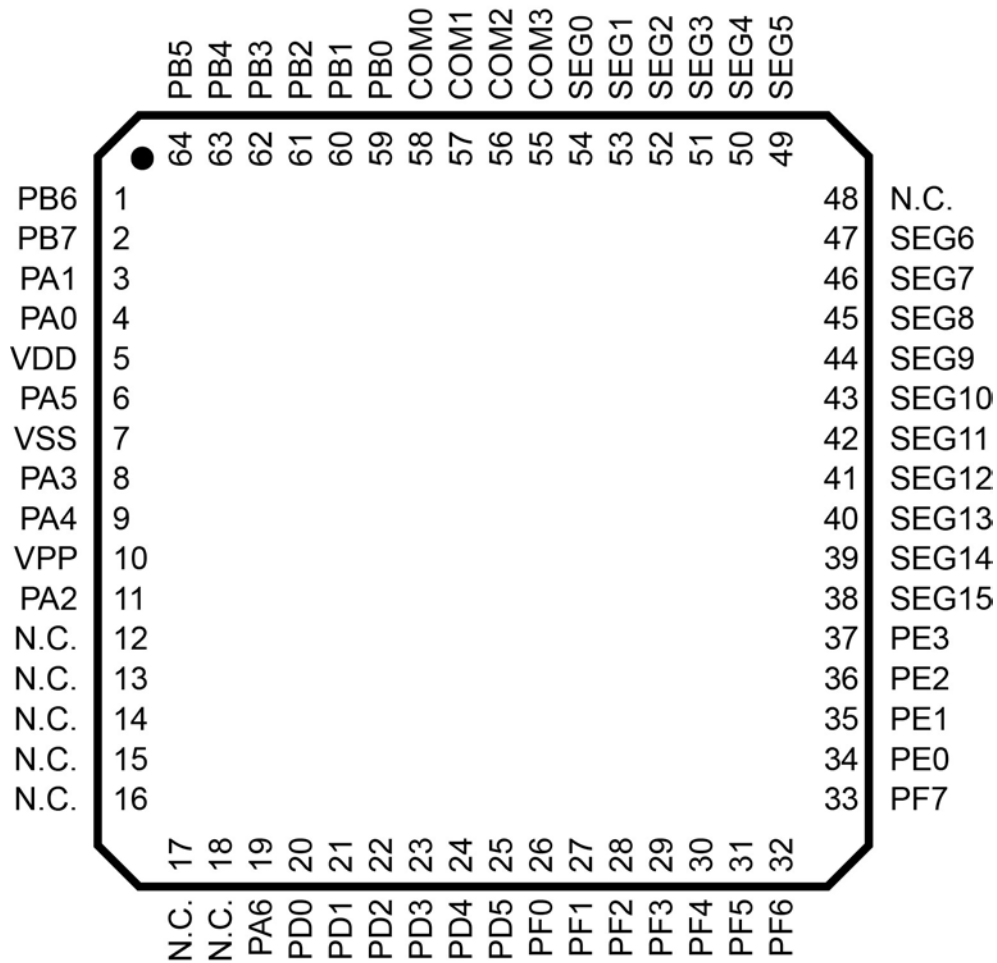
TITLE

Package Pin Assignment

APPLICATION NOTE

1. LQFP-64 Pin Assignment

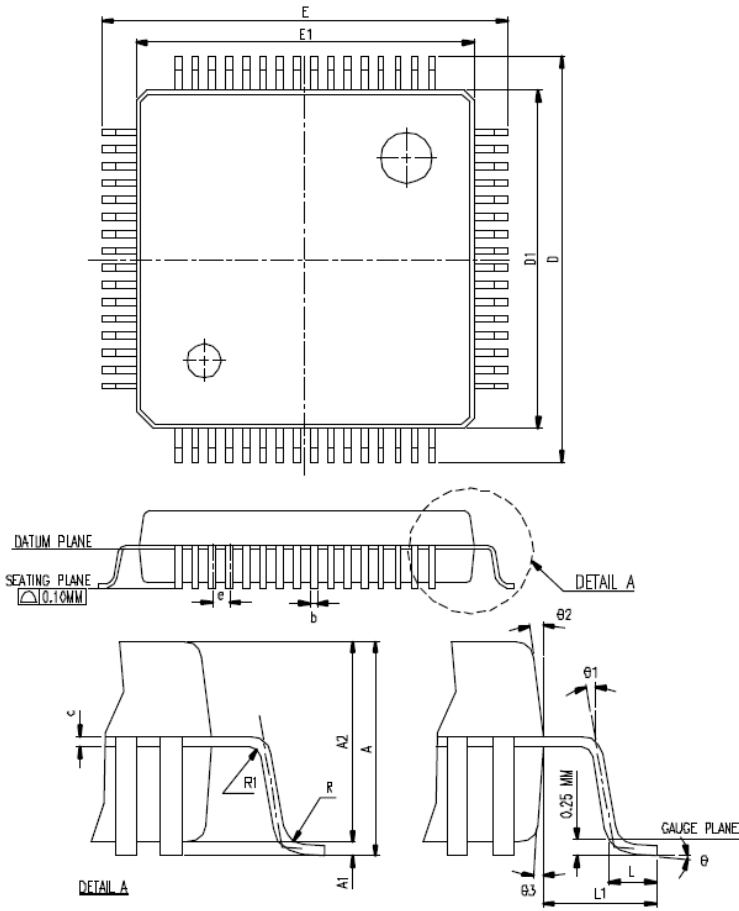
LQFP64



2. LQFP-64 Pin Descriptions

Pin	Pin Name	Pin	Pin Name	Pin	Pin Name	Pin	Pin Name
1	PB6/RFC3/TK6	17	N.C.	33	PF7/SEG20	49	SEG5
2	PB7/CX1/TK7	18	N.C.	34	PE0/SEG19	50	SEG4
3	PA1/INT1/TK8	19	PA6/PWM0	35	PE1/SEG18	51	SEG3
4	PA0/INT0/TK9	20	PD0/PWM1	36	PE2/SEG17	52	SEG2
5	VDD	21	PD1/BUZ	37	PE3/SEG16	53	SEG1
6	PA5/FLT	22	PD2/COM4/SEG31	38	SEG15	54	SEG0
7	VSS	23	PD3/COM5/SEG30	39	SEG14	55	COM3
8	PA3/XO	24	PD4/COM6/SEG29	40	SEG13	56	COM2
9	PA4/XRC/XI	25	PD5/COM7/SEG28	41	SEG12	57	COM1
10	VPP/RSTN	26	PF0/TK11/SEG27	42	SEG11	58	COM0
11	PA2/T0CKI/TK10	27	PF1/TK12/SEG26	43	SEG10	59	PB0/TK0/INT2
12	N.C.	28	PF2/TK13/SEG25	44	SEG9	60	PB1/TK1/INT3/CAPT
13	N.C.	29	PF3/TK14/SEG24	45	SEG8	61	PB2/TK2/CX0
14	N.C.	30	PF4/SEG23	46	SEG7	62	PB3/TK3/RFC0
15	N.C.	31	PF5/SEG22	47	SEG6	63	PB4/TK4/RFC1
16	N.C.	32	PF6/SEG21	48	N.C.	64	PB5/TK5/RFC2

