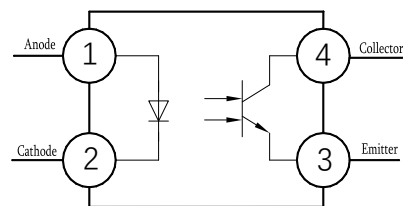


Features

- Current transfer ratio
(CTR: 80~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- High isolation voltage between input and output ($V_{iso} = 3750\text{V rms}$)
- Collector - emitter breakdown voltage $BV_{CEO} \geq 80\text{V}$
- Operating Temperature: $-55^\circ\text{C} \sim 125^\circ\text{C}$

HF



Applications

- Switching power supply, intelligent meter
- Industrial control, measuring instruments
- Office equipment such as copiers
- Household appliances: such as air conditioners, fans, water heaters, etc.

Mechanical Data

- Case: SSOP4
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

BL 3H7 (M) (X) H - (U) (N) (Y)

① ② ③ ④ ⑤ ⑥ ⑦ ⑧

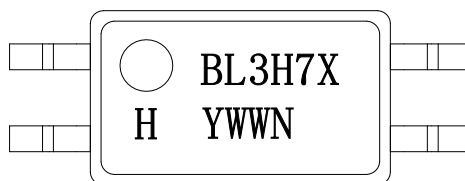
- ① Brand(BL)
- ② Product series(3H7)
- ③ Package type(None:SSOP4)
- ④ CTR Rank(A,B,C,D or None)
- ⑤ Product expansion (H)
- ⑥ Lead frame (None: Copper)
- ⑦ Customer option 1 (0-9 or A-Z or none)
- ⑧ Customer option 2 (0-9 or A-Z or none)

Part Number	Package	Shipping Quantity	Marking Code
BL3H7A*1H	SSOP4	3000 pcs / Tape & Reel	BL3H7A*1H

Notes 1: X denotes CTR Rank : A, B, C, D.

Marking Information

- "BL" denotes brand
- "X" denotes CTR Rank : A, B, C, D , None.
- "Y" denotes Year : A(2024), B(2025), C(2026)
- "WW" denotes Week's number
- "N" denotes the day of Week.



Maximum Ratings (@ T_A = 25°C unless otherwise specified)

Parameter		Symbol	Value	Unit
Input	Forward Current	I _F	50	mA
	Peak Forward Current *1	I _{FM}	1	A
	Reverse Voltage	V _R	6	V
	Power Dissipation	P _D	70	mW
Output	Collector 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	Value	Unit
Total Power Dissipation	P_{TOT}	200	mW
Isolation Voltage ^{*2}	V_{ISO}	3750	V _{rms}
Rated Impulse Isolation Voltage	V_{IOTM}	5000	V
Rated Repetitive Peak Isolation Voltage	V_{IORM}	600	V
Thermal Resistance Junction-to-Air	$R_{\theta JA}$	430	°C/W
Thermal Resistance Junction-to-Case	$R_{\theta JC}$	350	°C/W
Thermal Resistance Junction-to-Lead	$R_{\theta JL}$	368	°C/W
Operating Temperature	T_{OPR}	-55 ~ +125	°C
Storage Temperature Range	T_{STG}	-55 ~ +150	°C
Soldering Temperature ^{*3}	T_{SOL}	260	°C

Notes:

