

Photo DMOS-FET Relay

Description

The **LT991** is a 1-Form A solid state relay in an 6 pin SMD package that employs optically coupled MOSFET technology to provide 3750V/5000V 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
- 3750 / 5000 Vrms Input/Output isolation
- Tape & Reel version available

Applications

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

Outline Dimensions

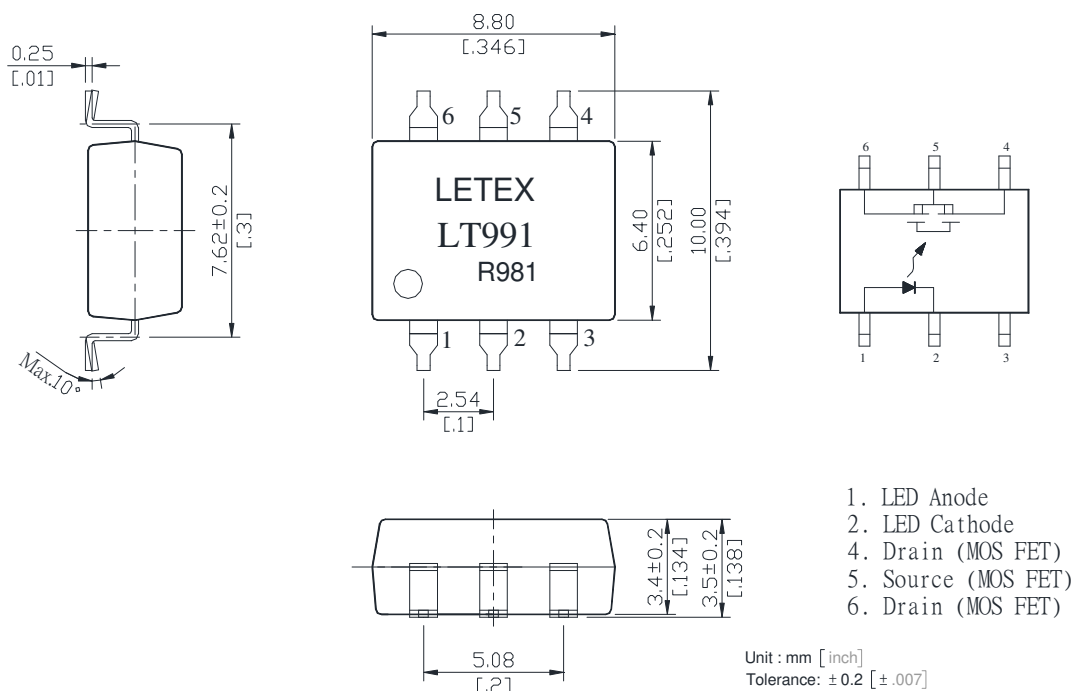


Photo DMOS-FET Relay Specifications

Part Name: LT991

(Load voltage: 1500V / Load current: 25mA)

