Photo DMOS-FET Relay

Description

The **LT930** is a 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
- 3750 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

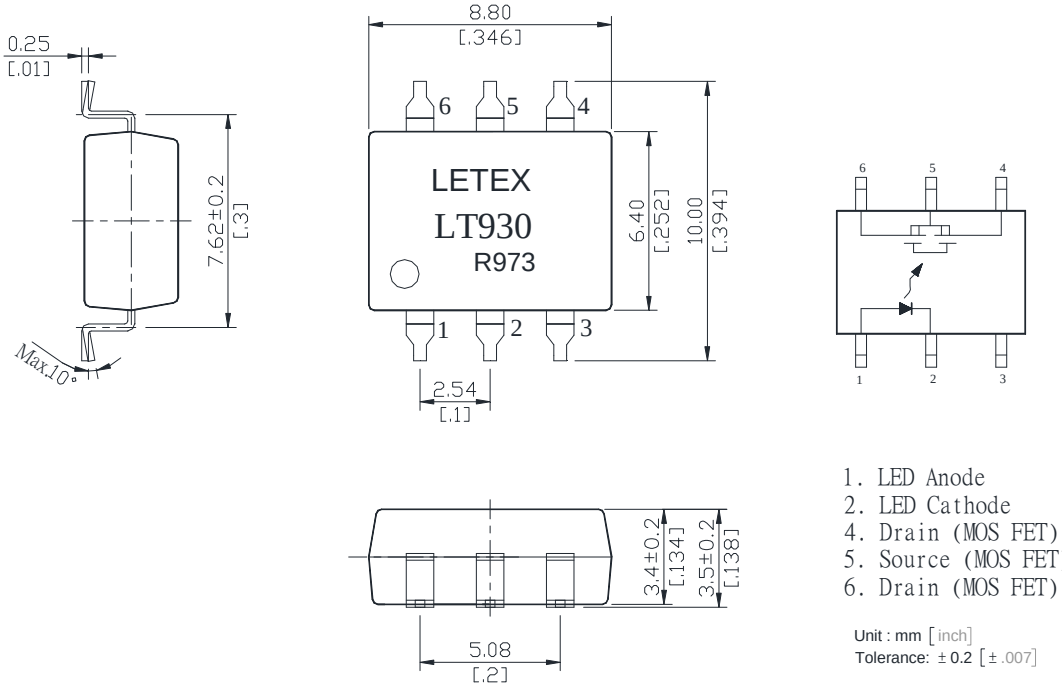


Photo DMOS-FET Relay Specifications

Part Name: LT930

(Load voltage: 700V / Load current: 600mA)

Absolute Maximum Ratings (Ambient Temperature: 25℃)

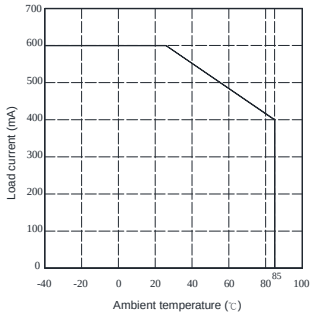
Item		Symbol	Value	Units	Note
Input	Continuous LED Current	I_F	50	mA	
	Peak LED Current	I_{FP}	1000	mA	f=100Hz, duty=1%
	LED Reverse Voltage	V_R	5	V	
	Input Power Dissipation	P_{In}	75	mW	
Output	Load Voltage	V_L	700	V(AC peak or DC)	
	Load Current	I_L	600	mA	A (AC)
			700	mA	B (DC)
			800	mA	C (DC)
	Peak Load Current	I_{Peak}	1200	mA	100ms(1 pulse)
	Output Power Dissipation	Pout	600	mW	
Total Power Dissipation		P_T	650	mW	
I/O Breakdown Voltage		$V_{I/O}$	3750	Vrms	RH=60%, 1min
Operating Temperature		T_{opr}	-40 to +85	℃	
Storage Temperature		T_{stg}	-40 to +100	℃	
Pin Soldering Temperature		T_{sol}	260	℃	10 sec max.

