

Pin Name (1)	240-Pin RQFP	356-Pin FineLine BGA	484-Pin FineLine BGA	599-Pin PGA	600-Pin BGA	672-Pin FineLine BGA
MSEL0 (2)	124	D4	U4	F6	F5	W6
MSEL1 (2)	123	D3	V4	C3	C1	Y6
nSTATUS (2)	60	D24	W19	E43	D32	AA21
nCONFIG (2)	121	D2	T7	B4	D4	V9
DCLK (2)	179	AC5	E5	BE5	AP1	G7
CONF_DONE (2)	2	AC24	F18	BC43	AM32	H20
INIT_DONE (3)	26	T24	K19	AM40	AE32	M21
nCE (2)	178	AC2	E4	BB6	AN2	G6
nCEO (2)	3	AC22	E19	BF44	AP35	G21
nWS (4)	238	AE24	E17	BB40	AR29	G19
nRS (4)	236	AE23	F17	BA37	AM28	H19
nCS (4)	240	AD24	D19	AY38	AL29	F21
CS (4)	239	AD23	D18	BA39	AN29	F20
RDYnBUSY (4)	23	U22	K17	AW47	AG35	M19
CLKUSR (4)	11	AA24	G18	AY42	AM34	J20
DATA7 (4)	190	AF4	E8	BD14	AM13	G10
DATA6 (4)	188	AD8	G7	BA17	AR12	J9
DATA5 (4)	186	AE5	D7	BB16	AN12	F9
DATA4 (4)	185	AD6	E7	BF12	AP11	G9
DATA3 (4)	183	AF2	F6	BG11	AM11	H8
DATA2 (4)	182	AD5	D5	BG9	AR10	F7
DATA1 (4)	181	AD4	E6	BF10	AN10	G8
DATA0 (2), (5)	180	AD3	D4	BC5	AM4	F6
TDI (2)	177	AC3	F5	BF4	AN1	H7
TDO (2)	4	AC23	F19	BB42	AN34	H21
TCK (2)	1	AD25	E18	BE43	AL31	G20
TMS (2)	58	D22	U18	F42	C35	W20
TRST (2)	59	D23	V19	B46	C34	Y21
Dedicated Inputs	90, 92, 210, 212	A13, B14, AF14, AE13	E12, H11, R12, V11	B24, C25, BG25, BG23	C18, D18, AM18, AN18	Y13, U14, G14, K13
Dedicated Clock Pins	91, 211	A14, AF13	D12, P11	BF24, A25	AL18, E18	T13, F14
GCLK1 (6)	91	A14	P11	—	E18	T13
Lock (7)	73	C18	U15	—	A23	W17
DEV_CLRn (3)	209	AD13	G11	BE23	AR17	J13
DEV_OE (3)	213	AE14	F12	BC25	AR19	H14
VCCINT (2.5 V)	5, 20, 27, 40, 47, 76, 96, 122, 130, 139, 150, 159, 170, 187, 225	A1, A26, C26, D5, F1, H22, J1, M26, N1, T26, U5, AA1, AD26, AF1, AF26	C11, C15, H14, J8, J10, J12, J15, L9, L10, L13, M10, M13, M14, N12, P8, P10, P15, R14, V5, W21, Y8, AA12	A3, A45, C1, C11, C19, C29, C37, C47, E5, G25, L3, L45, W3, W45, AJ3, AJ45, AU3, AU45, BE1, BE11, BE19, BE29, BE37, BE47, BG3, BG45	A11, A19, B1, D24, E2, F31, F35, H1, K32, M2, N34, P5, T35, U3, V32, Y2, AA33, AB5, AD35, AE4, AF32, AG5, AK31, AK35, AL3, AP24, AR11, AR18	E13, E17, H2, H25, K16, L10, L12, L14, L17, M2, M25, N11, N12, N15, P12, P15, P16, R14, T2, T10, T12, T17, T25, U16, Y7, AA23, AB10, AC14

