

Features

- Current transfer ratio
(CTR: 50~600% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- High isolation voltage between input and output (Viso = 3750V rms)
- Collector - emitter breakdown voltage $BV_{CEO} \geq 80\text{V}$
- Operating Temperature: $-55^\circ\text{C} \sim 110^\circ\text{C}$

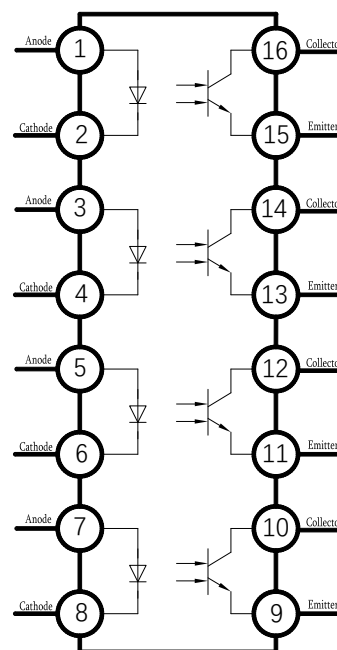
HF

Applications

- DC-DC converter
- Communication equipment
- Programmable controller
- Signal transmission

Mechanical Data

- Case: SSOP16
- Molding Compound: UL Flammability Classification Rating 94V-0
- Terminals: Matte tin-plated leads; solderability-per MIL-STD-202, Method 208



Ordering Information

BL Q3H7 (M) (G) - (U) (N) (Y)

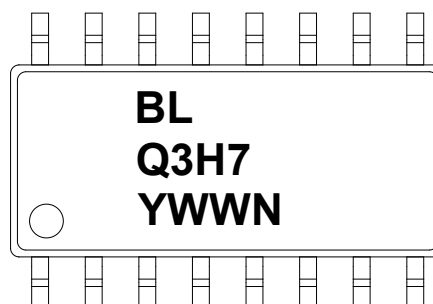
① ② ③ ④ ⑤ ⑥ ⑦

- ① Brand(BL)
- ② Product series(Q3H7)
- ③ Package type(None:SSOP16)
- ④ Halogen option(None :Halogen free)
- ⑤ Lead frame (None: Copper)
- ⑥ Customer option 1 (0-9 or A-Z or none)
- ⑦ Customer option 2 (0-9 or A-Z or none)

Part Number	Package	Shipping Quantity	Marking Code
BLQ3H7	SSOP16	2000 pcs / Tape & Reel	BLQ3H7

Marking Information

- "BL" denotes brand
- "Q3H7" denotes product series
- "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 _{FP}	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}
Operating Temperature	T_{OPR}	-55 ~ +110	°C
Storage Temperature Range	T_{STG}	-55 ~ +125	°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
	Reverse Current	I_R	$V_R = 4\text{V}$	-	-	10	μA
	Terminal Capacitance	C_t	$V = 0\text{V}, f = 1\text{kHz}$	-	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	Current Transfer Ratio	CTR	$I_F = 5\text{mA}, V_{CE} = 5\text{V}$	50	-	600	%
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_F = 10\text{mA}, I_C = 1\text{mA}$	-	0.1	0.2	V
	Isolation Resistance	R_{ISO}	$V_{IO} = 500\text{Vdc}$ 40~60% R.H.	5×10^{10}	1×10^{11}	-	Ω
	Floating Capacitance	C_f	$V = 0, f = 1\text{MHz}$	-	0.3	1.0	pF
	Turn On Time	T_{on}	$V_{CE}=2\text{V}, R_L= 100\Omega$	-	5	18	μs
	Turn Off Time	T_{off}	$I_C=2\text{mA}$	-	3	18	

