

Photo DMOS-FET Relay

Description

The **LT316** is a miniature 2-Form A solid state relay in a 8 pin SOP package that employs optically coupled MOSFET technology to provide 1500V of input to output isolation. The optically coupled input is controlled by a highly efficient GaAlAs infrared LED and MOS FETs on the output side.

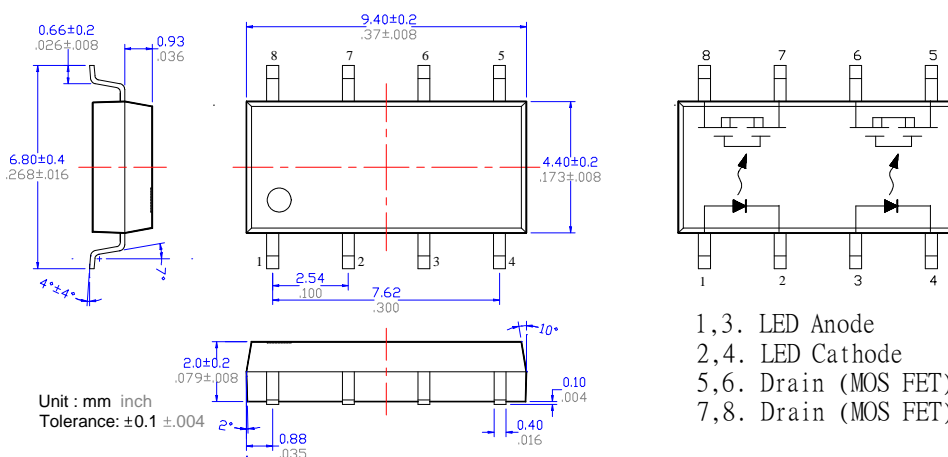
Features

- SOP package 8 Pin type in miniature design (4.4×9.4×2.0mm / .173×.37×.083inch)
- Low driver power requirements (TTL/CMOS Compatible)
- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 1500Vrms Input/Output isolation
- Tape & Reel version available

Applications

- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine

Outline Dimensions



- 1,3. LED Anode
- 2,4. LED Cathode
- 5,6. Drain (MOS FET)
- 7,8. Drain (MOS FET)

Photo DMOS-FET Relay Specifications

Part Name: LT316

(Load voltage:20V / Load current: AC:1.7A)

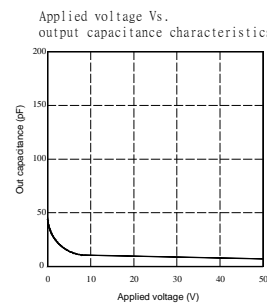
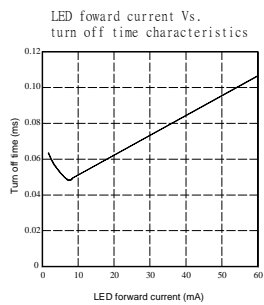
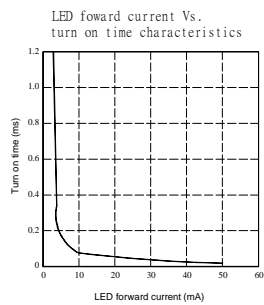
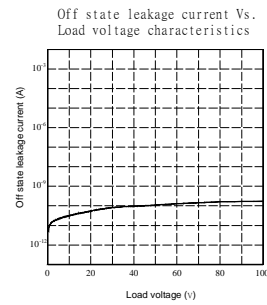
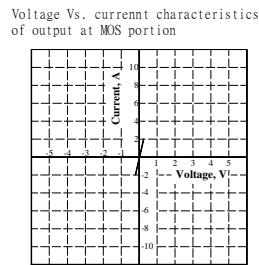
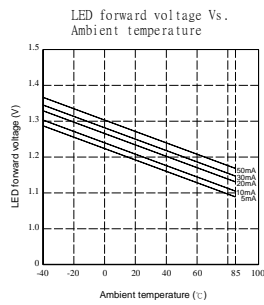
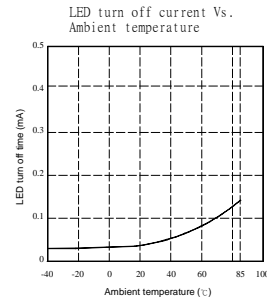
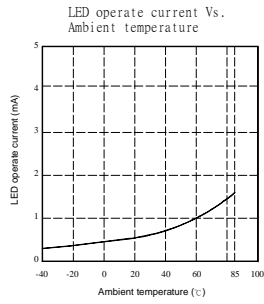
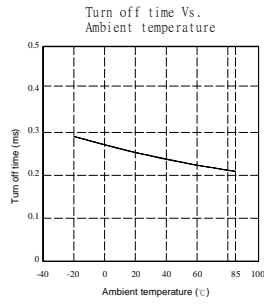
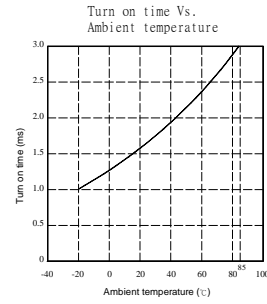
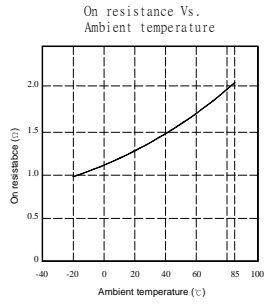
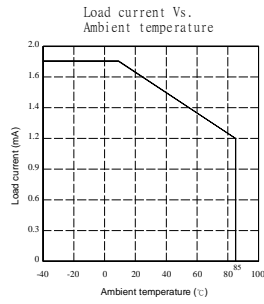
Absolute Maximum Ratings (Ambient Temperature: 25°C)

