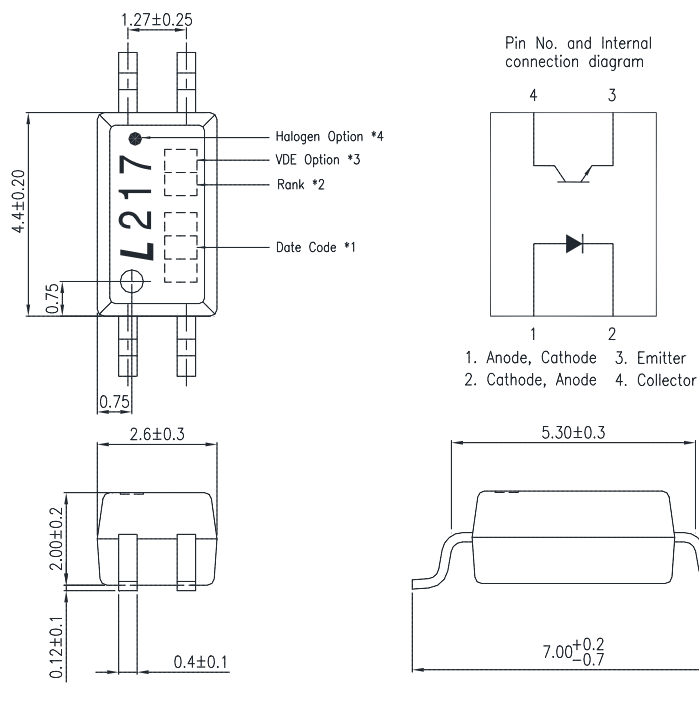


Photocoupler LTV-217-G-AB series

2. PACKAGE DIMENSIONS

2.1 LTV-217-G-AB series



Notes :

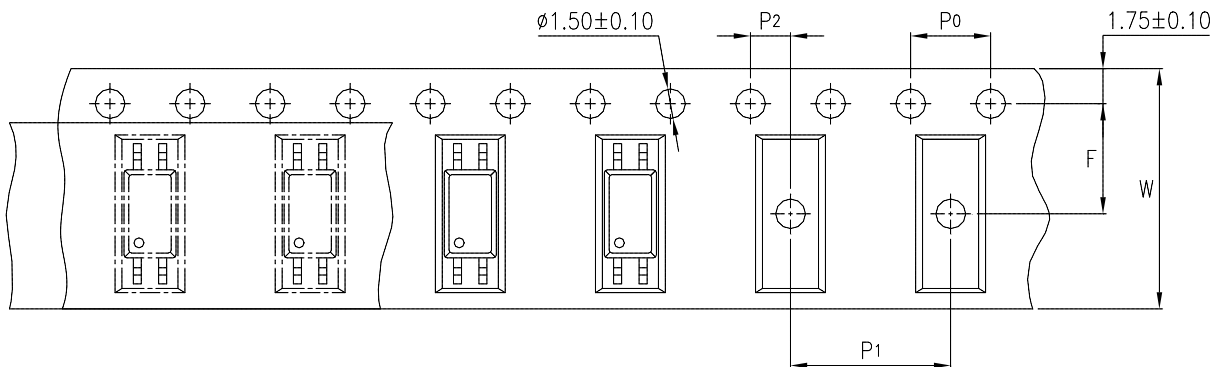
- 3-digit date code.
1-digit year code, Example : 2010 = A, 2011 = B.
2-digit work week ranging from '01' to '53'.
- Rank shall be or shall not be marked
- VDE mark only appears on devices or ordered "V" option.
- "●" indicates Halogen free option.

*All dimensions in millimeters.