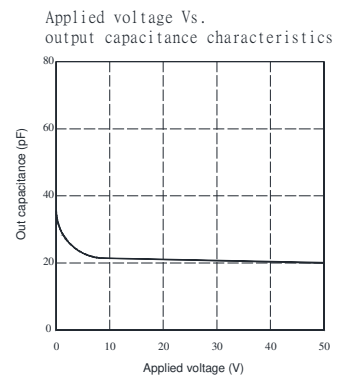
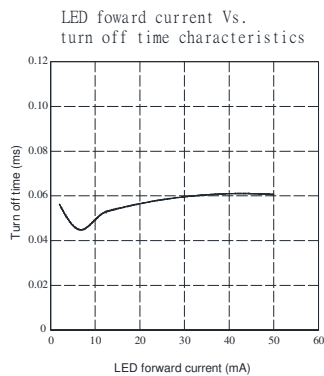
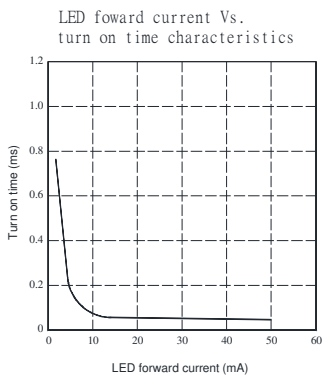
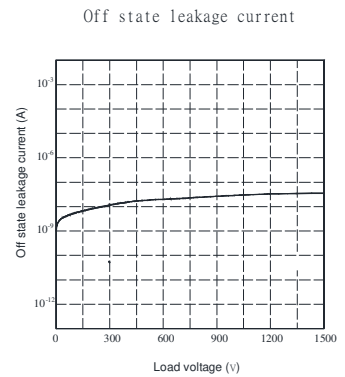
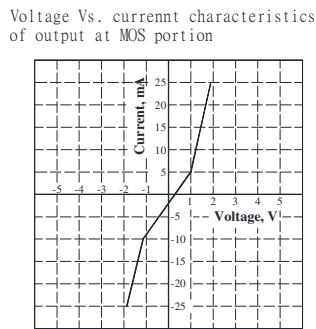
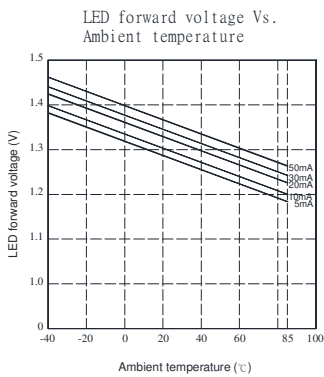
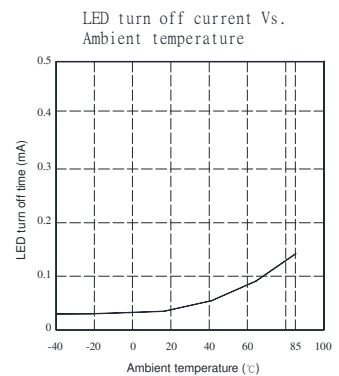
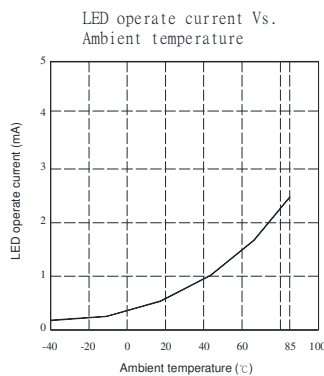
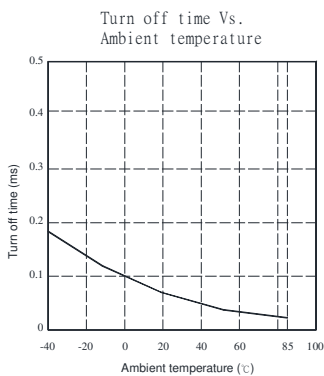
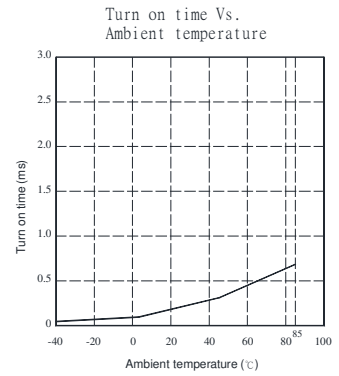
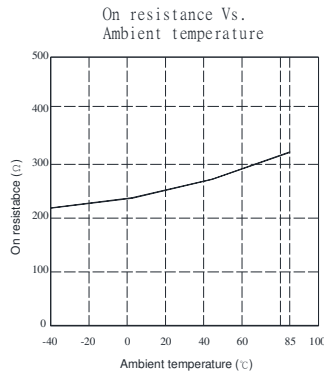
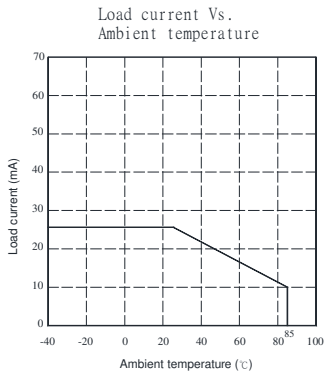
Absolute Maximum Ratings (Ambient Temperature: 25°C)

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	1500	V(AC peak or DC)	
	Load Current	I _L	25	mA	A (AC)
			30	mA	B (DC)
			50	mA	C (DC)
	Peak Load Current	I _{Peak}	100	mA	100ms(1 pulse)
Output Power Dissipation	P _{out}	360	mW		
Total Power Dissipation		P _T	410	mW	
I/O Breakdown Voltage		V _{I/O}	3750	V _{rms}	RH=60%, 1min
I/O Breakdown Voltage(Suffix-V)		V _{I/O}	5000	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.