Pin Name (1)	240-Pin RQFP	356-Pin FineLine BGA	484-Pin FineLine BGA	599-Pin PGA	600-Pin BGA	672-Pin FineLine BGA
VCCIO (2.5 or 3.3 V)	16, 37, 57, 77, 112, 140, 160, 189, 205, 224	A7, A23, B4, C15, D25, F4, H24, K5, M23, P2, T25, V2, W22, AB1, AC25, AD18, AF3, AF7, AF16	A6, A13, B5, E1, G1, G15, H9, H20, J11, J13, K9, K11, K14, K20, L14, M9, N3, N9, N11, N14, N20, P13, R1, R9, T3, T15, T22, V22, AB13	D24, E9, E15, E21, E27, E33, E39, G7, G41, J5, J43, R5, R43, AA5, AA43, AD4, AD44, AG5, AG43, AN5, AN43, AW5, AW43, BA7, BA41, BC9, BC15, BC21, BC27, BC33, BC39, BD24	C8, E12, C15, A20, C23, A27, AM26, AR23, AM19, AN15, AL12, AN8, C2, C3, C4, D5, E5, C33, C32, D31, E31, AL5, AM5, AN4, AN3, AM31, AN32, AN33, AP34	C8, C15, D7, G3, J3, J17, K11, K22, L13, L15, M11, M13, M16, M22, N16, P11, R5, R11, R13, R16, R22, T15, U3, U11, V5, V17, V24, Y2, Y24, AA26, AD15
VCC_CKCLK (8)	89	C14	P12	–	B18	T14
GNDINT	10, 22, 32, 42, 52, 69, 85, 104, 125, 135, 145, 155, 165, 176, 197, 216, 232	A2, A10, A20, B1, B22, B25, B26, C2, C9, C13, C25, H23, J26, K1, M1, N26, R1, R26, T1, U26, W1, AD2, AD14, AD20, AE1, AE2, AE7, AE25, AE26, AF11, AF19, AF25	A1, A8, A22, B1, B2, B17, B21, B22, C2, C21, E21, G3, G21, H2, H8, H15, J9, J14, J20, K3, K10, K12, K13, L11, L12, M11, M12, M20, N10, N13, P9, P14, R8, R15, R22, T1, V3, W20, Y1, Y2, Y3, Y21, Y22, AA1, AA6, AA22, AB11, AB16	A47, B2, C13, C21, C27, C35, C45, D4, G23, N3, N45, AA3, AA45, AG3, AG45, AR3, AR45, BD44, BE3, BE13, BE21, BE27, BE35, BE45, BG1, BG47	A1, A2, A3, A4, A5, A31, A32, A33, A34, A35, B2, B3, B4, B5, B6, B31, B32, B33, B34, B35, C5, C6, D6, E6, C30, C31, D30, E30, AL6, AL30, AM6, AM30, AN5, AN6, AN30, AN31, AN35, AP2, AP3, AP4, AP5, AP6, AP30, AP31, AP32, AP33, AR1, AR2, AR3, AR4, AR5, AR30, AR31, AR32, AR33, AR34, AR35	A2, A25, B2, B25, C3, C10, C24, D3, D4, D19, D23, D24, E4, E23, G23, J5, J23, K4, K10, K17, L11, L16, L22, M5, M12, M14, M15, N13, N14, P13, P14, P22, R12, R15, T11, T16, U10, U17, U24, V3, Y5, AA22, AB3, AB4, AB5, AB23, AB24, AC3, AC8, AC24, AD13, AD18, AE2, AE25, AF2, AF25

Pin Name (1)	240-Pin RQFP	356-Pin FineLine BGA	484-Pin FineLine BGA	599-Pin PGA	600-Pin BGA	672-Pin FineLine BGA
GNDIO	—	—	—	E7, E13, E19, E29, E35, E41, F24, G5, G43, H40, N5, N43, W5, W43, AD6, AD42, AJ5, AJ43, AR5, AR43, AY8, AY40, BA5, BA43, BB24, BC7, BC13, BC19, BC29, BC35, BC41	—	—
GND_CKCLK (8)	93	B13	W11	—	A18	AA13
No Connect						A4, A5, A6, A10, A11, A12, A13, A14, A15, A16, A17, A18, A19, A20, A21, A22, A23, A24, B4, B5, B6, B7, B8, B9, B10, B11, B12, B13, B16, B19, B20, B21, B22, B23, B24, C1, AE4, AE5, AE6, AE7, AE8, AE9, AE10, AE11, AE12, AE14, AE15, AE16, AE17, AE19, AE20, AE21, AE22, AE23, AF4, AF5, AF6, AF7, AF8, AF9, AF10, AF12, AF13, AF14, AF15, AF16, AF18, AF20, AF21, AF23, AF24
Total User I/O Pins (9)	182	274	369	470	470	470

Notes:

- (1) All pins that are not listed are user I/O pins.
- (2) This pin is a dedicated pin; it is not available as a user I/O pin.
- (3) This pin can be used as a user I/O pin if it is not used for its device-wide or configuration function.
- (4) This pin can be used as a user I/O pin after configuration.
- (5) This pin is tri-stated in user mode.
- (6) This pin drives the ClockLock and ClockBoost circuitry.
- (7) This pin shows the status of the ClockLock and ClockBoost circuitry. When the ClockLock and ClockBoost circuitry is locked to the incoming clock and generates an internal clock, LOCK is driven high. LOCK remains high if a periodic clock stops clocking. The LOCK function is optional; if the LOCK output is not used, this pin is a user I/O pin.
- (8) This pin is the power or ground for the ClockLock and ClockBoost circuitry. To ensure noise resistance, the power and ground supply to the Clock Lock and Clock Boost circuitry should be isolated from the power and ground to the rest of the device. If the ClockLock or ClockBoost circuitry is not used, this power or ground pin should be connected to VCCINT or GNDINT, respectively.
- (9) The user I/O pin count includes dedicated inputs, dedicated clock inputs, and all I/O pins.

Copyright © 1995, 1996, 1997, 1998, 1999 Altera Corporation, 101 Innovation Drive,
San Jose, CA 95134, USA, all rights reserved.

By accessing this information, you agree to be bound by the terms of Altera's
Legal Notice.