1. Pulse width ≤ 1μs, Duty ratio: 0.001
2. 40 to 60% RH, AC for 1 minute
3. For 10 seconds

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

Parameter		Symbol	Test Condition	Min.	Typ.	Max.	Unit
Input	Forward Voltage	V_F	$I_F = 20\text{mA}$	-	1.2	1.4	V
	Peak Forward Voltage	V_{FM}	$I_{FM} = 0.5\text{A}$	-	-	3.0	V
	Reverse Current	I_R	$V_R = 4\text{V}$	-	-	10	μA
	Input Capacitance	C_{in}	$V_R = 0\text{V}, f = 1\text{kHz}$	-	30	250	pF
Output	Collector-Emitter Dark Current	I_{CEO}	$V_{CE} = 20\text{V}, I_F = 0$	-	-	100	nA
	Collector-Emitter Breakdown Voltage	BV_{CEO}	$I_C = 0.1\text{mA}, I_F = 0$	80	-	-	V
	Emitter-Collector Breakdown Voltage	BV_{ECO}	$I_E = 10\mu\text{A}, I_F = 0$	7	-	-	V
Transfer Characteristics	Collector Current	I_C	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$	2.5	-	30	mA
	Current Transfer Ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$	80	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 20\text{mA}, I_C = 1\text{mA}$	-	0.1	0.2	V
	Isolation Resistance	R_{ISO}	$V_{IO} = 500\text{Vdc}$ 40~60% R.H.	1×10^{12}	-	-	Ω
	Isolation current	R_{ISC}	DC6000V, 40~60% R.H	-	-	2	μA
	Floating Capacitance	C_{IO}	$V_{IO} = 0, f = 1\text{MHz}$	-	0.6	1.0	pF

	Cut-off frequency	f_c	$V_{CE} = 5V, I_C = 2mA$ $R_L = 100\Omega, -3dB$	-	80	-	kHz
	Turn On Time	T_{on}	$V_{CE} = 2V, R_L = 100\Omega$ $I_C = 2mA$	-	4	18	μs
	Turn Off Time	T_{off}		-	3	18	

Rank Table of Current Transfer Ratio CTR

Rank Mark	Min. (%)	Max. (%)	Condition
A	80	160	$I_F = 5mA, V_{CE} = 5V$
B	130	260	
C	200	400	
D	300	600	
No mark	80	600	