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

Fig.1 Relative Current Transfer Ratio vs. Forward Current

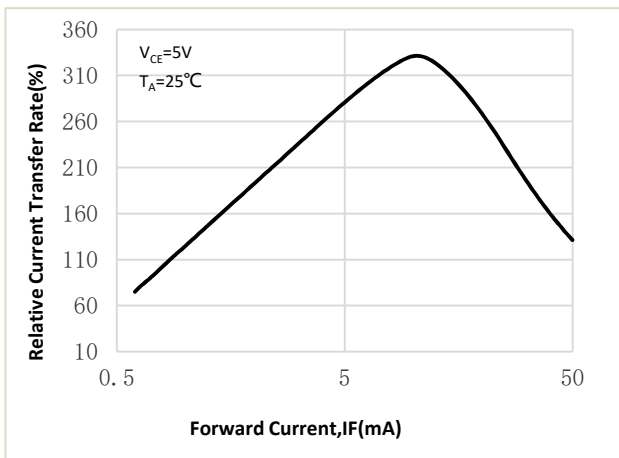


Fig.2 Forward Current vs. Forward Voltage

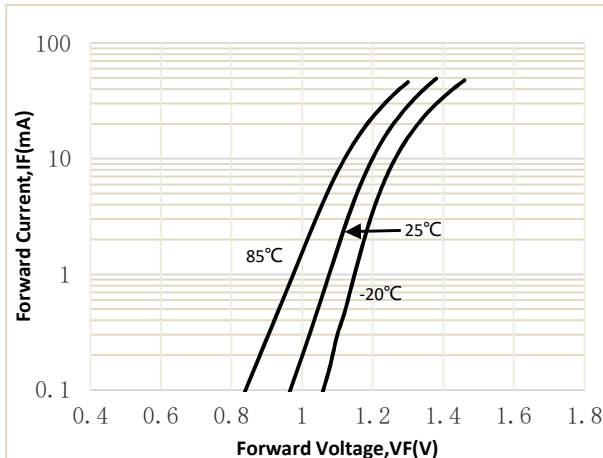


Fig.3 Collector Current vs. Collector-emitter Voltage

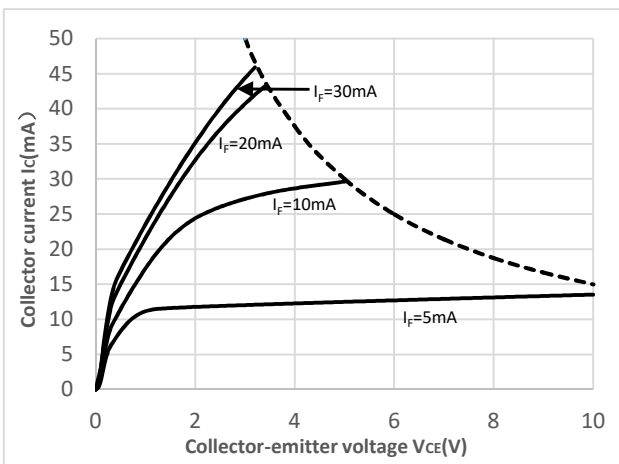


Fig.4 Relative Current Transfer Ratio vs. Ambient Temperature