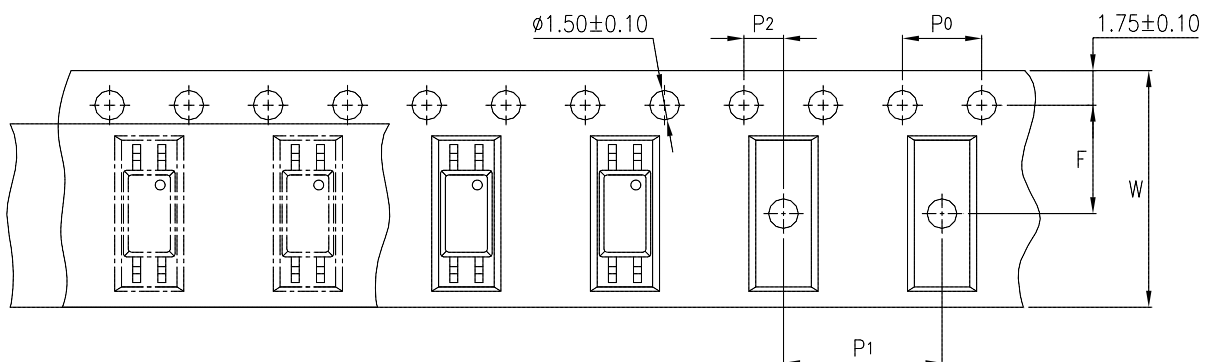
Photocoupler LTV-217-G-AB series

3. TAPING DIMENSIONS

3.1 LTV-217-G-AB series



3.2 LTV-217-TP1-G-AB series



Description	Symbol	Dimension in mm (inch)
Tape wide	W	12±0.3 (0.47)
Pitch of sprocket holes	P ₀	4±0.1 (0.15)
Distance of compartment	F	5.5±0.1 (0.217)
	P ₂	2±0.1 (0.079)
Distance of compartment to compartment	P ₁	8±0.1 (0.315)

Package Type	LTV-217-G-AB series
Quantities (pcs)	3000

Photocoupler LTV-217-G-AB series

4. RATING AND CHARACTERISTICS

4.1 Absolute Maximum Ratings at Ta=25°C

	Parameter	Symbol	Rating	Unit
Input	Forward Current	I_F	50	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation	P	70	mW
Output	Collector - Emitter Voltage	V_{CEO}	80	V
	Emitter - Collector Voltage	V_{ECO}	7	V
	Collector Current	I_C	50	mA
	Collector Power Dissipation	P_C	150	mW
	Total Power Dissipation	P_{tot}	200	mW
1.	Isolation Voltage	V_{iso}	3750	V_{rms}
	Operating Temperature	T_{opr}	-55 ~ +110	°C
	Storage Temperature	T_{stg}	-55 ~ +150	°C
2.	Soldering Temperature	T_{sol}	260	°C

1. AC For 1 Minute, R.H. = 40 ~ 60%

Isolation voltage shall be measured using the following method.

- (1) Short between anode and cathode on the primary side and between collector and emitter on the secondary side.
- (2) The isolation voltage tester with zero-cross circuit shall be used.
- (3) The waveform of applied voltage shall be a sine wave.

2. For 10 Seconds

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4.2 ELECTRICAL OPTICAL CHARACTERISTICS at Ta=25°C

Parameter		Symb	Min.	Typ.	Max.	Unit	Test Condition
Input	Forward Voltage	V _F	—	1.2	1.4	V	I _F =20mA
	Reverse Current	I _R	—	—	10	μA	V _R =4V
	Terminal Capacitance	C _t	—	30	250	pF	V=0, f=1KHz
Output	Collector Dark Current	I _{CEO}	—	—	100	nA	V _{CE} =20V, I _F =0
	Collector-Emitter Breakdown Voltage	BV _{CEO}	80	—	—	V	I _C =0.1mA, I _F =0
	Emitter-Collector Breakdown Voltage	BV _{ECO}	7	—	—	V	I _E =10μA, I _F =0
TRANSFER CHARACTERISTICS	Collector Current	I _C	2.5	—	30	mA	I _F =5mA
	1. Current Transfer Ratio	CTR	50	—	600	%	V _{CE} =5V
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	0.4	V	I _F =8mA I _C =2.4mA
	Isolation Resistance	R _{iso}	5×10 ¹⁰	1×10 ¹¹	—	Ω	DC500V, 40 ~ 60% R.H.
	Floating Capacitance	C _f	—	0.6	1	pF	V=0, f=1MHz
	Response Time (Rise)	t _r	—	2	—	μs	V _{CC} =10V, I _C =2mA
	Response Time (Fall)	t _f	—	3	—	μs	
	Turn-On Time	T _{ON}	—	3	—	μs	
	Turn-Off Time	T _{OFF}	—	3	—	μs	V _{CC} =5V, I _C =16mA R _L =1.9KΩ
	Turn-On Time	t _{ON}	—	2	—	μs	
	Storage Time	T _S	—	25	—	μs	
	Turn-Off Time	t _{OFF}	—	40	—	μs	

$$1. \text{ CTR} = \frac{I_C}{I_F} \times 100\%$$

Photocoupler LTV-217-G-AB series

5. RANK TABLE OF CURRENT TRANSFER RATIO CTR

MODEL NO.	CTR Rank	Min	Max	Condition
LTV-217-G-AB series	A	80	160	$I_F=5mA$, $V_{CE}=5V$, $T_a=25^{\circ}C$
	A1	100	160	
	B	130	260	
	C	200	400	
	D	300	600	
	A or B or C or D or No mark	50	600	