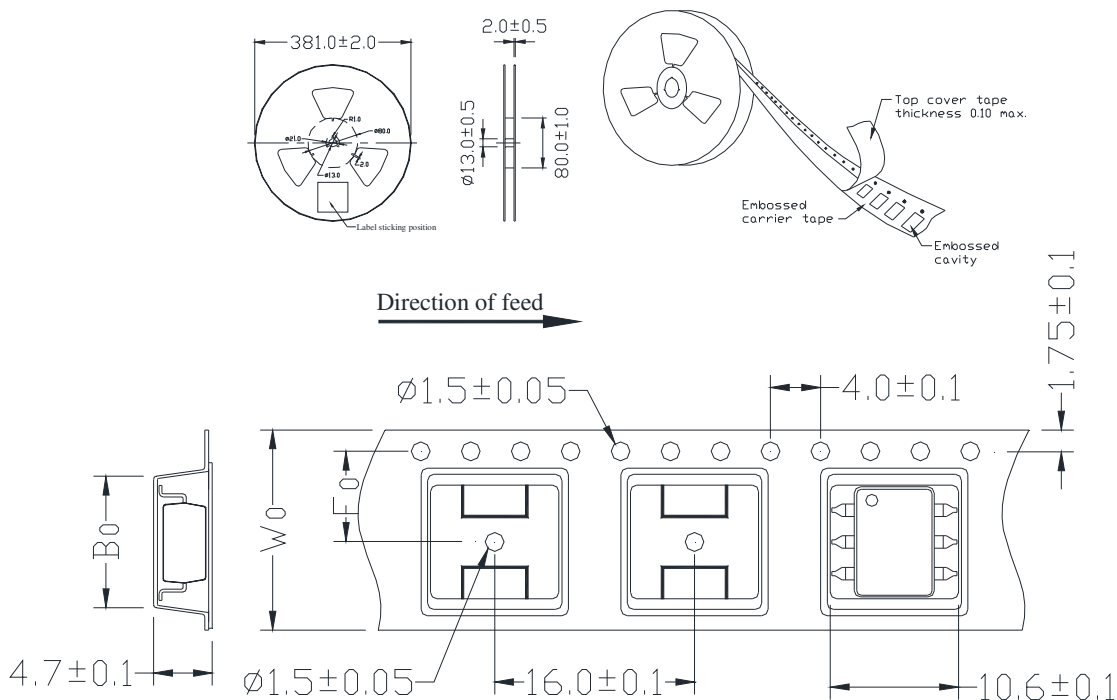
Electrical Specifications (Ambient Temperature: 25°C)

Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V _F		1.3	1.5	V	I _F =10mA
	Operation LED Current	I _{F on}		0.8	5.0	mA	
	Recovery LED Current	I _{F off}		0.5	0.8	mA	
	Recovery LED Voltage	V _{F off}	0.7			V	
Output	On-Resistance	R _{on}		260	290	Ω	I _F =10mA, I _L = Rating, Time to flow is within 1 sec.
				370	420	Ω	I _F =10mA, I _L < 5mA
	Off-State Leakage Current	I _{Leak}			10	uA	V _L =Rating
	Output Capacitance	C _{out}		35		pF	V _L =0, f=1MHz
Transmis sion	Turn-On Time	T _{on}		0.1	0.5	ms	I _F =10mA, I _L =Rating
	Turn-Off Time	T _{off}		0.06	0.1	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



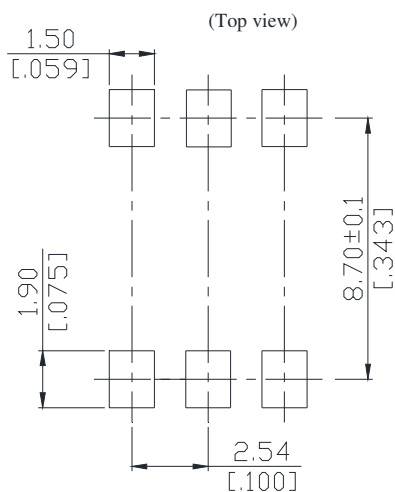
Taping Specifications for Surface Mount Devices



Unit: mm

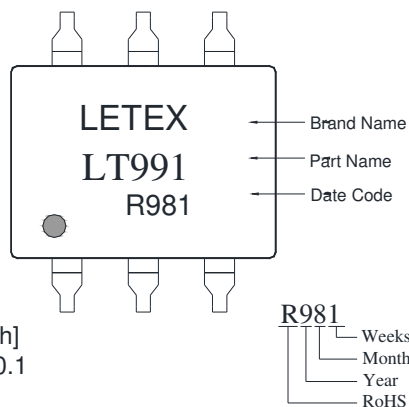
TYPE	B0±0.1	F0±0.1	W0±0.1	15" REEL/PCS
6P	9.4	7.5	16	1000

Recommended Mounting Pad



Marking

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



Unit : mm [inch]
Tolerance : ±0.1

- 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.