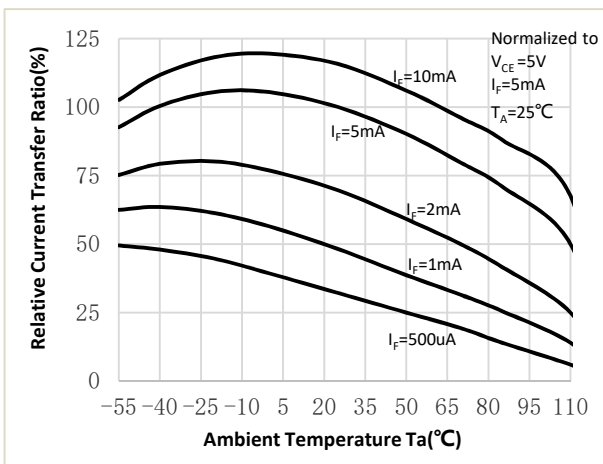


Fig.5 Collector-emitter Saturation Voltage vs. Ambient Temperature

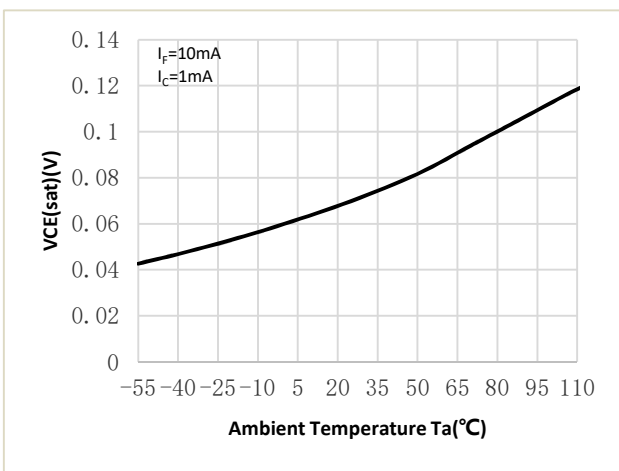


Fig.6 Collector Dark Current vs. Ambient Temperature

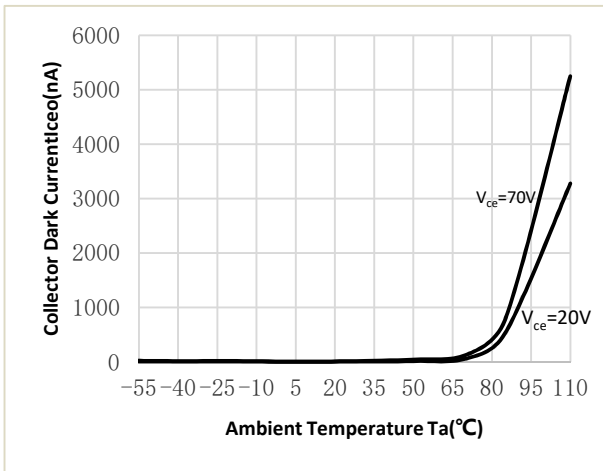


Fig.7 Response Time vs. Load Resistance

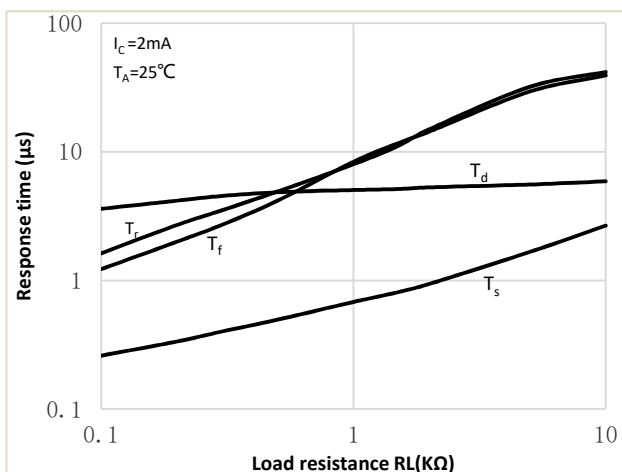


Fig.8 Frequency Response

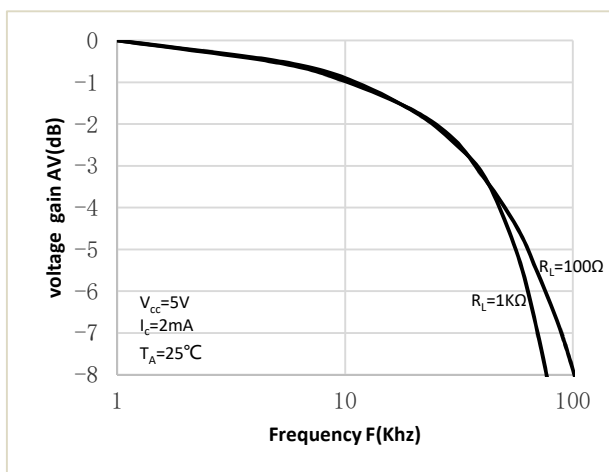