Photocoupler LTV-217-G-AB series

6. CHARACTERISTICS CURVES

Figure 1. Collector Power Dissipation vs. Ambient Temperature

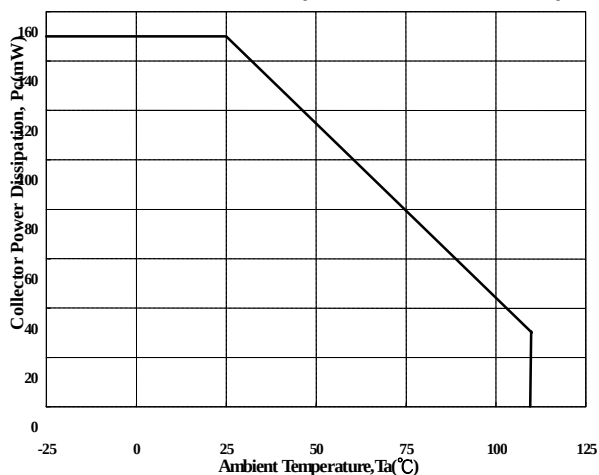


Figure 2. Forward Current vs. Ambient Temperature

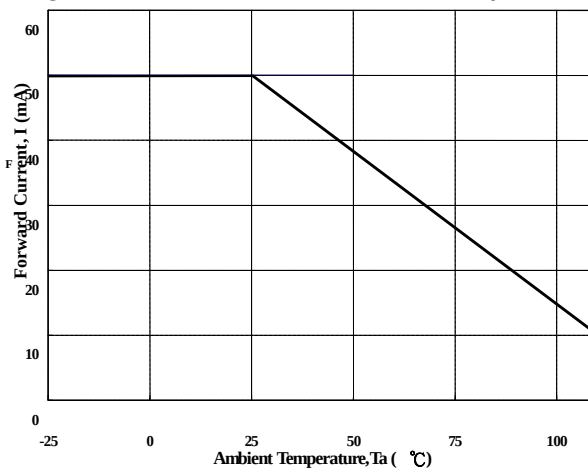


Figure 3. Forward Current vs. Forward Voltage