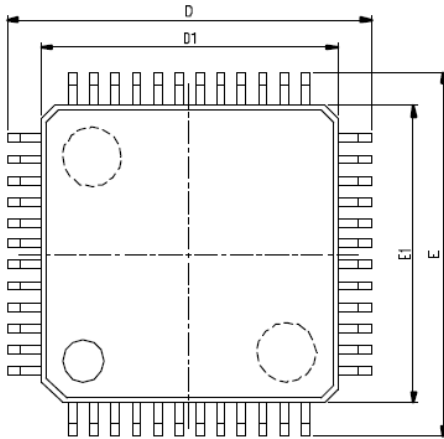
3. LQFP-64 Package Dimension



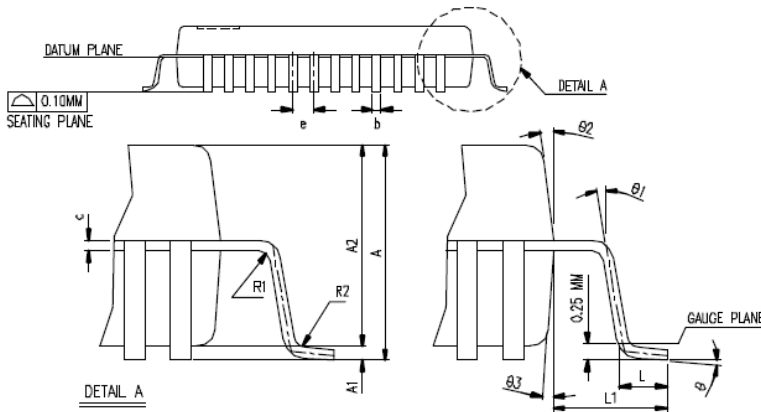
SYMBOL	DIMENSION IN MM			DIMENSION IN INCH		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A			1.60			0.063
A1	0.05		0.15	0.002		0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
b	0.17	0.20	0.23	0.007	0.008	0.009
c	0.09		0.16	0.004		0.006
e	0.50 BASIC			0.020 BASIC		
D	12.00 BASIC			0.472 BASIC		
D1	10.00 BASIC			0.394 BASIC		
E	12.00 BASIC			0.472 BASIC		
E1	10.00 BASIC			0.394 BASIC		
L	0.45	0.60	0.75	0.018	0.024	0.030
L1	1.00 REF.			0.039 REF.		
R1	0.08			0.003		
R	0.08		0.20	0.003		0.008
theta	0	3.5	7	0	3.5	7
theta1	0			0		
theta2	11	12	13	11	12	13
theta3	11	12	13	11	12	13
JEDEC	MS-026 (BCD)					

▲ *NOTES : DIMENSIONS " D1 " AND " E1 " DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 mm PER SIDE.
" D1 " AND " E1 " ARE MAXIMUM PLASTIC BODY SIZE DIMENSIONS INCLUDING MOLD MISMATCH.

4. LQFP-48 Package Dimension



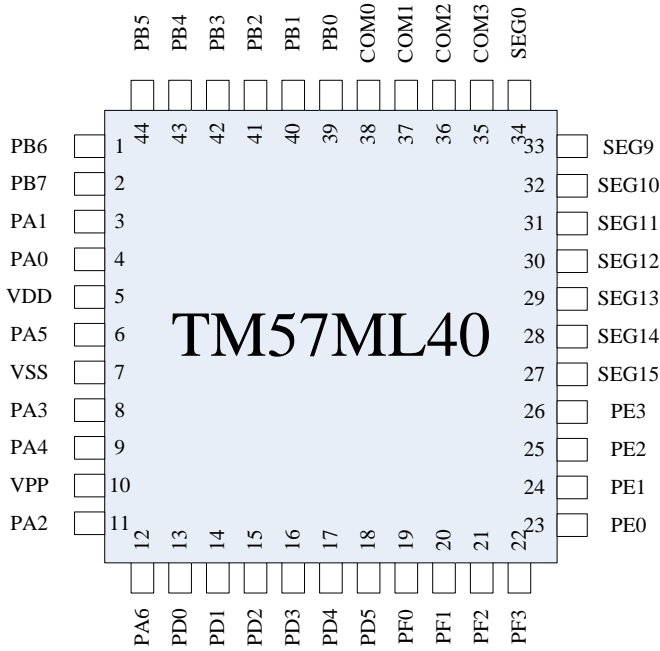
SYMBOL	DIMENSION IN MM			DIMENSION IN INCH		
	MIN.	NOM.	MAX.	MIN.	NOM.	MAX.
A			1.60			0.063
A1	0.05		0.15	0.001		0.006
A2	1.35	1.40	1.45	0.053	0.055	0.057
b	0.17	0.22	0.27	0.007	0.009	0.011
c	0.09		0.20	0.004		0.008
e	0.50 BASIC			0.020 BASIC		
D	9.00 BASIC			0.354 BASIC		
D1	7.00 BASIC			0.276 BASIC		
E	9.00 BASIC			0.354 BASIC		
E1	7.00 BASIC			0.276 BASIC		
L	0.45	0.60	0.75	0.018	0.024	0.030
L1	1.00 REF.			0.039 REF.		
R1	0.08			0.003		
R2	0.08		0.20	0.003		0.008
θ	0°	3.5°	7°	0°	3.5°	7°
θ1	0°			0°		
θ2	11°	12°	13°	11°	12°	13°
θ3	11°	12°	13°	11°	12°	13°
JEDEC	MS-026 (BFC)					



