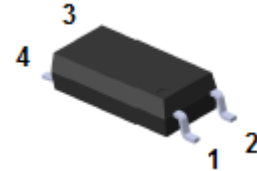
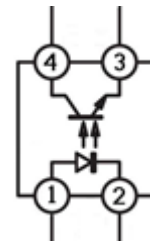


Features

- Current Transfer Ratio
(CTR: 50~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
(CTR: 63~320% at $I_F = 10\text{mA}$, $V_{CE} = 5\text{V}$)
- High Isolation Voltage Between Input and Output ($V_{iso} = 5000\text{V rms}$)
- Wide operating temperature range:
BL101X Series (Top=-55°C to 110°C)
BL101XH Series (Top=-55°C to 125°C)

HF



LSOP-4L

Applications

- Programmable Controllers
- System Appliances, Measuring Instruments
- Telecommunication Equipments
- Home Appliances, Such as Fan Heaters, etc
- Signal Transmission Between Circuits of Different Potentials and Impedances

Mechanical Data

- Case: LSOP-4L
- Molding Compound, UL Flammability Classification Rating 94V-0
- Terminals: Matte Tin Plated Leads, Solderable per MIL-STD-202, Method 208

Ordering Information

Part Number	Package	Shipping	Marking Code
BL101X(H)	LSOP-4L	3000/Tape&Reel	BL101X(H)

X: CTR Rank (0, 2, 3, 4, 7, 8 or 9)

H: is for Top=-55°C to 125°C.

Maximum Ratings (@ $T_A=25^\circ\text{C}$ unless otherwise specified)

Parameter		Symbol	Value	Units
Input	Forward Current	I_F	60	mA
	Peak Forward Current (1 μs , pulse)	I_{FP}	1.5	A
	Reverse Voltage	V_R	6	V
	Power Dissipation	P_D	100	mW
Output	Power Dissipation	P_C	150	mW
	Collector Current	I_C	50	mA
	Collector-Emitter Voltage	V_{CEO}	80	V
	Emitter-Collector Voltage	V_{ECO}	7	V

Thermal Characteristics

Parameter	Symbol		Values	Units
Total Power Dissipation	P _{TOT}		250	mW
Isolation Voltage ^(Note1)	V _{ISO}		5000	V _{rms}
Operating Temperature	T _{OPR}	BL101X	-55 to 110	°C
		BL101XH	-55 to 125	°C
Storage Temperature Range	T _{STG}	BL101X	-55 to +125	°C
		BL101XH	-55 to +125	°C
Soldering Temperature ^(Note2)	T _{SOL}		260	°C

Notes:

1. AC for 1 minute, R.H.= 40 ~ 60% R.H. In this test, pins 1, 2 are shorted together, and pins 3, 4 are shorted together.
2. For 10 seconds.

Electrical Characteristics-TR1 (@TA=25°C unless otherwise specified)

Parameter			Symbol	Test conditions	MIN	TYP	MAX	UNIT
Input	Forward Voltage	BL101X	V_F	$I_F=50mA$	-	1.30	1.5	V
		BL101XH			-	1.50	1.7	V
	Reverse Current		I_R	$V_R=6V$	-	-	10	uA
	Input Capacitance		C_{in}	$V_R=0V, f=1kHz$	-	50	-	pF
Output	Collector-Emitter Dark Current		I_{CEO}	$V_{CE}=20V, I_F=0mA$	-	-	100	nA
	Collector-Emitter Breakdown Voltage		BV_{CEO}	$I_C=0.1mA$	80	-	-	V
	Emitter-Collector Breakdown Voltage		BV_{ECO}	$I_E=0.1mA$	7	-	-	V
Transfer Characteristics	Current Transfer Ratio	BL1010(H)	CTR	$I_F=5mA, V_{CE}=5V$	50	-	600	%
		BL1017(H)			80	-	160	
		BL1018(H)			130	-	260	
		BL1019(H)			200	-	400	
		BL1012(H)	CTR	$I_F=10mA, V_{CE}=5V$	63	-	125	%
		BL1013(H)			100	-	200	
		BL1014(H)			160	-	320	
		BL1012(H)		$I_F=1mA, V_{CE}=5V$	22	-	-	%
		BL1013(H)			34	-	-	
		BL1014(H)			56	-	-	
	Collector-Emitter Saturation Voltage		$V_{CE(sat)}$	$I_F=10mA, I_C=1mA$	-	-	0.3	V
	Isolation Resistance		R_{IO}	$V_{IO}=500Vdc, 40\sim60\%$ R.H.	5×10^{10}	-	-	Ω
	Floating Capacitance		C_{IO}	$V_{IO}=0, f=1MHz$	-	-	1.0	pF
	Turn On Time		T_{on}	$V_{CE}=5V$ $I_C=5mA$ $RL=100\Omega$	-	4	-	us
	Turn Off Time		T_{off}		-	3	-	
	Rise Time		t_r		-	-	18	us
	Fall Time		T_f		-	-	18	