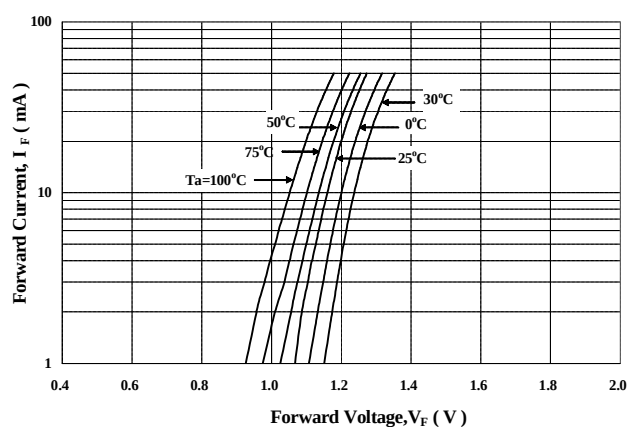


Figure 4. Forward Voltage Temperature Coefficient vs. Forward Current

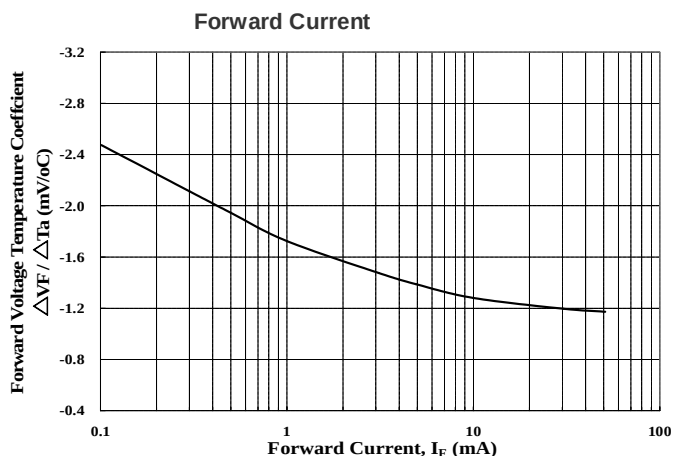


Figure 5. Pulse Forward Current vs. Duty Cycle Ratio

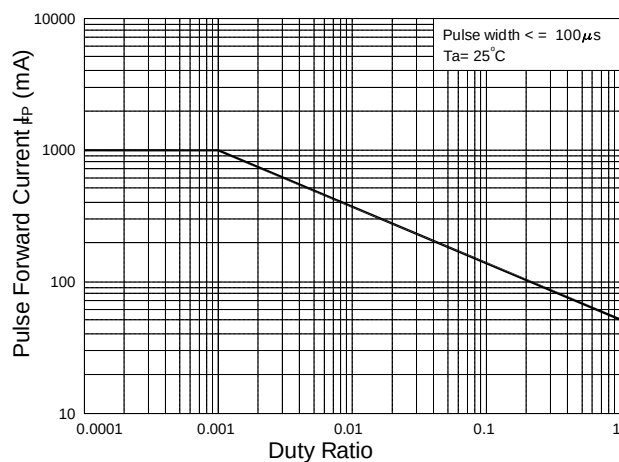
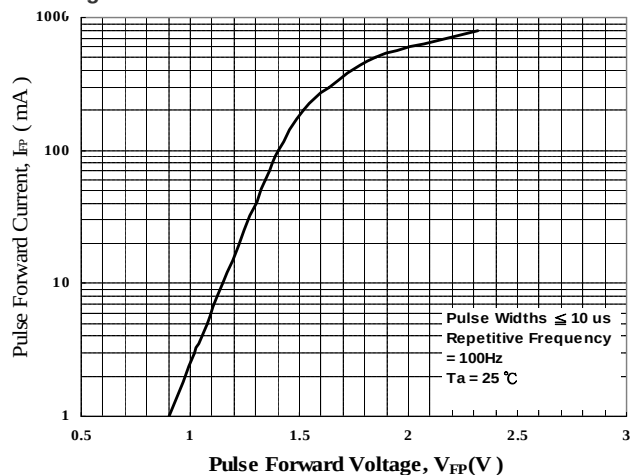