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

Fig.1 Current Transfer Ratio vs Forward Current

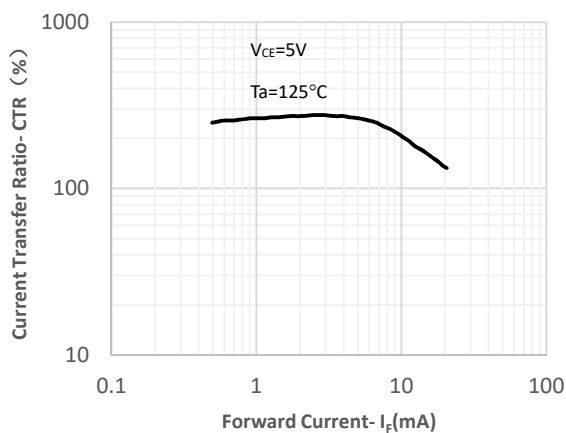


Fig.2 Forward Current vs Forward Voltage

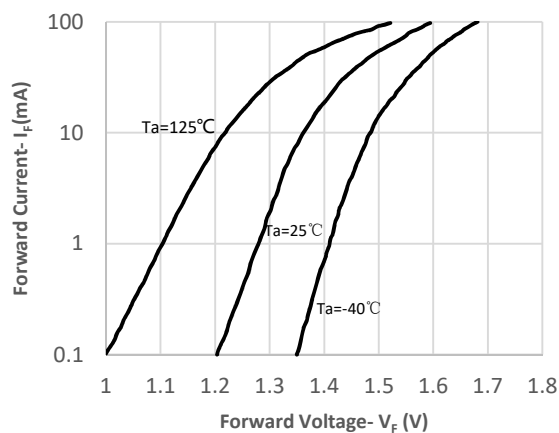


Fig.3 Collector Current vs Forward Current

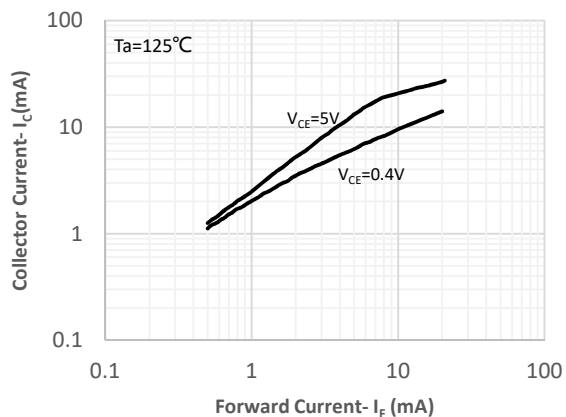


Fig.4 Current Transfer Ratio vs Forward Current

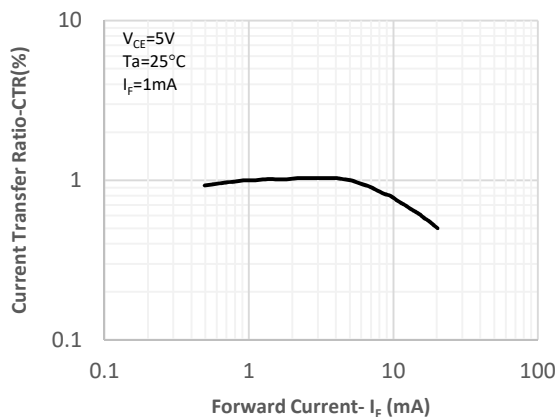


Fig.5 Current Transfer Ratio vs Ambient Temperature

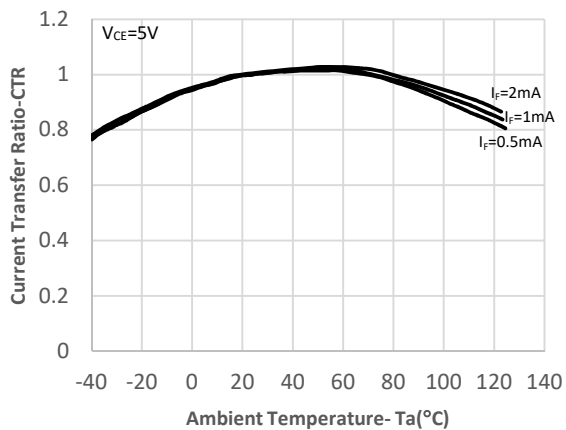


Fig.6 Current Transfer Ratio vs Ambient Temperature

