

Photo DMOS-FET Relay

Description

The **LT913** is a miniature 1-Form A solid state relay in an 6 pin SMD package that employs optically coupled MOSFET technology to provide 3750V 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.

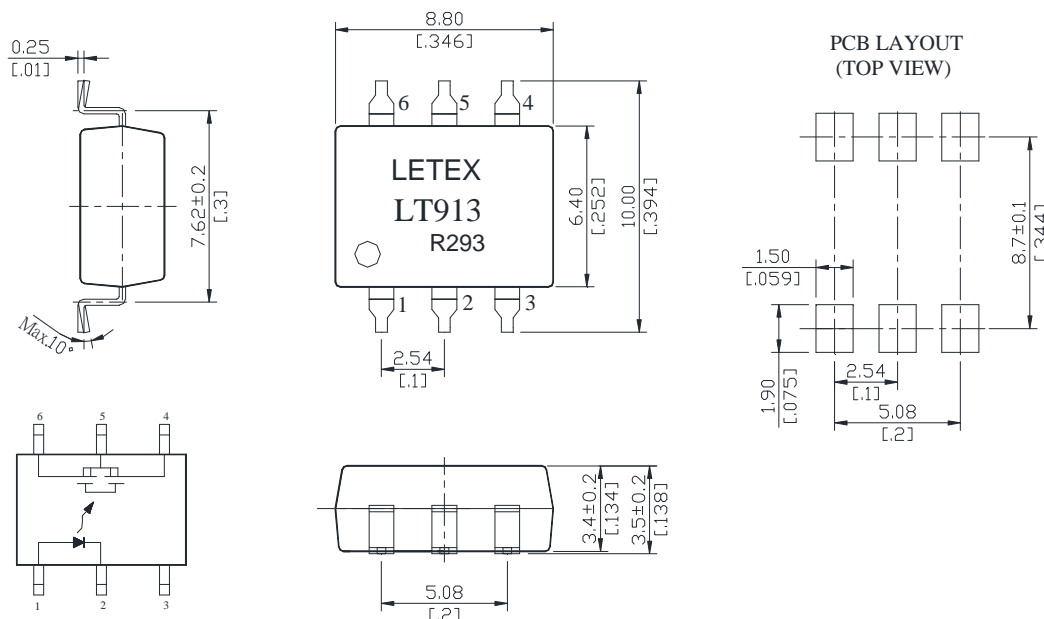
Features

- Low driver power requirements (TTL/CMOS Compatible)
- No moving parts
- High reliability
- Arc-Free with no snubbing circuits
- 3750Vrms Input/Output isolation

Applications

- Telecommunications (PC, Electronic notepad)
- Measuring and Testing equipment
- Industrial control
- Security equipments
- High speed inspection machine Arc-Free with no snubbing circuits

Outline Dimensions



1. LED Anode
2. LED Cathode
4. Drain (MOS FET)
5. Source (MOS FET)
6. Drain (MOS FET)

Unit : mm [inch]
Tolerance: ± 0.2 [$\pm .007$]

Photo DMOS-FET Relay Specifications

Part Name: LT913

(Load voltage: 200V / Load current: 180mA)

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	200	V(AC peak or DC)	
	Load Current	I _L	180	mA	
	Peak Load Current	I _{Peak}	1.0	A	100ms(1 pulse)
	Output Power Dissipation	P _{out}	450	mW	
Total Power Dissipation	P _T	500	mW		
I/O Breakdown Voltage	V _{I/O}	3750	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}	0.7		V	
Output	On-Resistance	R _{on}	5	8	Ω	I _F =5mA, I _L =100mA, Time to flow is within 1 sec.
	Off-State Leakage Current	I _{Leak}	0.2	1	uA	V _L =Rating
	Output Capacitance	C _{out}	115		pF	V _L =0, f=1MHz
Transmission	Turn-On Time	T _{on}	0.4	0.8	ms	I _F =5mA, I _L =100mA,
	Turn-Off Time	T _{off}	0.05	0.2	ms	
Coupled	I/O Isolation Resistance	R _{I/O}	10 ¹⁰		Ω	DC500V
	I/O Capacitance	C _{I/O}	0.8	1.5	pF	f=1MHz

Reference Data