Electrical Specifications (Ambient Temperature: 25℃)

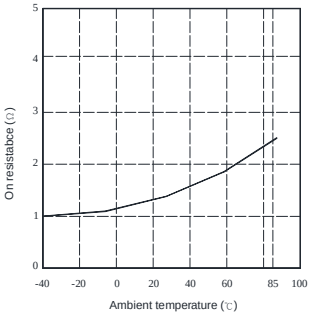
Item		Symbol	MIN.	TYP.	MAX.	Units	Conditions
Input	LED Forward Voltage	V_F		1.2	1.5	V	I_F=10mA
	Operation LED Current	$I_{F\ on}$		0.8	5.0	mA	
	Recovery LED Current	$I_{F\ off}$	0.35	0.8		mA	
	Recovery LED Voltage	$V_{F\ off}$	0.7			V	
Output	On-Resistance	R_{on}		1.0	1.3	Ω	IF=10mA,IL= Rating, Time to flow is within 1 sec.
	Off-State Leakage Current	I_{Leak}			1	uA	V_L=Rating
	Output Capacitance	C_{out}		1900		pF	V_L=0, f=1MHz
Transmission	Turn-On Time	T_{on}		0.5	2.0	ms	I_F=10mA, I_L=Rating
	Turn-Off Time	T_{off}		0.03	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

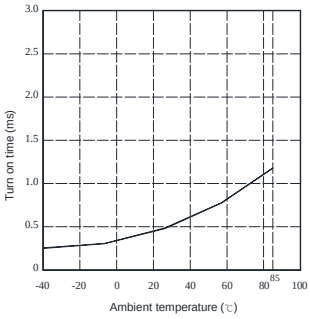
Load current Vs.
Ambient temperature



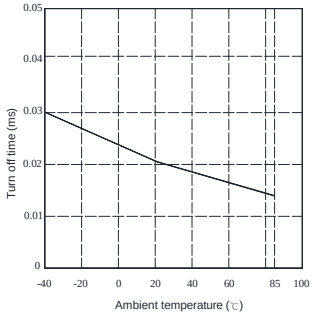
On resistance Vs.
Ambient temperature



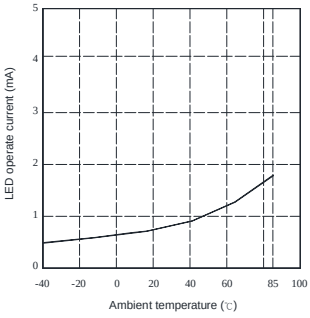
Turn on time Vs.
Ambient temperature



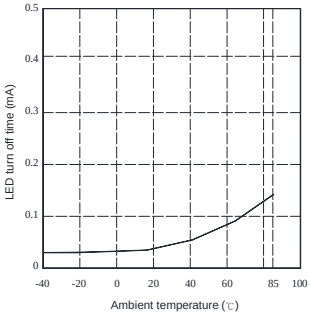
Turn off time Vs.
Ambient temperature



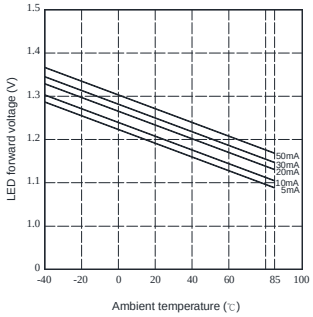
LED operate current Vs.
Ambient temperature



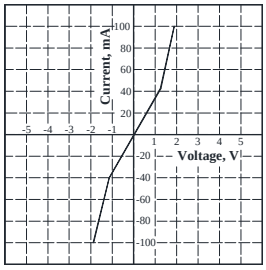
LED turn off current Vs.
Ambient temperature



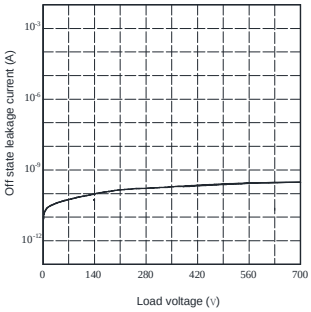
LED forward voltage Vs.
Ambient temperature



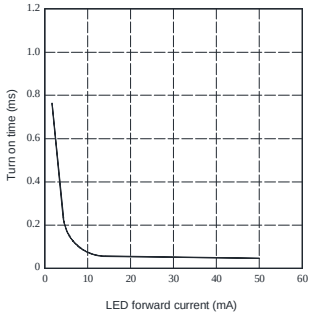
Voltage Vs. currennt characteristics
of output at MOS portion