Ratings and Characteristic Curves ($T_A = 25^\circ\text{C}$ unless otherwise noted)

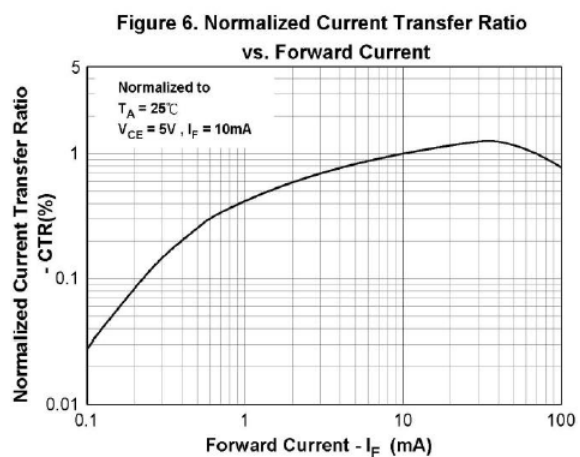
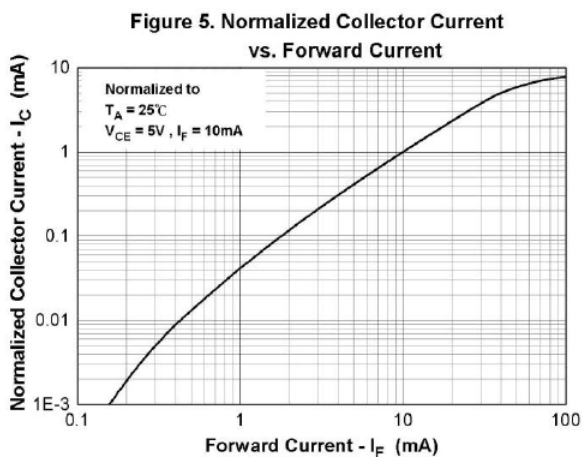
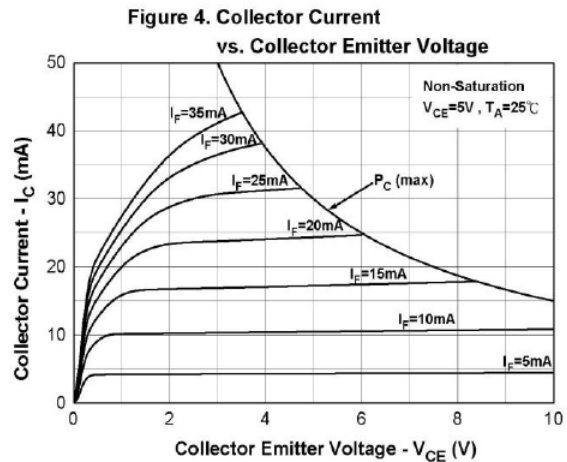
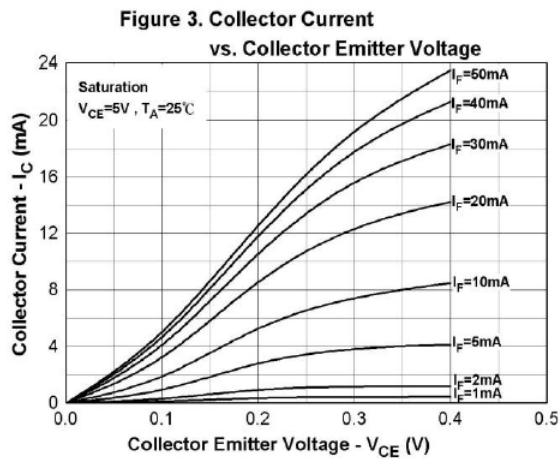
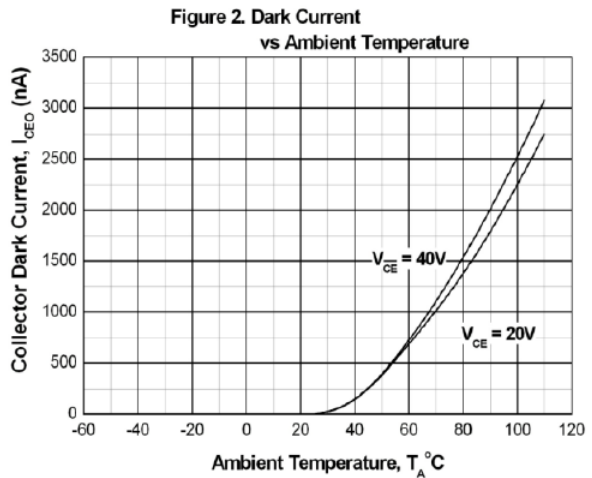
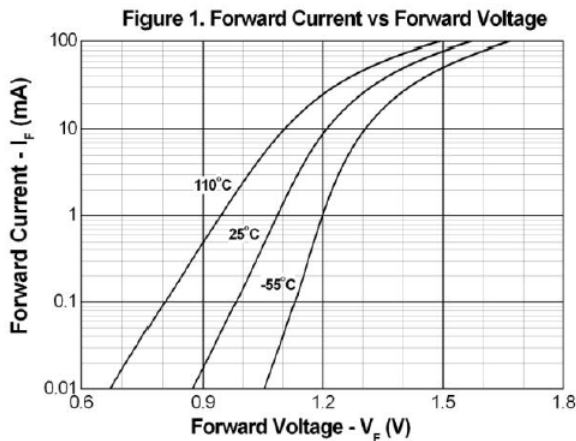