Figure 6. Pulse Forward Current vs. Pulse Forward Voltage



Photocoupler LTV-217-G-AB series

Figure 7. Collector-Emitter Saturation Voltage vs. Forward

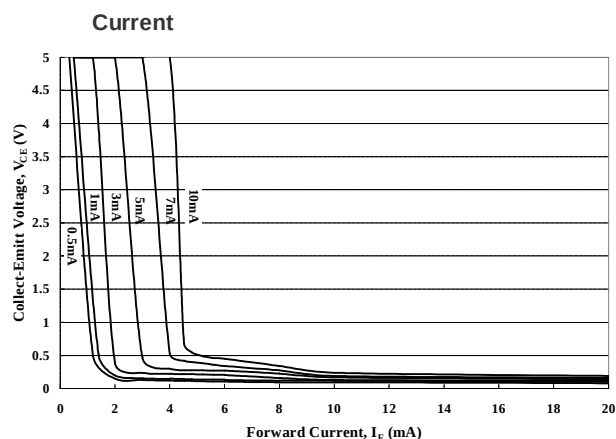


Figure 8. Collector Current vs. Collector-Emitter

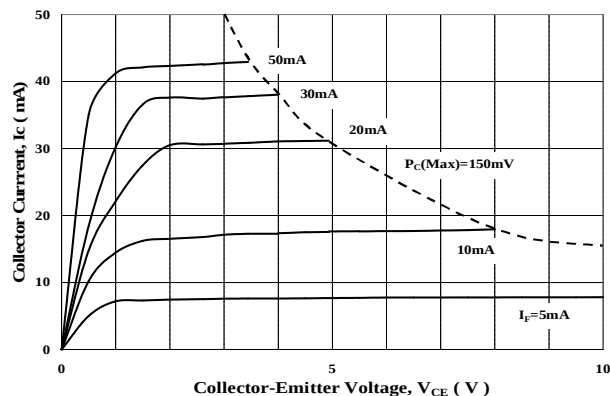


Figure 9. Collector Current vs. Small Collector-Emitter

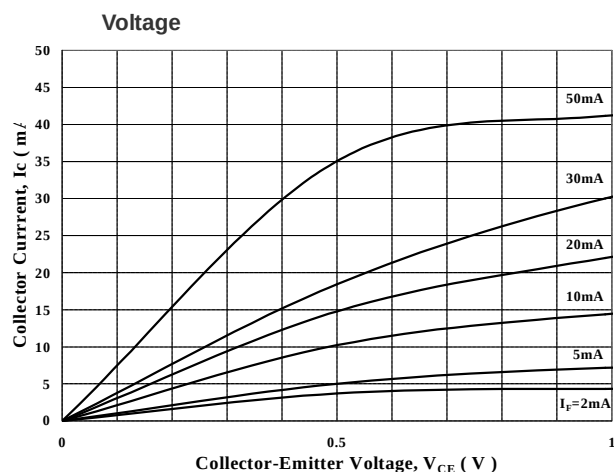


Figure 10. Normalized CTR vs. Forward Current

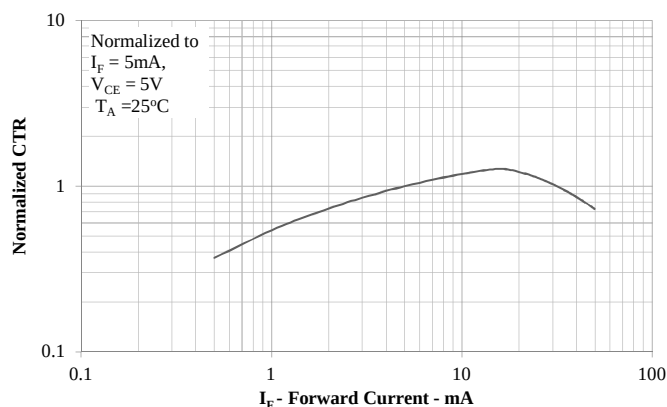


Figure 11. Collector Dark Current vs. Ambient Temperature

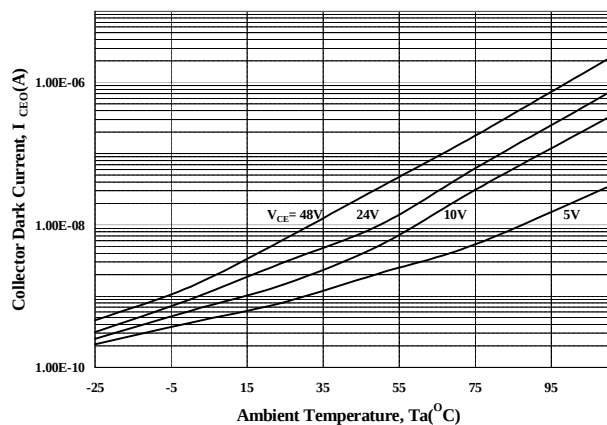
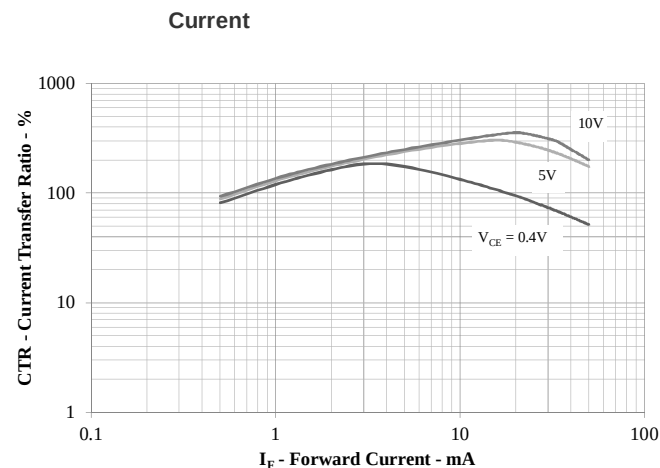


Figure 12. Current Transfer Ratio vs. Forward



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Figure 13. Normalized CTR vs. Ambient Temperature