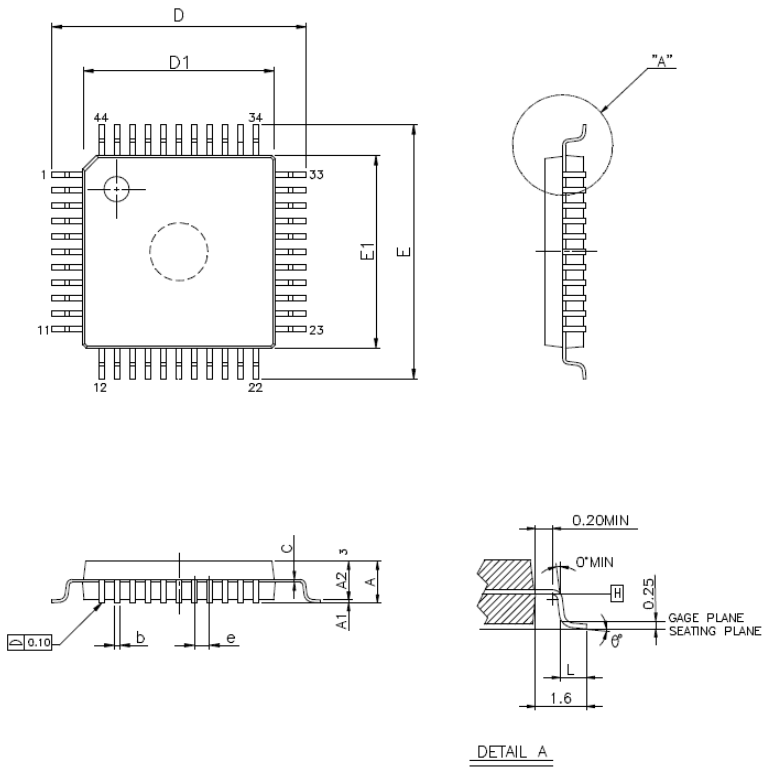
*NOTES : DIMENSIONS " D1 " AND " E1 " DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 mm PER SIDE.
" D1 " AND " E1 " ARE MAXIMUM PLASTIC BODY SIZE DIMENSIONS INCLUDING MOLD MISMATCH.

Note: LQFP-48 pin assignment is currently not available.

5. QFP-44 Pin Assignment



6. QFP-44 Package Dimension



SYMBOLS	MIN.	NOM	MAX.
A	-	-	2.70
A1	0.25	-	0.50
A2	1.80	2.00	2.20
b (w/o plating)	0.25	0.30	0.35
D	13.00	13.20	13.40
D1	9.9	10.00	10.10
E	13.00	13.20	13.40
E1	9.9	10.00	10.10
L	0.75	0.88	0.93
e	0.80 BSC.		
theta	0	-	7
C	0.1	0.15	0.2

UNIT : mm

NOTES:

1. JEDEC OUTLINE: MO-108 AA-1
2. DATUM PLANE [H] IS LOCATED AT THE BOTTOM OF THE MOLD PARTING LINE COINCIDENT WITH WHERE THE LEAD EXITS THE BODY.
3. DIMENSIONS D1 AND E1 DO NOT INCLUDE MOLD PROTRUSION. ALLOWABLE PROTRUSION IS 0.25 mm PER SIDE. DIMENSIONS D1 AND E1 DO INCLUDE MOLD MISMATCH AND ARE DETERMINED AT DATUM PLANE [H].
4. DIMENSION b DOES NOT INCLUDE DAMBAR PROTRUSION.