Figure 7. Normalized Current Transfer Ratio vs. Ambient Temperature

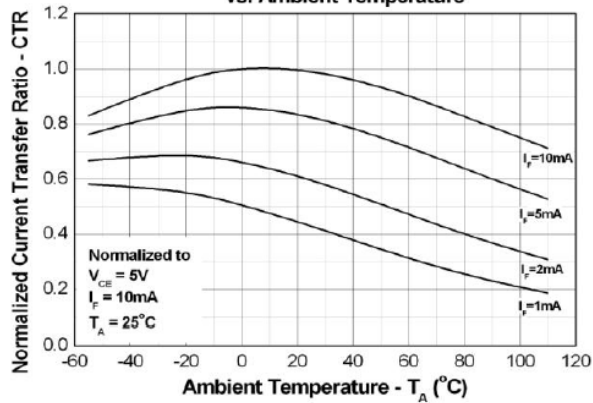


Figure 8. Normalized Current Transfer Ratio vs. Ambient Temperature

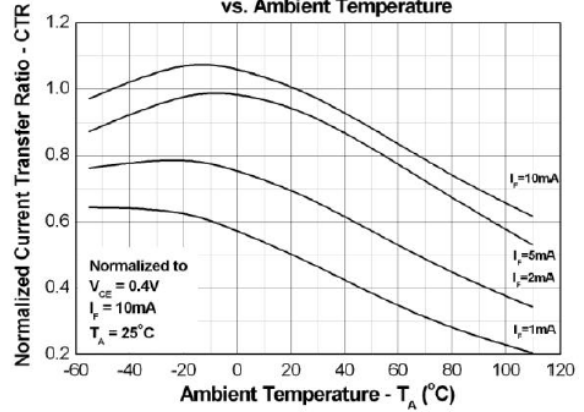


Figure 9. Turn on/off Time vs. Collector Current

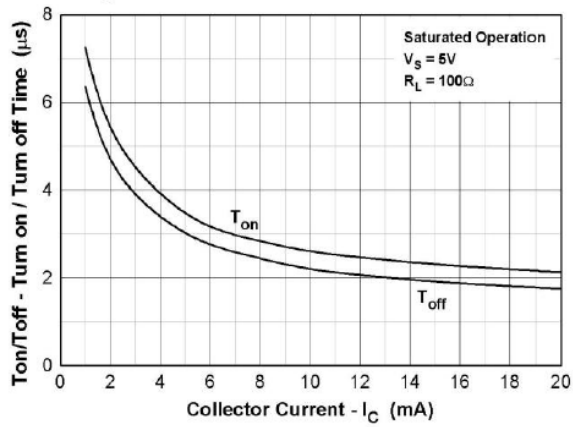
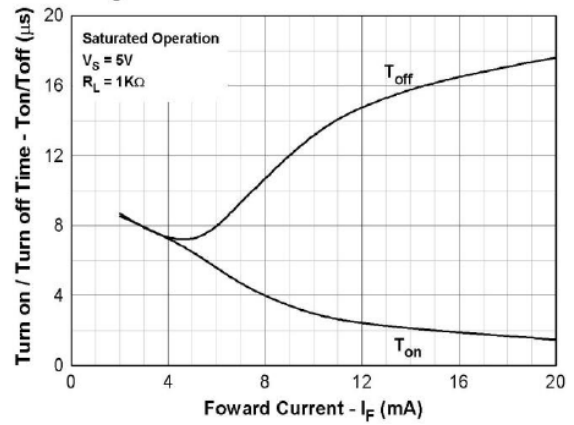
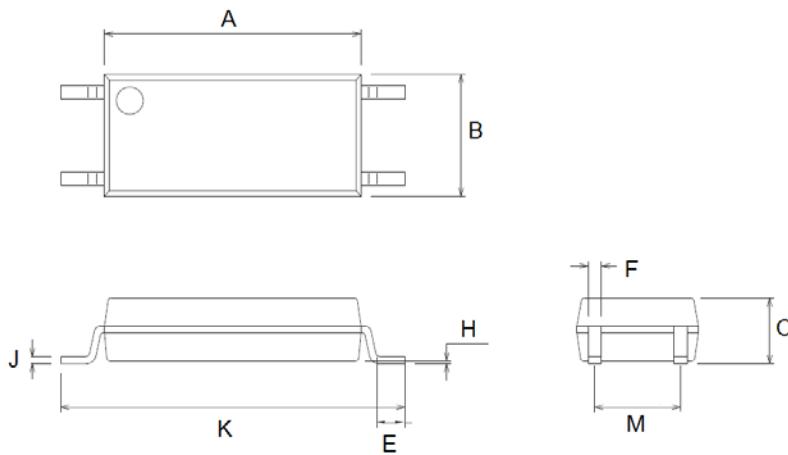


