

ABSOLUTE MAXIMUM RATINGS

Drain-Source voltage, V_{DS} _____ 10.6V
 Gate-Source voltage, V_{GS} _____ 10.6V
 Power dissipation _____ 500 mW
 Operating temperature range PA, SA, PC, SC package _____ 0°C to +70°C
 Storage temperature range _____ -65°C to +150°C
 Lead temperature, 10 seconds _____ +260°C

OPERATING ELECTRICAL CHARACTERISTICS

V+ = +5V (or open) V- = GND $T_A = 25^\circ\text{C}$ unless otherwise specified

CAUTION: ESD Sensitive Device. Use static control procedures in ESD controlled environment.

| Parameter | Symbol | ALD110802 / ALD110902 | | | Unit | Test Conditions |
|-----------------------------------------------|------------------------|-----------------------|---------------------|----------|------------------------------|----------------------------------------------------------------------------------------------|
| | | Min | Typ | Max | | |
| Gate Threshold Voltage | $V_{GS(th)}$ | 0.18 | 0.20 | 0.22 | V | $I_{DS} = 1\mu\text{A}$ $V_{DS} = 0.1\text{V}$ |
| Offset Voltage $V_{GS(th)1} - V_{GS(th)2}$ | V_{OS} | | 2 | 10 | mV | |
| Offset Voltage Tempco | $TC \Delta V_{OS}$ | | 5 | | $\mu\text{V}/^\circ\text{C}$ | $V_{DS1} = V_{DS2}$ |
| Gate Threshold Voltage Tempco | $TC \Delta V_{GS(th)}$ | | -1.7 0.0 +1.6 | | mV/ $^\circ\text{C}$ | $I_D = 1\mu\text{A}$ $I_D = 20\mu\text{A}, V_{DS} = 0.1\text{V}$ $I_D = 40\mu\text{A}$ |
| On Drain Current | $I_{DS(ON)}$ | | 12.0 3.0 | | mA | $V_{GS} = +9.7\text{V}$ $V_{GS} = +4.2\text{V}$ $V_{DS} = +5\text{V}$ |
| Forward Transconductance | G_{FS} | | 1.4 | | mmho | $V_{GS} = +4.2\text{V}$ $V_{DS} = +9.2\text{V}$ |
| Transconductance Mismatch | ΔG_{FS} | | 1.8 | | % | |
| Output Conductance | G_{OS} | | 68 | | μmho | $V_{GS} = +4.2\text{V}$ $V_{DS} = +9.2\text{V}$ |
| Drain Source On Resistance | $R_{DS(ON)}$ | | 500 | | Ω | $V_{DS} = 0.1\text{V}$ $V_{GS} = +4.2\text{V}$ |
| Drain Source On Resistance Mismatch | $\Delta R_{DS(ON)}$ | | 0.5 | | % | |
| Drain Source Breakdown Voltage | BV_{DSX} | | 10 | | V | $I_{DS} = 1.0\mu\text{A}$ $V_{GS} = -0.8\text{V}$ |
| Drain Source Leakage Current ¹ | $I_{DS(OFF)}$ | | 10 | 100 4 | pA nA | $V_{GS} = -0.8\text{V}$ $V_{DS} = 10\text{V}, T_A = 125^\circ\text{C}$ |
| Gate Leakage Current ¹ | I_{GSS} | | 3 | 30 1 | pA nA | $V_{DS} = 0\text{V}, V_{GS} = 10\text{V}$ $T_A = 125^\circ\text{C}$ |
| Input Capacitance | C_{ISS} | | 2.5 | | pF | |
| Transfer Reverse Capacitance | C_{RSS} | | 0.1 | | pF | |
| Turn-on Delay Time | t_{on} | | 10 | | ns | $V^+ = 5\text{V}, R_L = 5\text{K}\Omega$ |
| Turn-off Delay Time | t_{off} | | 10 | | ns | $V^+ = 5\text{V}, R_L = 5\text{K}\Omega$ |
| Crosstalk | | | 60 | | dB | $f = 100\text{KHz}$ |

Notes: ¹ Consists of junction leakage currents