

LINEAR SYSTEMS

Twenty-Five Years Of Quality Through Innovation

LS627

PHOTO FET
LIGHT SENSITIVE JFET

FEATURES

DIRECT REPLACEMENT FOR CRYSTALONICS FF627

FLAT GLASS TOP FOR EXTERNAL OPTICS

ULTRA HIGH SENSITIVITY

ABSOLUTE MAXIMUM RATINGS¹

@ 25 °C (unless otherwise stated)

Maximum Temperatures

Storage Temperature -65 to +200 °C

Operating Junction Temperature -55 to +165 °C

Maximum Power Dissipation

Continuous Power Dissipation, T_A=25°C 400mW

Maximum Currents

Drain to Source 50mA

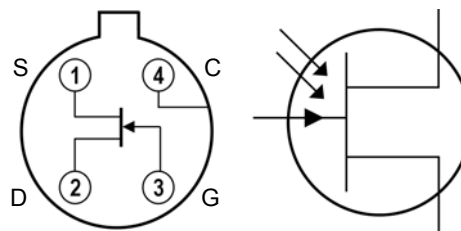
Maximum Voltages

Drain to Gate 15V

Drain to Source 15V

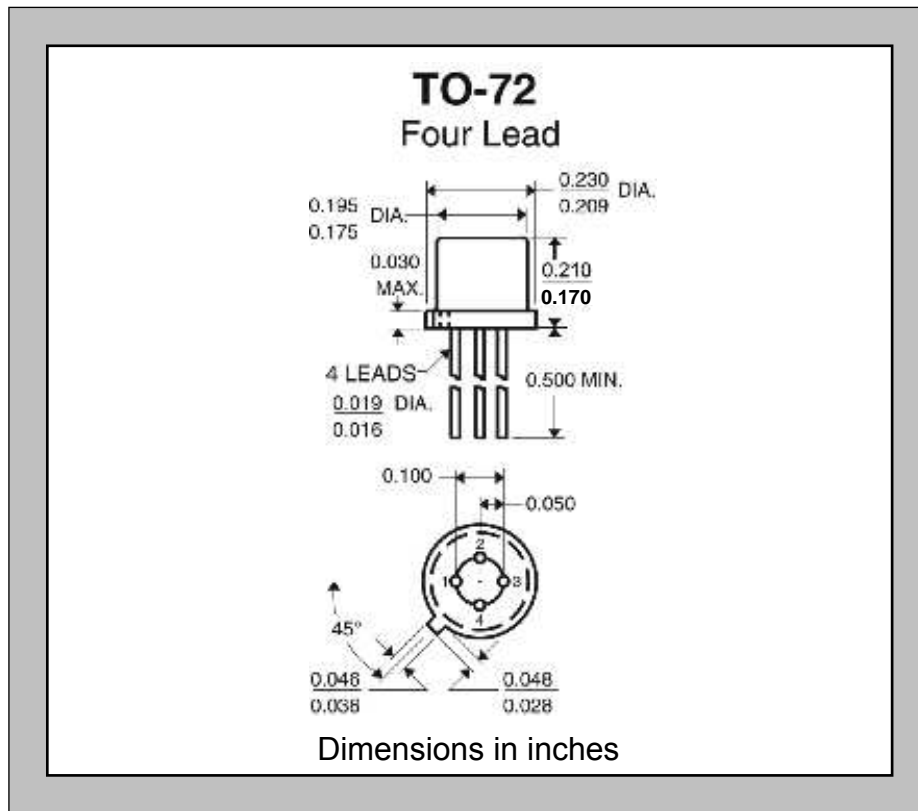
Gate to Source -10V

TO-72
TOP VIEW



ELECTRICAL CHARACTERISTICS @ 25 °C (unless otherwise stated)

| SYMBOL | CHARACTERISTIC | MIN | TYP | MAX | UNITS | CONDITIONS |
|----------------------|--|------|-----|------|-----------------------|---|
| V _{GS(off)} | Gate to Source cutoff Voltage (V _{PO}) | 1.0 | | 5.0 | V | V _{DS} = 10V, I _D = 0.1μA |
| S _G | Gate Sensitivity ^{2,7} | 6.4 | | 24 | μA/mW/cm ² | V _{DS} = 10V, V _{GS} = 0V, λ = 0.9μm |
| S _D | Drain Sensitivity ^{3,7} | | 500 | | mA/mW/cm ² | V _{DS} = 10V, V _{GS} = 0V, R _G = 1MΩ |
| λ _{ig} | Gate Current (Light) ^{4,7} | 10 | | 37.5 | nA/FC | V _{DS} = 10V, V _{GS} = 0V |
| λ _{id} | Drain Current (Light) ^{4,7} | | 800 | | μA/FC | V _{DS} = 10V, V _{GS} = 0V, R _G = 1MΩ |
| I _{DSS} | Drain Saturation Current | 8.0 | | | mA | V _{DS} = 10V, V _{GS} = 0V |
| I _{GSS} | Gate Leakage Current (Dark) | | | 30 | pA | V _{GS} = -10V, V _{DS} = 0V |
| g _{fs} | Forward Transconductance (g _m) | 8000 | | | μS | V _{DS} = 10V, V _{GS} = 0V, f = 1kHz |
| R _{DS(on)} | Drain to Source On Resistance | | 100 | | Ω | V _{DS} = 0.1V, V _{GS} = 0V |
| C _{GS} | Gate to Source Capacitance ⁷ | | | 35 | pF | V _{GS} = -10V, f = 140kHz |
| C _{GD} | Gate to Drain Capacitance ⁷ | | | 20 | | V _{GD} = -10V, f = 140kHz |
| t _r | Rise Time ^{5,7} | | 30 | | ns | V _{DS} = 10V, R _L = R _G = 100Ω |
| t _f | Fall Time ^{6,7} | | 50 | | | |



NOTES

1. Absolute maximum ratings are limiting values above which serviceability may be impaired.
2. Gate Current per unit Radiant Power Density at Lens Surface
3. Drain Current per unit Radiant Power Density ($\lambda = 0.9\mu\text{m}$).
4. Tungsten Lamp 2800°K Color Temperature.
5. GaAs Diode Source.
6. Directly Proportional to R_G .
7. Not production tested. Guaranteed by design.

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