Figure 10. Turn on/off Time vs. Forward Current



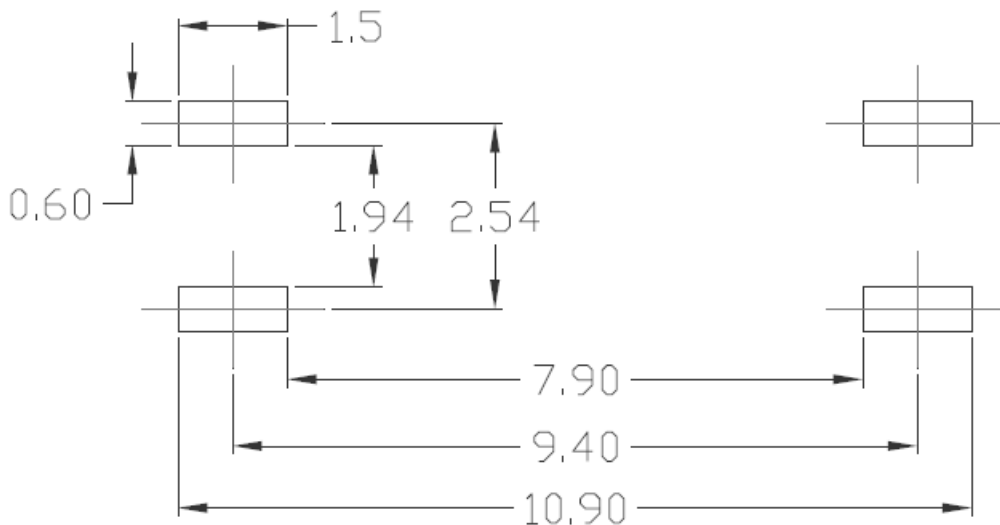
Package Outline Dimensions (unit: mm)

LSOP-4L



LSOP-4L		
Dim	Min	Max
A	7.40	7.80
B	3.40	3.80
C	1.90	2.10
E	0.45	0.65
F	0.30	0.50
H	0.02	0.15
J	0.15	0.35
K	9.90	10.50
M	2.44	2.64

SOLDERING FOOTPRINT (unit: mm)



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