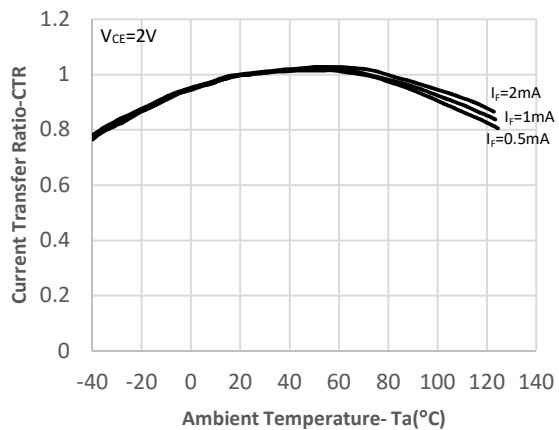


Fig.7 Collector Current vs Ambient Temperature

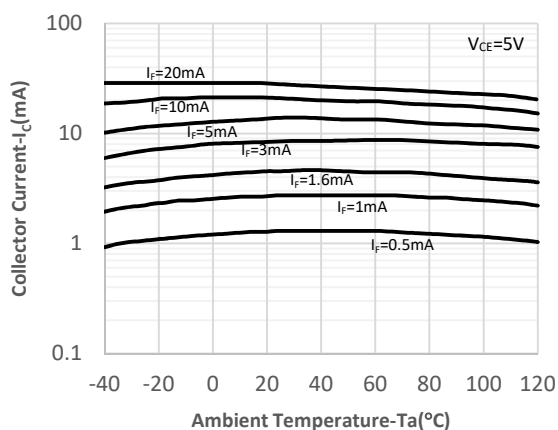


Fig.8 Collector Current vs Collector-Emitter Voltage

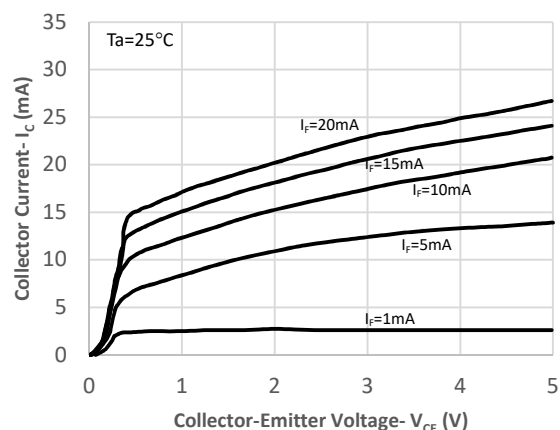


Fig.9 Collector Dark Current vs Ambient Temperature

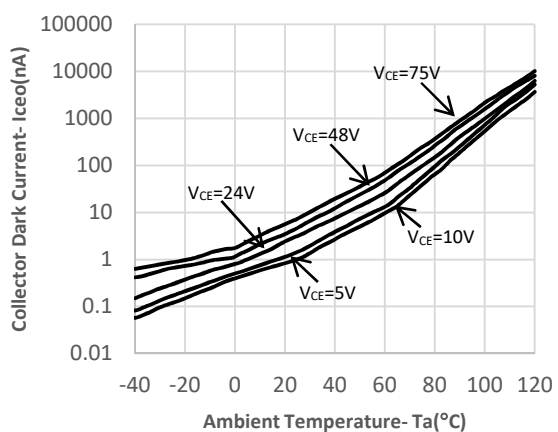


Fig.10 Response Time vs Load Resistance

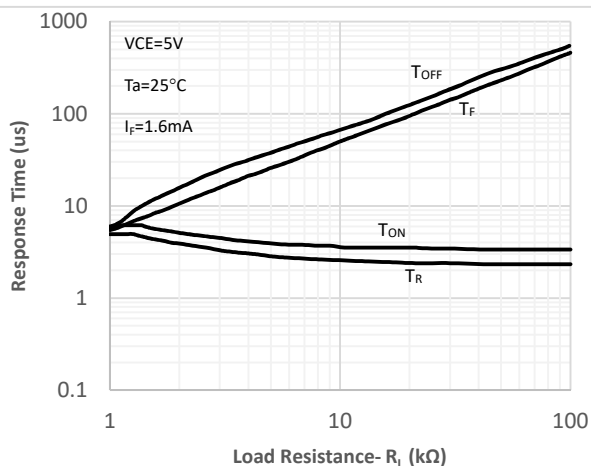


Fig.11 Collector-Emitter Saturation Voltage vs Ambient Temperature

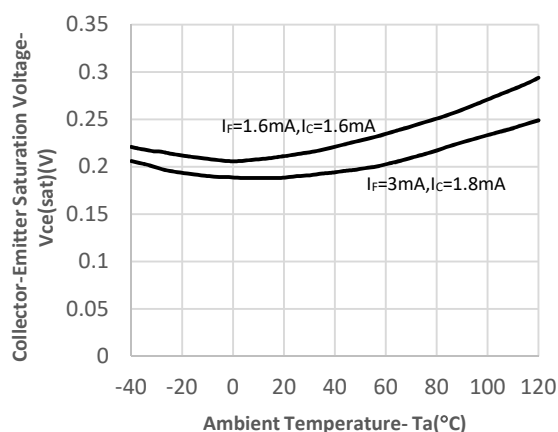
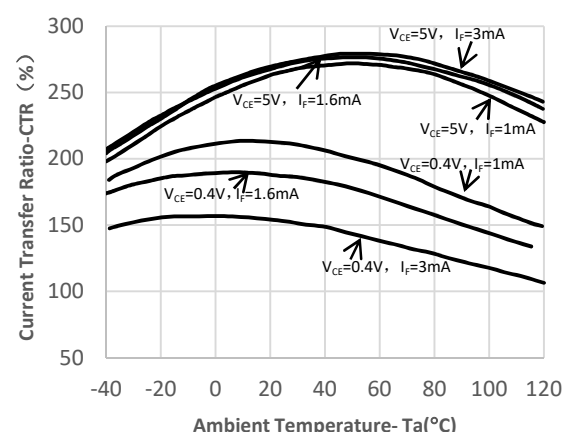
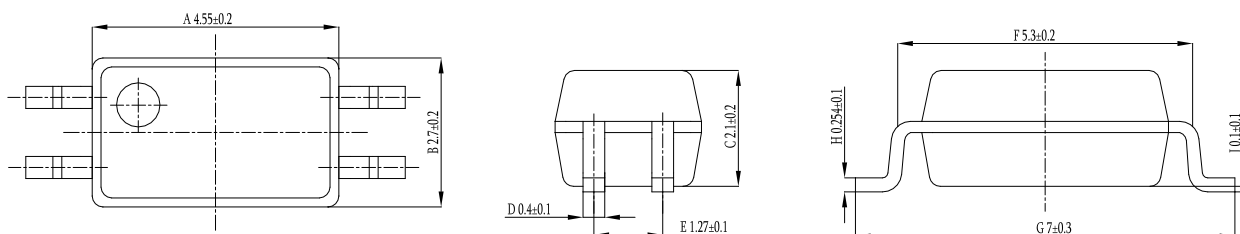


