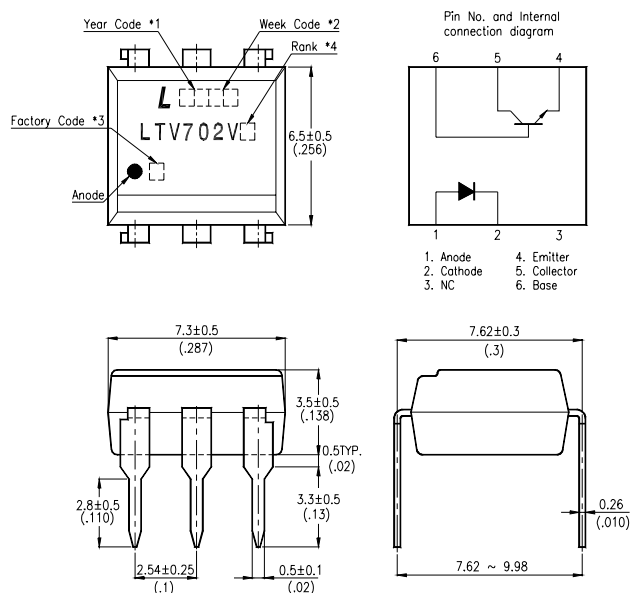


## **FEATURES**

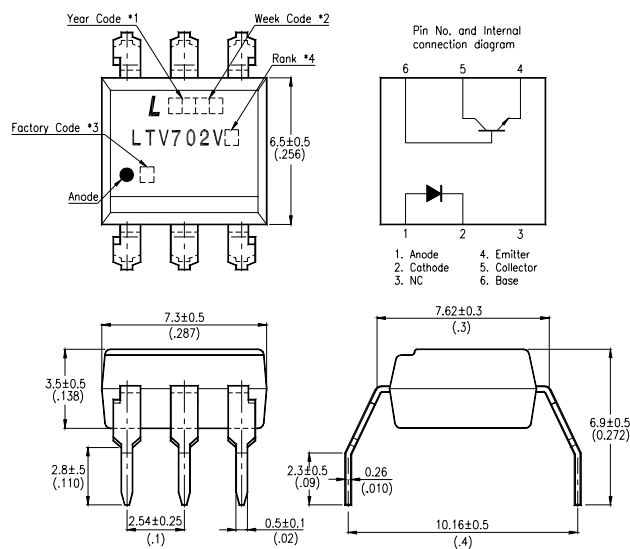
- \* Directly connectable to TTL
- \* High collector-emitter voltage  
(  $V_{CEO} = 70V$  )
- \* High input-output isolation voltage  
(  $V_{iso} = 5,000V_{rms}$  )
- \* Response time  
(  $t_r$  : TYP.  $2\mu s$  at  $V_{CC} = 5V$ ,  $I_F = 10mA$ ,  $R_L = 75\Omega$  )
- \* Current transfer ratio  
( CTR : MIN. 40% at  $I_F = 10mA$ ,  $V_{CE} = 5V$  )
- \* Dual-in-line package :  
LTV-702V
- \* Wide lead spacing package :  
LTV-702VM
- \* Surface mounting package :  
LTV-702VS
- \* Tape and reel packaging :  
LTV-702VS-TA1
- \* UL approved ( No. E113898 )
- \* TUV approved ( No. R9653630 )
- \* CSA approved ( No. CA91533-1 )
- \* FIMKO approved ( No. 193422-01 )
- \* NEMKO approved ( No. P96103013 )
- \* DEMKO approved ( No. 303968 )
- \* SEMKO approved ( No. 9646047 / 01-30 )
- \* VDE approved ( No. 094722 )