Fig.9 Collector-emitter Saturation Voltage vs. Forward Current

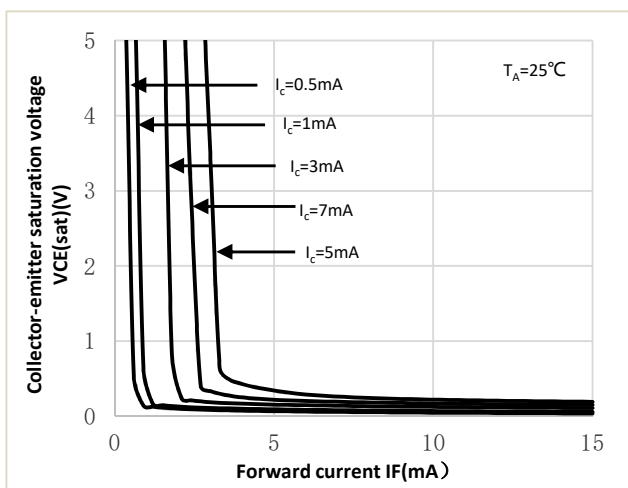
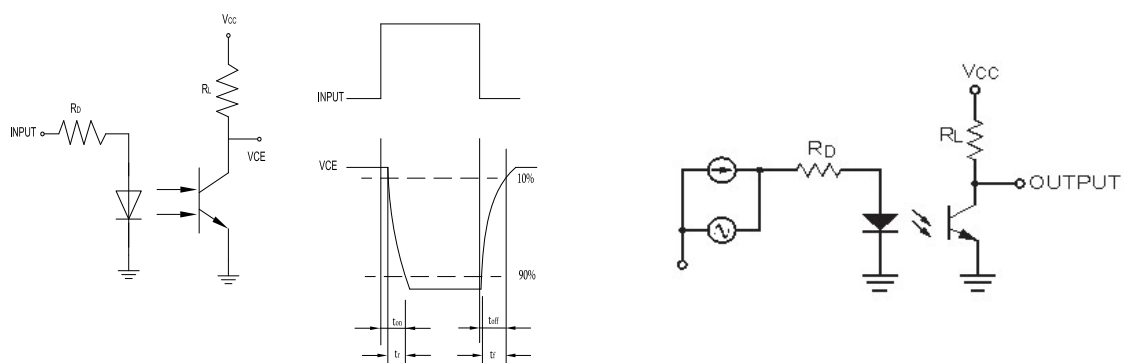
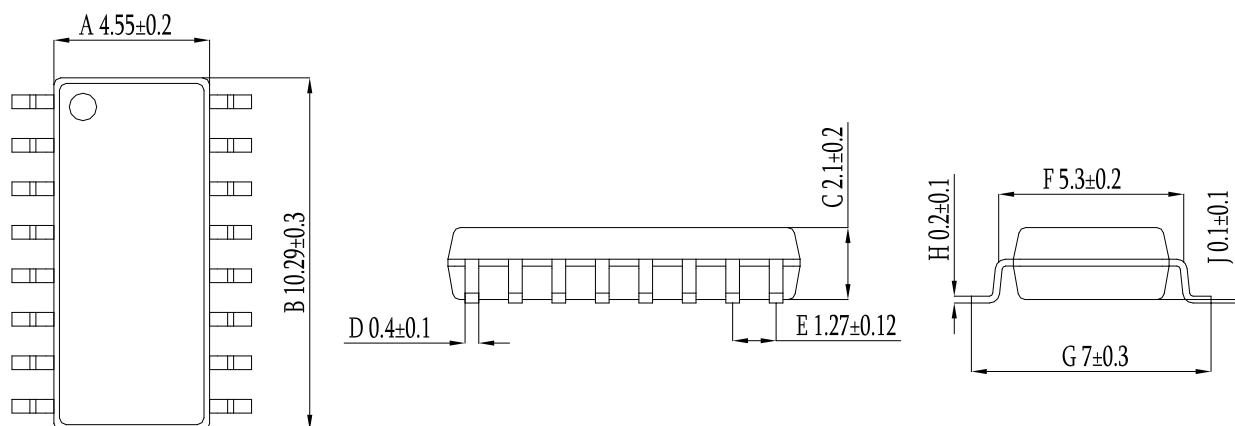


Fig.10 Switching Time Test Circuit & Waveforms

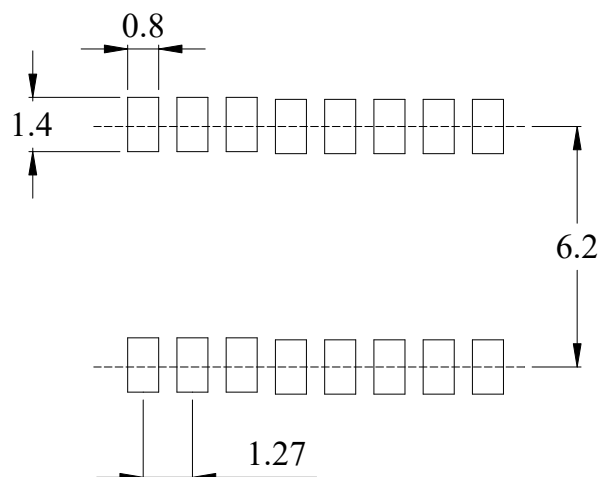


Package Outline Dimensions (unit: mm)

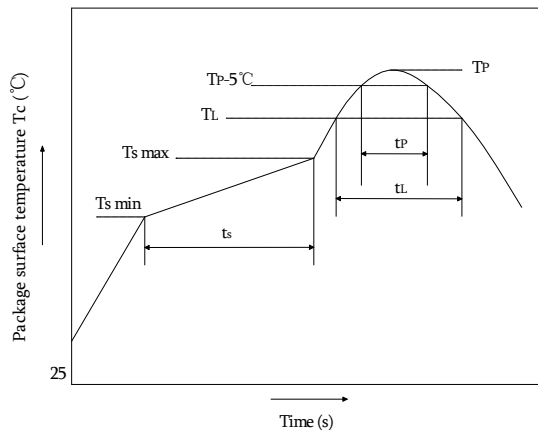
SSOP16



SOLDERING FOOTPRINT (unit: mm)