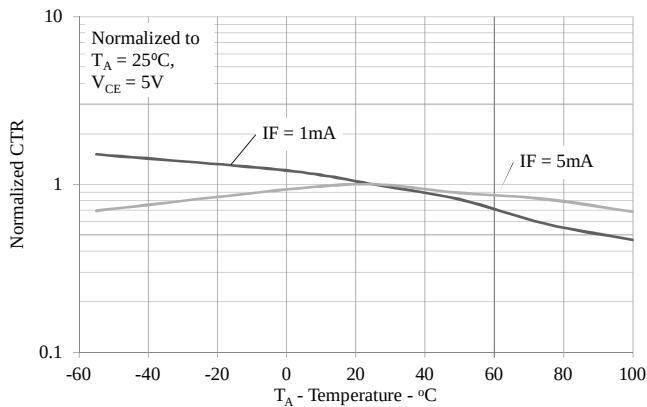


Figure 15. Collector Current vs. Ambient Temperature

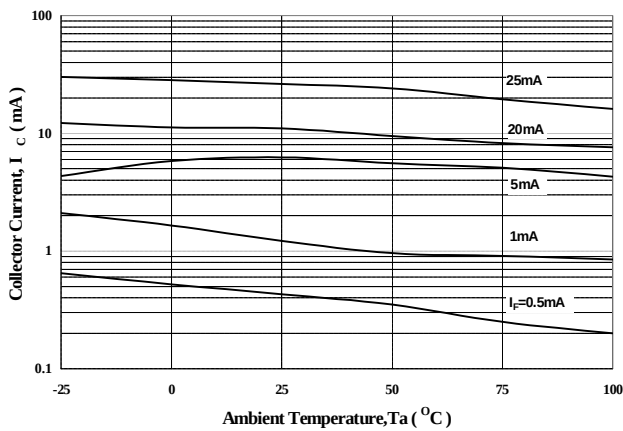


Figure 17. Switching Time vs. Ambient Temperature

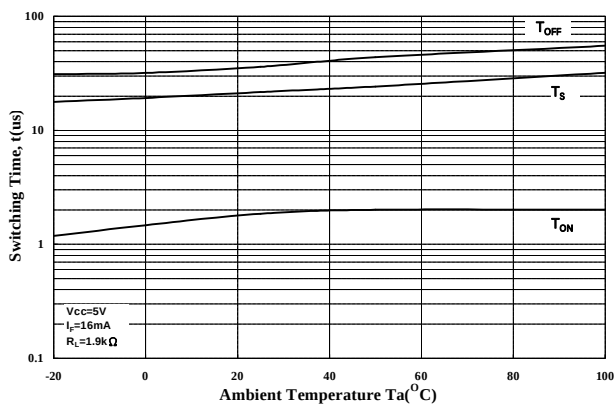


Figure 14. Collector-Emitter Saturation Voltage vs. Ambient Temperature

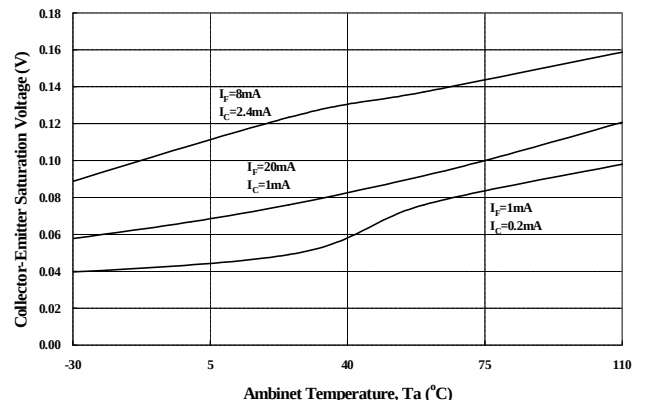


Figure 16. Switching Time vs. Load Resistance

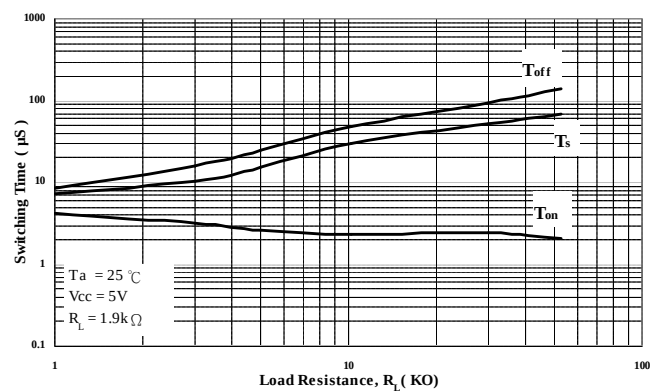
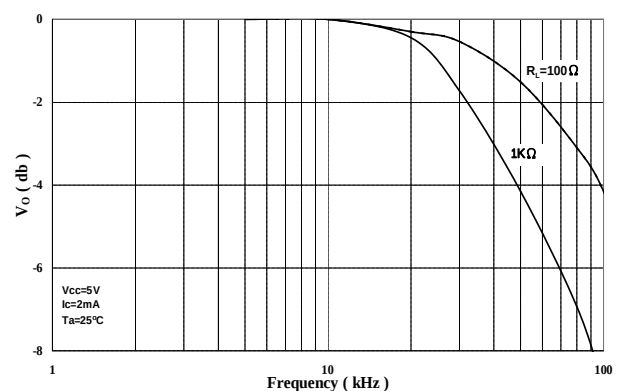
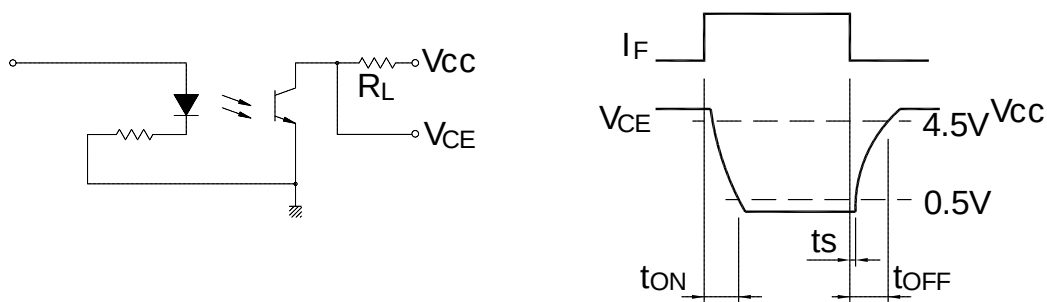


Figure 18. Frequency Response



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7. SWITCHING TIME TEST CIRCUIT