## OUTLINE DIMENSIONS

### LTV-702V :



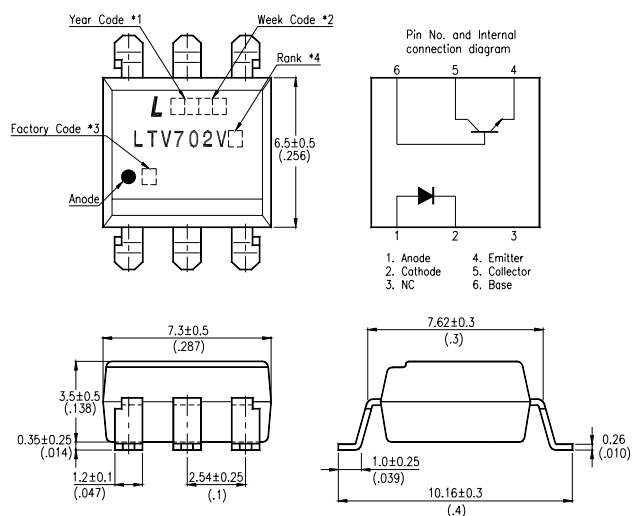
### LTV-702VM :



- \*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.

## OUTLINE DIMENSIONS

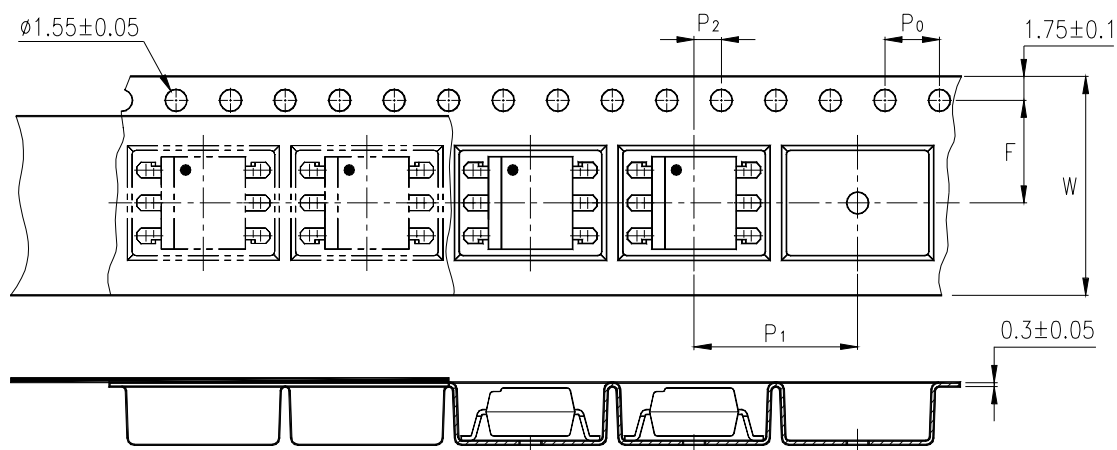
LTV-702VS :



- \*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.

## TAPING DIMENSIONS

### LTV-702VS-TA1 :



| Description                            | Symbol | Dimensions in mm ( inches ) |
|----------------------------------------|--------|-----------------------------|
| Tape wide                              | W      | $16 \pm 0.3$ ( .63 )        |
| Pitch of sprocket holes                | $P_0$  | $4 \pm 0.1$ ( .15 )         |
| Distance of compartment                | F      | $7.5 \pm 0.1$ ( .295 )      |
| Distance of compartment to compartment | $P_1$  | $2 \pm 0.1$ ( .079 )        |
|                                        |        | $12 \pm 0.1$ ( .472 )       |