Reflow soldering

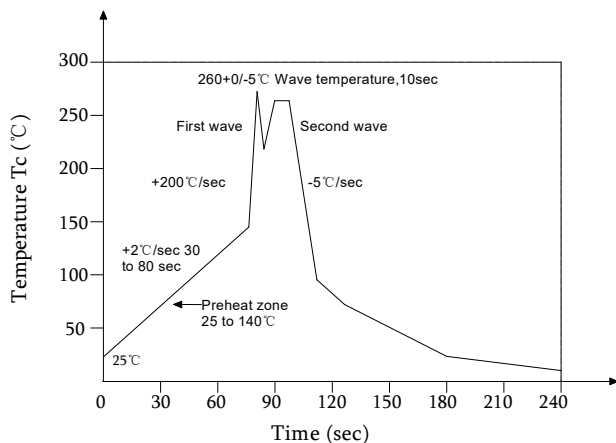


	Symbol	Min	Max	Unit
Preheat temperature	Ts	150	200	°C
Preheat time	ts	60	120	s
Ramp-up rate(T _L to T _P)			3	°C/s
Liquidus temperature	T _L	217		°C
Time above T _L	t _L	60	150	s
Peak temperature	T _P		260	°C
Time during which T _c is between (T _P -5) and T _P	t _p		30	s
Ramp-down rate(T _P to T _L)			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
SSOP16	Reel($\phi 330$ mm)	2000 pcs/reel	2 reels /box	5 boxes /ctn	380*420mm	350*340*60mm	365*330*370mm	Leave 25 Spaces at the beginning and 50 Spaces at the end

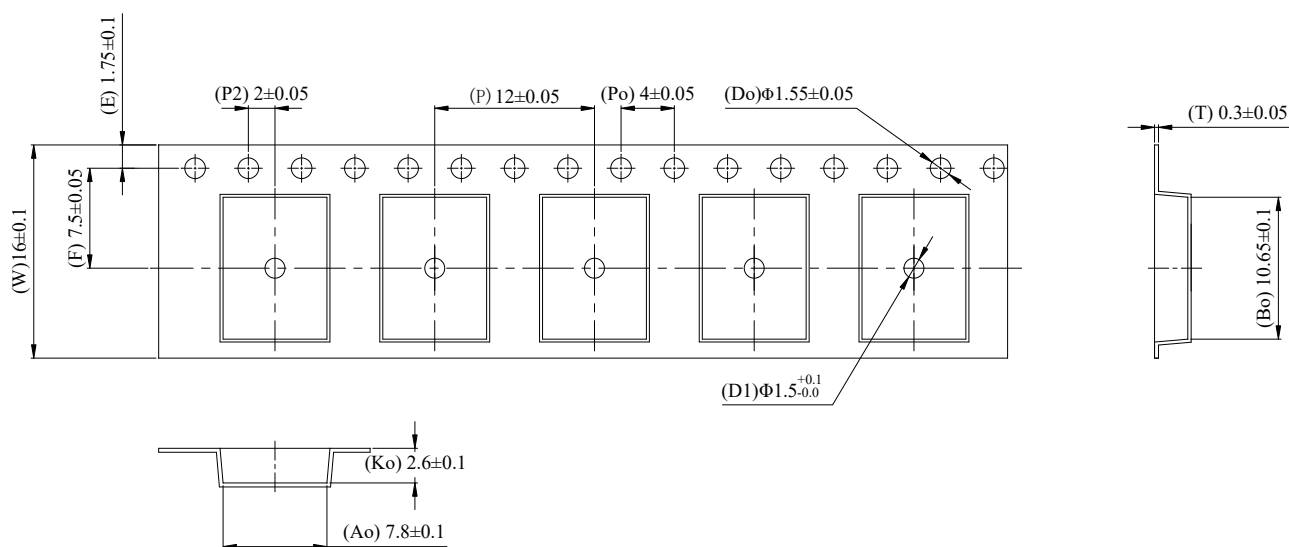
■ Summary table

■ SSOP16 (Reel)

Qty/reel: 2000 pcs. Qty/box: 4000 pcs.

Qty/ctn : 20000 pcs.

Schematic: (unit:mm)



IMPORTANT NOTICE

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