Fig.12 Current Transfer Ratio vs Ambient Temperature

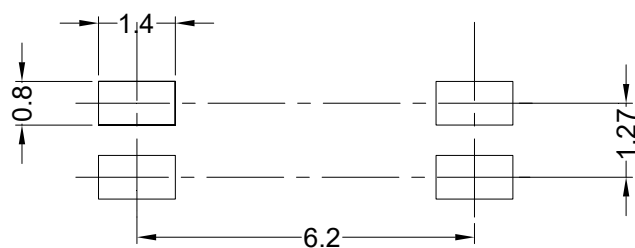


Package Outline Dimensions (unit: mm)

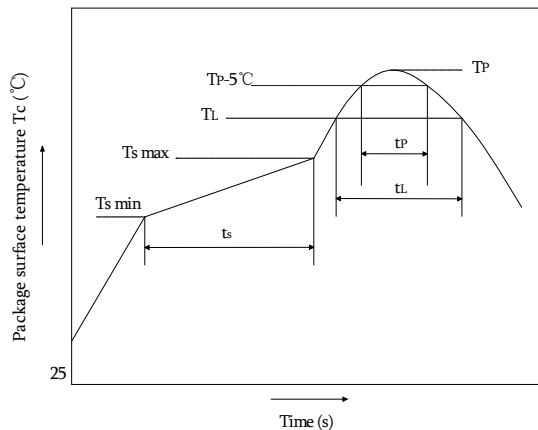
SSOP4



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

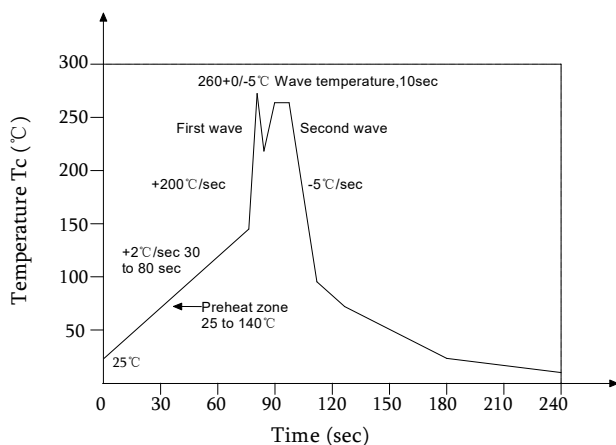


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up rate(T _L to T _P)			3	°C/s
Liquidus temperature	T _L	217		°C
Time above T _L	t _L	60	150	s
Peak temperature	T _P		260	°C
Time during which T _c is between (T _P -5) and T _P	t _p		30	s
Ramp-down rate(T _P to T _L)			6	°C/s