| Item | Symbol | Value | Units | Note | |
|---------------------------|--------------------------|-------------------|------------------|------------------|---------------------|
| Input | Continuous LED Current | I _F | 50 | mA | |
| | Peak LED Current | I _{FP} | 1000 | mA | f=100Hz, duty=1% |
| | LED Reverse Voltage | V _R | 5 | V | |
| | Input Power Dissipation | P _{In} | 75 | mW | |
| Output | Load Voltage | V _L | 20 | V(AC peak or DC) | |
| | Load Current | I _L | 1.7 | A | |
| | Peak Load Current | I _{Peak} | 35 | A | 300 μs(1 pulse) |
| | Output Power Dissipation | P _{out} | 1.8 | W | |
| Total Power Dissipation | P _T | 2 | W | | |
| I/O Breakdown Voltage | V _{I/O} | 1500 | V _{rms} | RH=60%, 1min | |
| Operating Temperature | T _{Opr} | -40 to +85 | °C | | |
| Storage Temperature | T _{Stg} | -40 to +100 | °C | | |
| Pin Soldering Temperature | T _{Sol} | 260 | °C | 10 sec max. | |

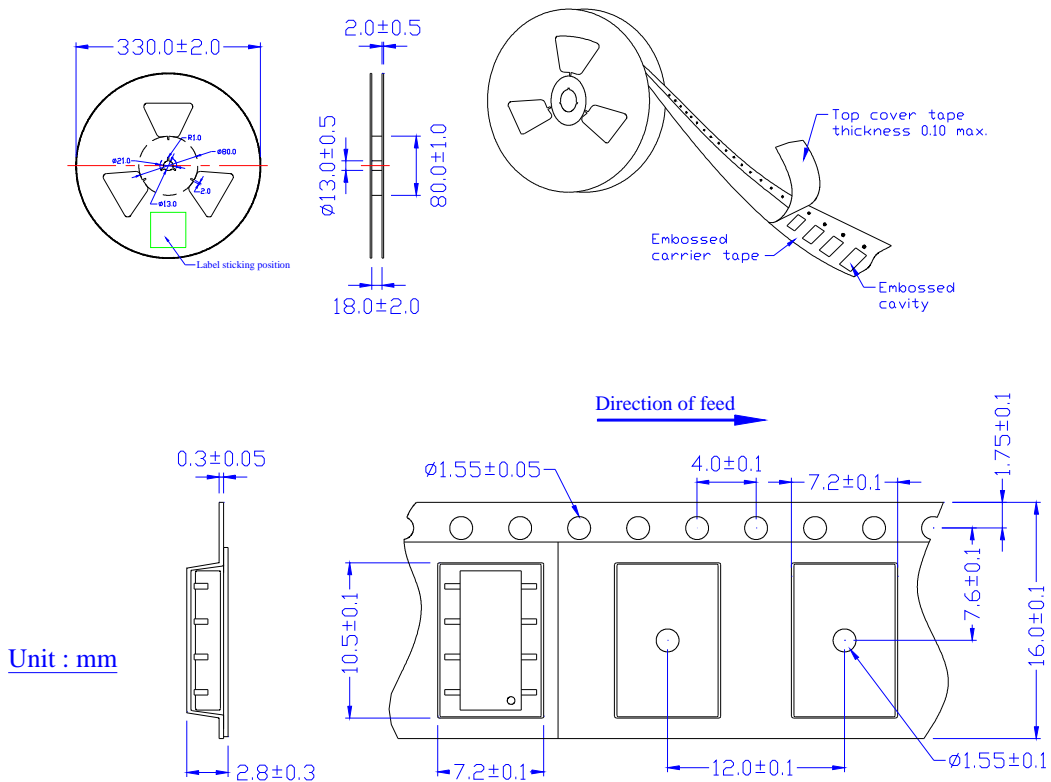
Electrical Specifications (Ambient Temperature: 25°C)