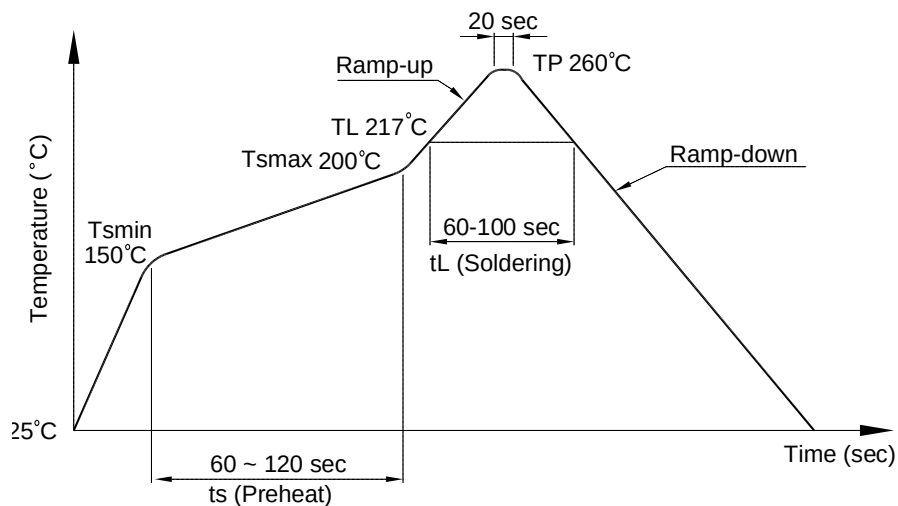
8. TEMPERATURE PROFILE OF SOLDERING

8.1 IR Reflow soldering (JEDEC-STD-020C compliant)

One time soldering reflow is recommended within the condition of temperature and time profile shown below. Do not solder more than three times.

Profile item	Conditions
Preheat	
- Temperature Min (T_{Smin})	150°C
- Temperature Max (T_{Smax})	200°C
- Time (min to max) (t_s)	90±30 sec
Soldering zone	
- Temperature (T_L)	217°C
- Time (t_L)	60 ~100 sec
Peak Temperature (T_P)	260°C
Ramp-up rate	3°C / sec max.
Ramp-down rate	3~6°C / sec

