Property of LITE-ON Only

FEATURES

```
* Current transfer ratio
(CTR: MIN. 50% at IF=5mA, VCE=5V)
```

* High input-output isolation voltage

$$(V_{iso} = 5,000 Vrms)$$

* Response time

(
$$t_r : TYP. 4\mu s$$
 at $V_{CE} = 2V$, $I_C = 2mA$, $R_L = 100\Omega$)

* Dual-in-line package:

LTV-816: 1-channel type

LTV-826: 2-channel type

LTV-846: 4-channel type

* Wide lead spacing package:

LTV-816M: 1-channel type

LTV-826M: 2-channel type

LTV-846M: 4-channel type

* Surface mounting package:

LTV-816S: 1-channel type

LTV-826S: 2-channel type

LTV-846S: 4-channel type

* Tape and reel packaging:

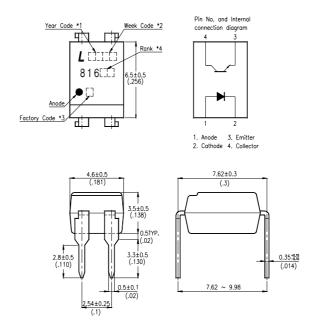
- * UL approved (No. E113898)
- * CSA approved (No. CA91533-1)
- * FIMKO approved (No. 202944)
- * NEMKO approved (No. P98101732)
- * DEMKO approved (No. 307926)
- * SEMKO approved (No. 9833163 / 01-30)
- * VDE approved (No. 094722)

Part No.: LTV-816 / 826 / 846 (M, S, S-TA1) Page: 1 of 13

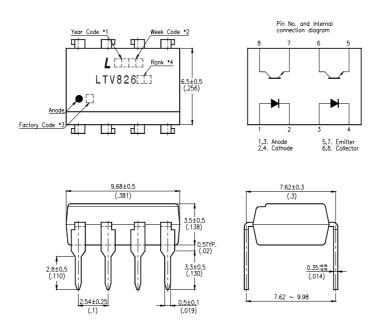
Property of LITE-ON Only

OUTLINE DIMENSIONS

LTV-816:



LTV-826:



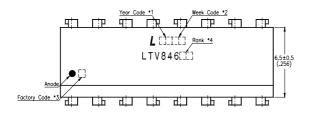
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z: Taiwan, Y: Thailand, X: China).
- *4. Rank shall be or shall not be marked.

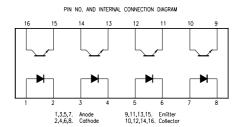
Part No.: LTV-816 / 826 / 846 (M, S, S-TA1) Page: 2 of 13

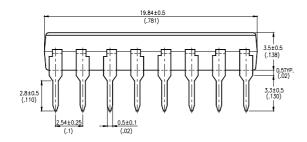
Property of LITE-ON Only

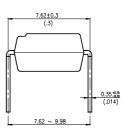
OUTLINE DIMENSIONS

LTV-846:

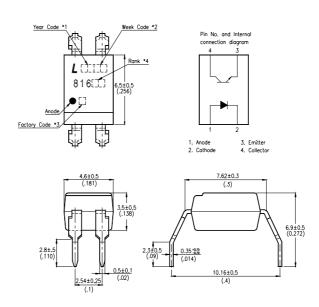








LTV-816M:



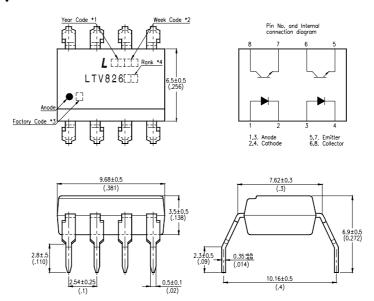
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z: Taiwan, Y: Thailand, X: China).
- *4. Rank shall be or shall not be marked.

Part No.: LTV-816 / 826 / 846 (M, S, S-TA1) Page: 3 of 13

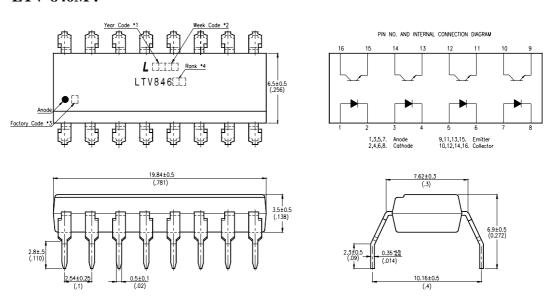
Property of LITE-ON Only

OUTLINE DIMENSIONS

LTV-826M:



LTV-846M:



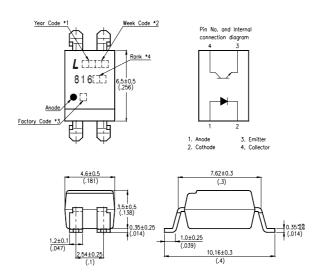
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z: Taiwan, Y: Thailand, X: China).
- *4. Rank shall be or shall not be marked.