| Item | Symbol | MIN. | TYP. | MAX. | Units | Conditions |
|--------------|---------------------------|--------------------|-----------------|------|-------|---|
| Input | LED Forward Voltage | V _F | 1.2 | 1.4 | V | I _F =10mA |
| | Operation LED Current | I _{F On} | 0.5 | 2.0 | mA | |
| | Recovery LED Current | I _{F Off} | 0.35 | 0.5 | mA | |
| | Recovery LED Voltage | V _{F Off} | 0.5 | | V | |
| Output | On-Resistance | R _{on} | 0.5 | 1.2 | Ω | I _F =5mA, I _L =100mA, Time to flow is within 1 sec. |
| | Off-State Leakage Current | I _{Leak} | | 1 | μA | V _L =Rating |
| | Output Capacitance | C _{out} | | 500 | pF | V _L =0, f=1MHz |
| Transmission | Turn-On Time | T _{on} | | 1.5 | ms | I _F =5mA, I _L =100mA |
| | Turn-Off Time | T _{off} | | 0.1 | ms | |
| Coupled | I/O Isolation Resistance | R _{I/O} | 10 ⁹ | | Ω | DC500V |
| | I/O Capacitance | C _{I/O} | | 0.8 | 1.5 | pF |

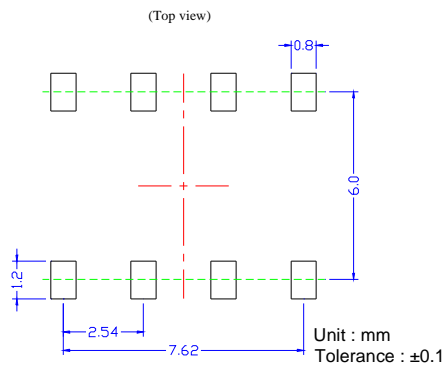
Reference Data



Taping Specifications for Surface Mount Devices

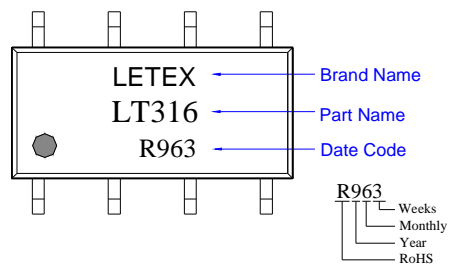


Recommended Mounting Pad



Marking

(Each photo MOS Relay shall be marked with the following information)



- Note: 1. There shall be leader of 230 mm minimum which may consist of carrier and or cover tape follower by a minimum of 160 mm of carrier tape sealed with cover tape.
2. There shall be a minimum of 160 mm of empty component pockets sealed with cover tape.
3. Devices are pockets in accordance with EIA standard EIA-481-A and specifications given above.
4. Packaging: 1,000pcs per reel, 2 reel per box, 5 boxes per carton.