## ABSOLUTE MAXIMUM RATING

( Ta = 25°C )

| PARAMETER                |                             | SYMBOL           | RATING     | UNIT             |
|--------------------------|-----------------------------|------------------|------------|------------------|
| INPUT                    | Forward Current             | I <sub>F</sub>   | 60         | mA               |
|                          | Reverse Voltage             | V <sub>R</sub>   | 6          | V                |
|                          | Power Dissipation           | P                | 105        | mW               |
| OUTPUT                   | Collector - Emitter Voltage | V <sub>CEO</sub> | 70         | V                |
|                          | Emitter - Collector Voltage | V <sub>ECO</sub> | 6          | V                |
|                          | Collector - Base Voltage    | V <sub>CBO</sub> | 70         | V                |
|                          | Emitter - Base Voltage      | V <sub>EBO</sub> | 6          | V                |
|                          | Collector Current           | I <sub>C</sub>   | 50         | mA               |
|                          | Collector Power Dissipation | P <sub>C</sub>   | 160        | mW               |
| Total Power Dissipation  |                             | P <sub>tot</sub> | 200        | mW               |
| *1 Isolation Voltage     |                             | V <sub>iso</sub> | 5,000      | V <sub>rms</sub> |
| Operating Temperature    |                             | T <sub>opr</sub> | -55 ~ +100 | °C               |
| Storage Temperature      |                             | T <sub>stg</sub> | -55 ~ +150 | °C               |
| *2 Soldering Temperature |                             | T <sub>sol</sub> | 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, emitter and base 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

## ELECTRICAL - OPTICAL CHARACTERISTICS

( Ta = 25°C )

| PARAMETER                |                                      | SYMBOL               | MIN.               | TYP.               | MAX. | UNIT | CONDITIONS                                                             |
|--------------------------|--------------------------------------|----------------------|--------------------|--------------------|------|------|------------------------------------------------------------------------|
| INPUT                    | Forward Voltage                      | V <sub>F</sub>       | —                  | 1.4                | 1.7  | V    | I <sub>F</sub> =60mA                                                   |
|                          | Reverse Current                      | I <sub>R</sub>       | —                  | —                  | 10   | μA   | V <sub>R</sub> =6V                                                     |
|                          | Terminal Capacitance                 | C <sub>t</sub>       | —                  | 30                 | 250  | pF   | V=0, f=1KHz                                                            |
| OUTPUT                   | Collector Dark Current               | I <sub>CEO</sub>     | —                  | —                  | 50   | nA   | V <sub>CE</sub> =10V, I <sub>F</sub> =0                                |
|                          | Collector-Emitter Breakdown Voltage  | BV <sub>CEO</sub>    | 70                 | —                  | —    | V    | I <sub>C</sub> =0.1mA<br>I <sub>F</sub> =0                             |
|                          | Emitter-Collector Breakdown Voltage  | BV <sub>ECO</sub>    | 6                  | —                  | —    | V    | I <sub>E</sub> =10μA<br>I <sub>F</sub> =0                              |
|                          | Collector-Base Breakdown Voltage     | BV <sub>CBO</sub>    | 70                 | —                  | —    | V    | I <sub>C</sub> =0.1mA<br>I <sub>F</sub> =0                             |
| TRANSFER CHARACTERISTICS | Collector Current                    | I <sub>C</sub>       | 4                  | —                  | 32   | mA   | I <sub>F</sub> =10mA<br>V <sub>CE</sub> =5V                            |
|                          | * Current Transfer Ratio             | CTR                  | 40                 | —                  | 320  | %    |                                                                        |
|                          | Collector-Emitter Saturation Voltage | V <sub>CE(sat)</sub> | —                  | 0.25               | 0.4  | V    | I <sub>F</sub> =10mA<br>I <sub>C</sub> =2.5mA                          |
|                          | Isolation Resistance                 | R <sub>iso</sub>     | 5×10 <sup>10</sup> | 1×10 <sup>11</sup> | —    | Ω    | DC500V<br>40 ~ 60% R.H.                                                |
|                          | Floating Capacitance                 | C <sub>f</sub>       | —                  | 0.6                | 1    | pF   | V=0, f=1MHz                                                            |
|                          | Cut-Off Frequency                    | f <sub>c</sub>       | —                  | 150                | —    | kHz  | V <sub>CC</sub> =5V, I <sub>F</sub> =10mA<br>R <sub>L</sub> =75Ω, -3dB |
|                          | Response Time (Rise)                 | t <sub>r</sub>       | —                  | 2                  | 7    | μs   | V <sub>CC</sub> =5V, I <sub>F</sub> =10mA<br>R <sub>L</sub> =75Ω       |
|                          | Response Time (Fall)                 | t <sub>f</sub>       | —                  | 2                  | 8    | μs   |                                                                        |

