Table 3-2. Data Movement Operation Format

Instruction	Operand Syntax	Operand Size	Operation
EXG	Rn, Rn	32	Rn ← → Rn
FMOVE	FPm,FPn <ea>,FPn FPm,<ea> <ea>,FPcr FPcr,<ea>	X B, W, L, S, D, X, P B, W, L, S, D, X, P 32 32	Source → Destination
FSMOVE, FDMOVE	FPm,FPn <ea>,FPn	X B, W, L, S, D, X	Source → Destination; round destination to single or double precision.
FMOVEM	<ea>,<list>[1] <ea>,Dn <list>[1],<ea> Dn,<ea>	32, X X 32, X X	Listed Registers → Destination Source → Listed Registers
LEA	<ea>,An	32	<ea> → An
LINK	An,#<d>	16, 32	SP – 4 → SP; An → (SP); SP → An, SP + D → SP
MOVE MOVE16 MOVEA	<ea>,<ea> <ea>,<ea> <ea>,An	8, 16, 32 16 bytes 16, 32 → 32	Source → Destination Aligned 16-Byte Block → Destination
MOVEM	list,<ea> <ea>,list	16, 32 16, 32 → 32	Listed Registers → Destination Source → Listed Registers
MOVEP	Dn, (d_{16},An) (d_{16},An),Dn	16, 32	Dn 31–24 → (An + d_n); Dn 23–16 → (An + d_n + 2); Dn 15–8 → (An + d_n + 4); Dn 7–0 → (An + d_n + 6) (An + d_n) → Dn 31–24; (An + d_n + 2) → Dn 23–16; (An + d_n + 4) → Dn 15–8; (An + d_n + 6) → Dn 7–0
MOVEQ	#<data>,Dn	8 → 32	Immediate Data → Destination
PEA	<ea>	32	SP – 4 → SP; <ea> → (SP)
UNLK	An	32	An → SP; (SP) → An; SP + 4 → SP

NOTE: A register list includes any combination of the eight floating-point data registers or any combination of three control registers (FPCR, FPSR, and FPIAR). If a register list mask resides in a data register, only floating-point data registers may be specified.

3.1.2 Integer Arithmetic Instructions

The integer arithmetic operations include four basic operations: ADD, SUB, MUL, and DIV. They also include CMP, CMPM, CMP2, CLR, and NEG. The instruction set includes ADD, CMP, and SUB instructions for both address and data operations with all operand sizes valid for data operations. Address operands consist of 16 or 32 bits. The CLR and NEG instructions apply to all sizes of data operands. Signed and unsigned MUL and DIV instructions include:

- Word multiply to produce a long-word product.
- Long-word multiply to produce a long-word or quad-word product.
- Long word divided by a word divisor (word quotient and word remainder).
- Long word or quad word divided by a long-word divisor (long-word quotient and long-word remainder).