Photocoupler LTV-217-G-AB series



8.2 Wave soldering (JEDEC22A111 compliant)

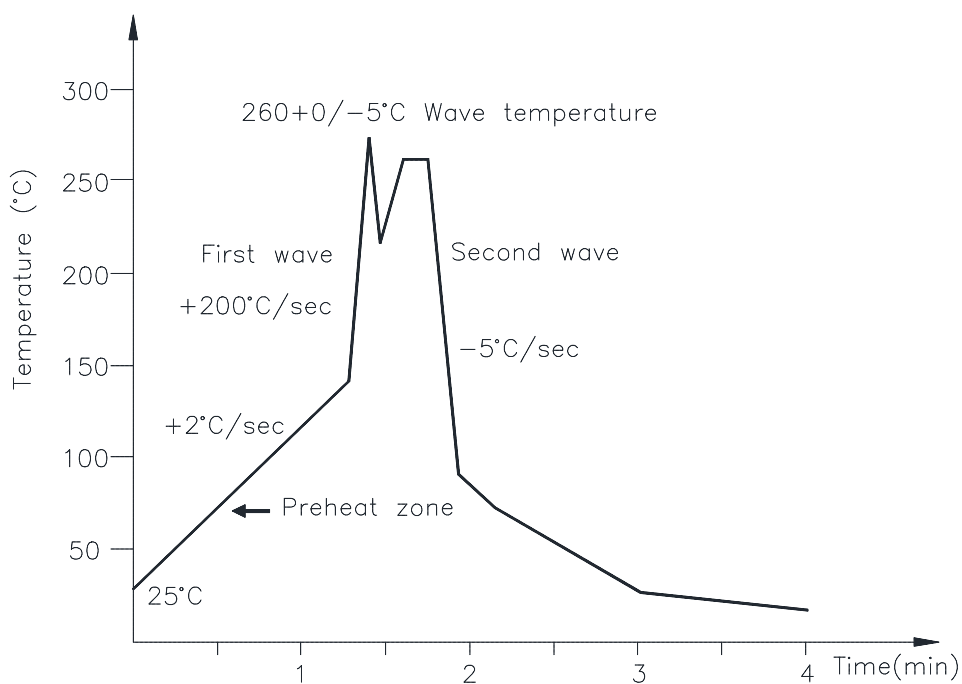
One time soldering is recommended within the condition of temperature.

Temperature: $260 \pm 0/-5^\circ\text{C}$

Time: 10 sec.

Preheat temperature: 25 to 140°C

Preheat time: 30 to 80 sec.



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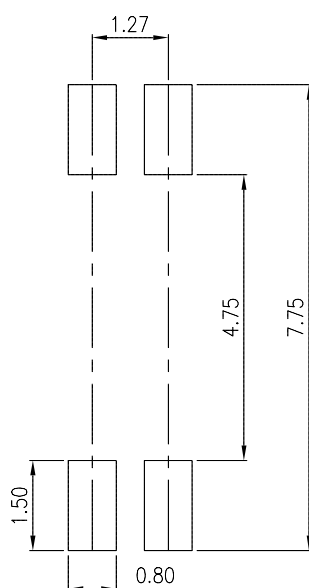
8.3 Hand soldering by soldering iron

Allow single lead soldering in every single process. One time soldering is recommended.

Temperature: 380+0/-5°C

Time: 3 sec max.

9. RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)



Unit: mm

Photocoupler LTV-217-G-AB series

10. NAMING RULE

LTV-217-(1)-(2)-G-AB

DEVICE PART NUMBER

(1) TAPING TYPE (No suffix, TP1)

Please refer to orientation of taping on Page P3

(2) CTR RANK

Please refer to the CTR table on Page P6

(3) Halogen free option

(4) Customer code

Example: LTV-217-TP1-A-G-AB

LTV217(1)(2)-V -G-AB

DEVICE PART NUMBER

(1) TAPING TYPE (No suffix, TP1)

Please refer to orientation of taping on Page P3

(2) CTR RANK

Please refer to the CTR table on Page P6

(3) VDE order option

(4) Halogen free option

(5) Customer code

Example: LTV217TP1A-V-G-AB

11. Notes:

- LiteOn is continually improving the quality, reliability, function or design and LiteOn reserves the right to make changes without further notices.
- The products shown in this publication are designed for the general use in electronic applications such as office automation equipment, communications devices, audio/visual equipment, electrical application and instrumentation.
- For equipment/devices where high reliability or safety is required, such as space applications, nuclear power control equipment, medical equipment, etc, please contact our sales representatives.
- When requiring a device for any "specific" application, please contact our sales in advice.
- If there are any questions about the contents of this publication, please contact us at your convenience.
- The contents described herein are subject to change without prior notice.
- Immerge unit's body in solder paste is not recommended.