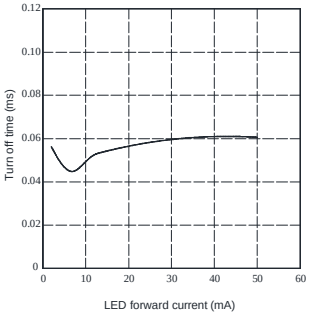
Off state leakage current



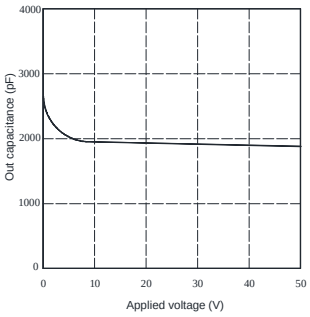
LED foward current Vs.
turn on time characteristics



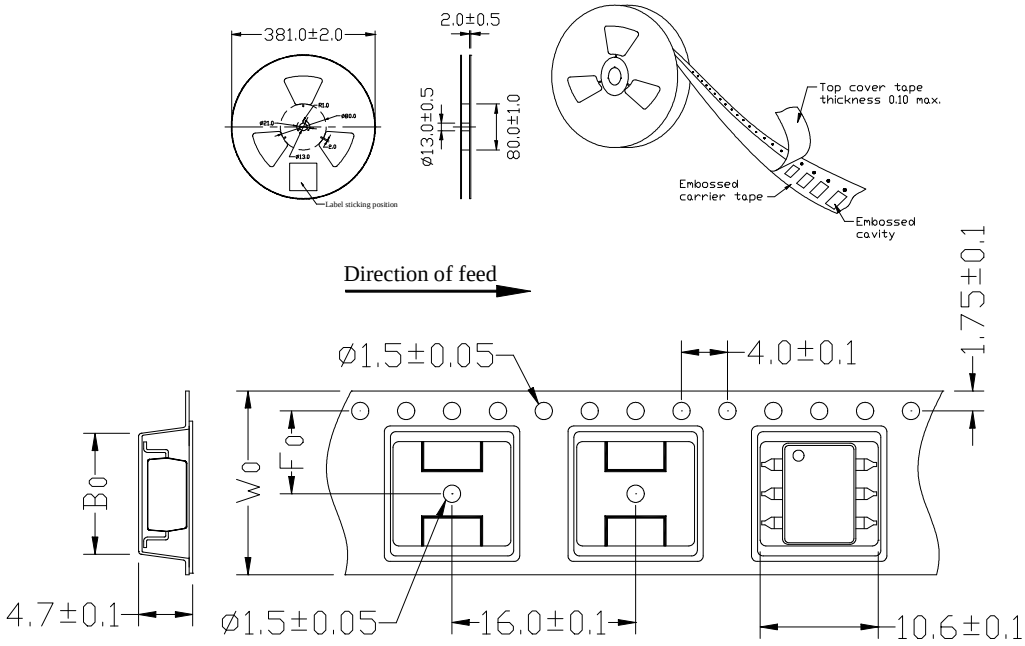
LED foward current Vs.
turn off time characteristics



Applied voltage Vs.
output capacitance characteristics



Taping Specifications for Surface Mount Devices

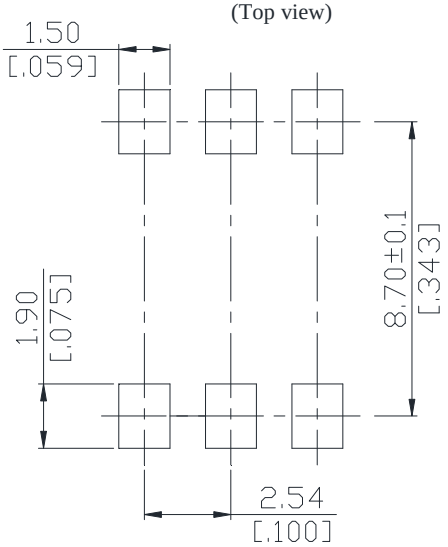


Unit: mm

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

Recommended Mounting Pad

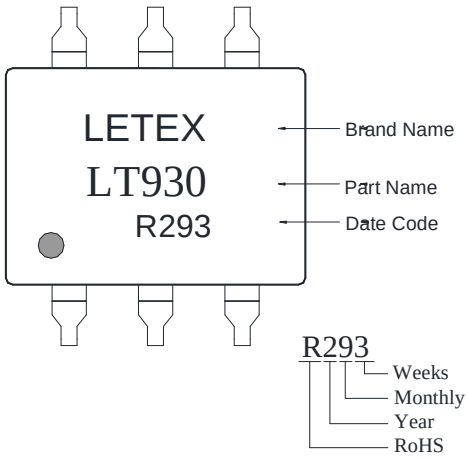
(Top view)



Unit : mm [inch]
Tolerance : ±0.1

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.