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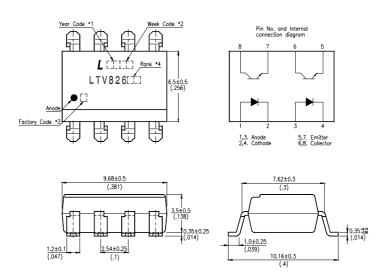
Property of LITE-ON Only

OUTLINE DIMENSIONS

LTV-816S:



LTV-826S:



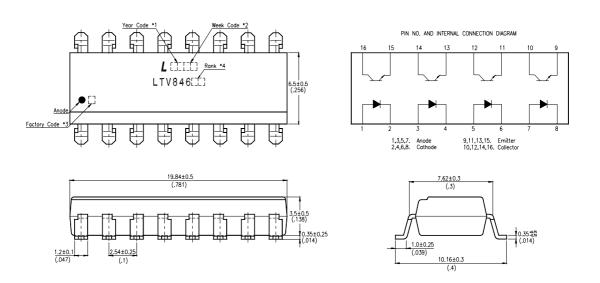
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z: Taiwan, Y: Thailand, X: China).
- *4. Rank shall be or shall not be marked.

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OUTLINE DIMENSIONS

LTV-846S:



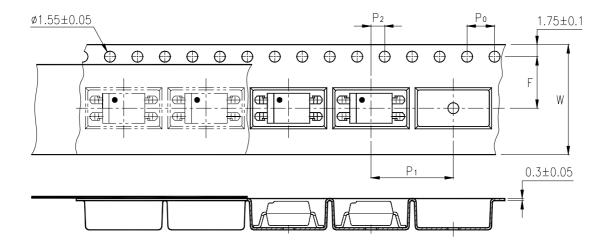
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked (Z: Taiwan, Y: Thailand, X: China).
- *4. Rank shall be or shall not be marked.

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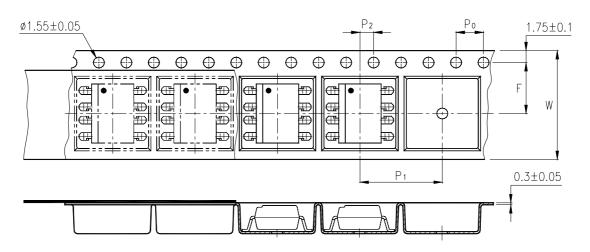
Property of LITE-ON Only

TAPING DIMENSIONS

LTV-816S-TA1:



LTV-826S-TA1:



Description	Symbol	Dimensions in mm (inches)
Tape wide	W	16 ± 0.3 (.63)
Pitch of sprocket holes	P ₀	4 ± 0.1 (.15)
Distance of compartment	F	$7.5 \pm 0.1 \; (.295)$
	P ₂	2 ± 0.1 (.079)
Distance of compartment to compartment	P ₁	12 ± 0.1 (.472)

Part No.: LTV-816 / 826 / 846 (M, S, S-TA1)

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ABSOLUTE MAXIMUM RATING

 $(Ta = 25^{\circ}C)$

	PARAMETER	SYMBOL	RATING	UNIT
	Forward Current	IF	50	mA
INPUT	Reverse Voltage	VR	6	V
·	Power Dissipation	P	70	mW
	Collector - Emitter Voltage	Vceo	80	V
OUTPUT -	Emitter - Collector Voltage	Veco	6	V
	Collector Current	Ic	50	mA
	Collector Power Dissipation	Pc	150	mW
Total Power Dissipation		Ptot	200	mW
*1 Isolation Voltage		Viso	5,000	Vrms
Operating Temperature		T_{opr}	-30 ~ +100	°C
Storage Temperature		Tstg	-55 ~ +125	°C
*2 Soldering Temperature		Tsol	260	°C

*1. AC For 1 Minute, R.H. = $40 \sim 60\%$

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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Property of LITE-ON Only

ELECTRICAL - OPTICAL CHARACTERISTICS

 $(Ta = 25^{\circ}C)$

PAF	RAMETER	SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS	
	Forward Voltage	V _F	_	1.2	1.4	V	I _F =20mA	
INPUT	Reverse Current	IR	_	_	10	μΑ	V _R =4V	
	Terminal Capacitance	Ct	_	30	250	pF	V=0, f=1KHz	
	Collector Dark Current	Iceo	_	_	100	nA	Vce=20V, I _F =0	
OUTPUT	Collector-Emitter Breakdown Voltage BVCEO	80	_	_	V	Ic=0.1mA I _F =0		
	Emitter-Collector Breakdown Voltage	BVeco	6	_	_	V	I _E =10μA I _F =0	
	Collector Current	Ic	2.5	_	30	mA	I _F =5mA	
	*1 Current Transfer Ratio	CTR	50		600	%	V _{CE} =5V	
	Collector-Emitter Saturation Voltage	VCE(sat)	_	0.1	0.2	V	I _F =20mA I _C =1mA	
TRANSFER CHARACTERISTICS	Isolation Resistance	Riso	5×10 ¹⁰	1×10 ¹¹	_	Ω	DC500V 40 ~ 60% R.H.	
CHARACTERISTICS	Floating Capacitance	Cf	_	0.6	1	pF	V=0, f=1MHz	
	Cut-Off Frequency	fc	_	80	_	kHz	V _{CE} =5V, I _C =2mA R _L =100Ω, -3dB	
	Response Time (Rise)	t r	_	4	18	μs	Vce=2V, Ic=2mA	
	Response Time (Fall)	t f	_	3	18	μs	R _L =100Ω	