Note:

Reflow soldering is recommended at the temperatures and times shown, no more than three times.

Wave soldering



Profile feature	
Average ramp-up rate	~200°C/s
Heating rate during preheat	1°C/s to 2°C/s typical; 4°C/s maximum
Final preheat temperature Ts	~130°C
Preheat time (25°C to Ts)	>60s
Peak temperature Tp	260°C
Time within peak temperature tp	10s
Ramp-down rate	5°C/s maximum

Soldering with hand soldering iron

- Hand soldering iron is only used for product rework or sample testing.
- Hand soldering iron requirements: Temperature: 360 °C±5°C within 3s.

Pcaking

Package Type	Packing Form	Quantity per Tube & Reel	Quantity per Box	Quantity per Carton	Antistatic Bag Specification	Box Specification	Carton Specification	Note
SSOP4	Reel($\phi 330$ mm)	3000 pcs/reel	3 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Leave 20 Spaces at the beginning and 50 Spaces at the end

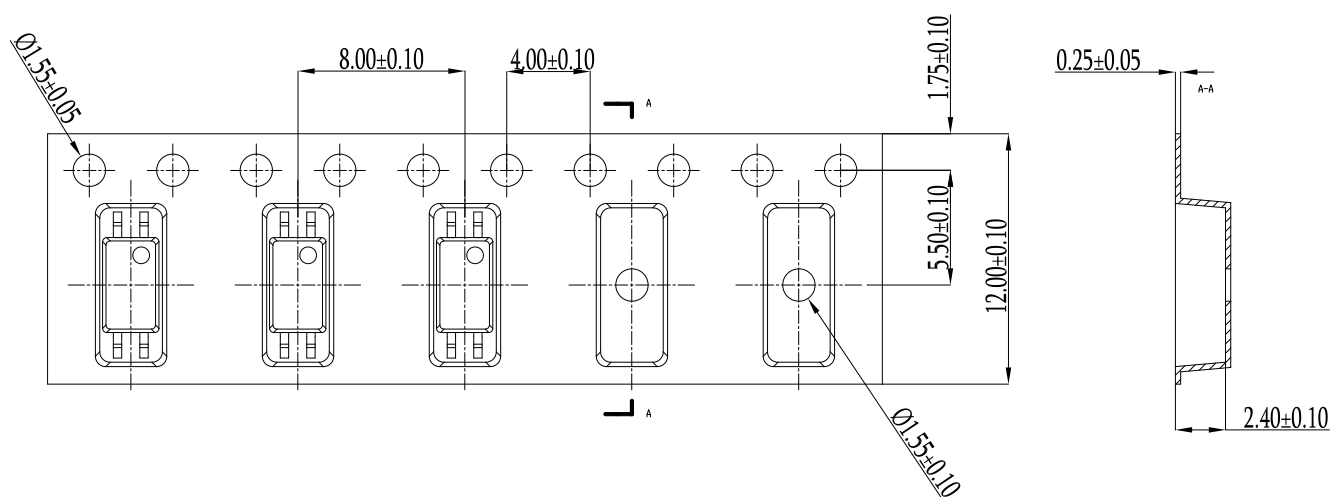
■Summary table

■SSOP4 (Reel)

Qty/reel: 3000 pcs. Qty/box: 9000 pcs.

Qty/ctn : 45000 pcs.

Schematic: (unit:mm)



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