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

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Property of LITE-ON Only

RANK TABLE OF CURRENT TRANSFER RATIO CTR

MODEL NO.	RANK MARK	CTR (%)	
LTV-816	L	50 ~ 100	
LTV-816	A	80 ~ 160	
LTV-816	В	130 ~ 260	
LTV-816	С	200 ~ 400	
LTV-816	D	300 ~ 600	
LTV-816	L or A or B or C or D	50 ~ 600	
LTV-8 6	В	130 ~ 260	
LTV-8 6	B or C or BC	130 ~ 400	
LTV-8 6	С	200 ~ 400	
LTV-8 6	C or D or CD	200 ~ 600	
LTV-8 6	B, BC, C, CD or No mark	50 ~ 600	

= 2 or 4

	$I_F = 5 \text{ mA}$
CONDITIONS	$V_{CE} = 5 V$
	Ta = 25 °C

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Property of LITE-ON Only

CHARACTERISTICS CURVES

Fig.1 Forword Current vs. Ambient Temperatute

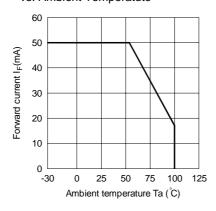


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

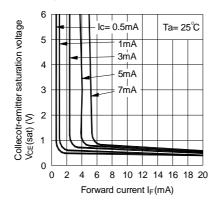


Fig.5 Current Transfer Ratio vs.
Forward Current

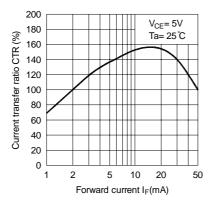


Fig.2 Collector Power Dissiption vs. Ambient Temperature

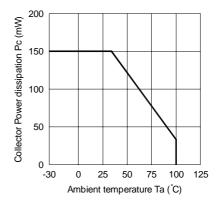


Fig.4 Forward Current vs. Forward Voltage

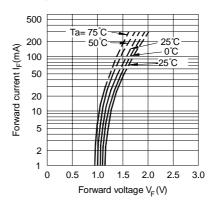
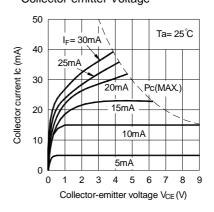


Fig.6 Collector Current vs.

Collector-emitter Voltage



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CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

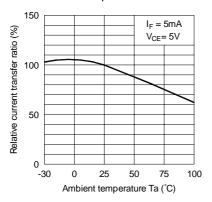


Fig.9 Collector Dark Current vs.

Ambient Temperature

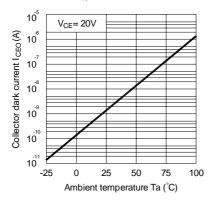


Fig.11 Frequency Response

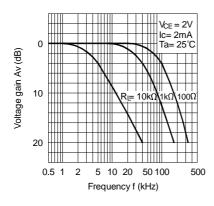


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

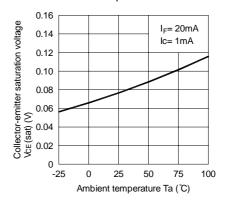
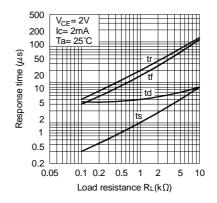
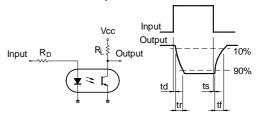


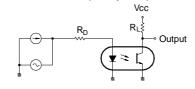
Fig.10 Response Time vs. Load Resistance



Test Circuit for Response Time



Test Circuit for Frequency Response



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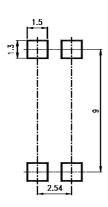
Property of LITE-ON Only

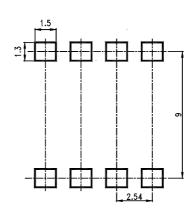
RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

Unit: mm

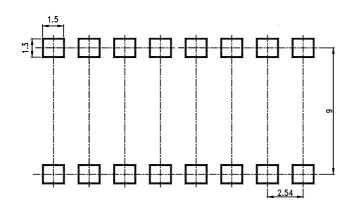
4 PIN







16 PIN



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BNS-OD-C131/A4