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

**RANK TABLE OF CURRENT TRANSFER RATIO CTR**

| MODEL NO. | RANK MARK                   | CTR ( % ) |
|-----------|-----------------------------|-----------|
| LTV-702V  | A                           | 40 ~ 80   |
| LTV-702V  | B                           | 63 ~ 125  |
| LTV-702V  | C                           | 100 ~ 200 |
| LTV-702V  | D                           | 160 ~ 320 |
| LTV-702V  | A or B or C or D or No mark | 40 ~ 320  |

|                   |                                                                                      |
|-------------------|--------------------------------------------------------------------------------------|
| <b>CONDITIONS</b> | $I_F = 10 \text{ mA}$<br>$V_{CE} = 5 \text{ V}$<br>$T_a = 25 \text{ }^\circ\text{C}$ |
|-------------------|--------------------------------------------------------------------------------------|

## CHARACTERISTICS CURVES

Fig.1 Forward Current vs.  
Ambient Temperature

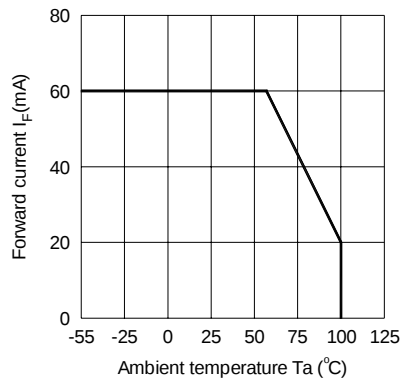


Fig.2 Collector Power Dissipation vs.  
Ambient Temperature

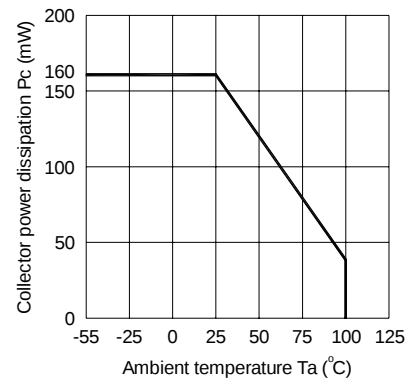


Fig.3 Collector-emitter Saturation  
Voltage vs. Forward Current

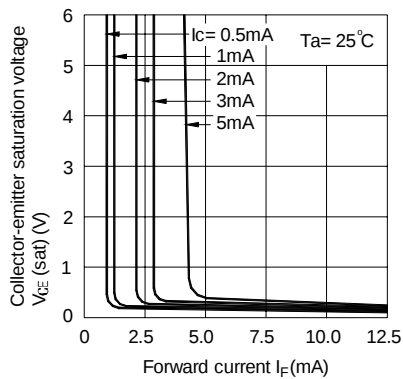


Fig.4 Forward Current vs.  
Forward Voltage

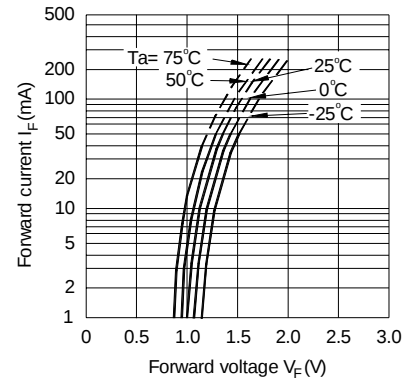


Fig.5 Current Transfer Ratio vs.  
Forward Current

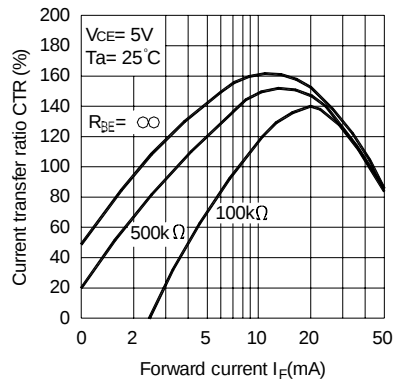
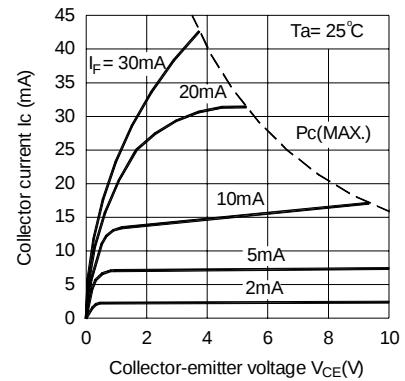


Fig.6 Collector Current vs.  
Collector-emitter Voltage



## CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

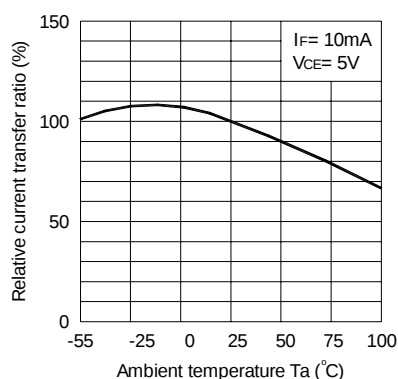


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

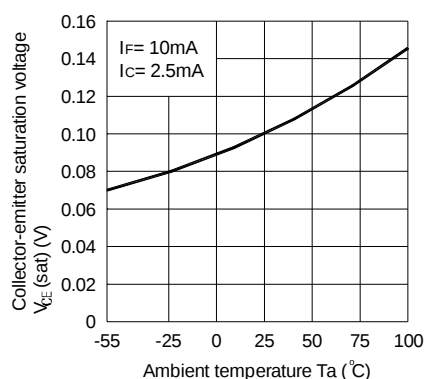


Fig.9 Collector Dark Current vs. Ambient Temperature

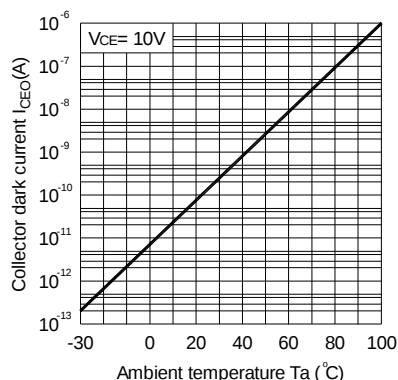


Fig.10 Response Time vs. Load Resistance

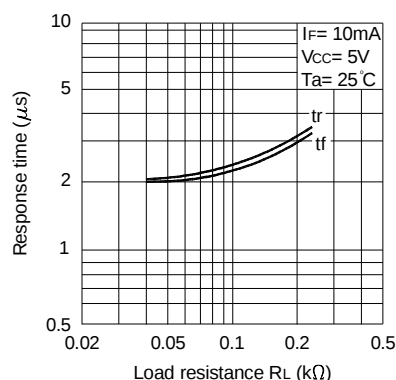
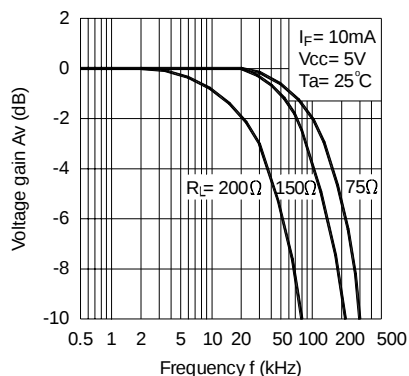
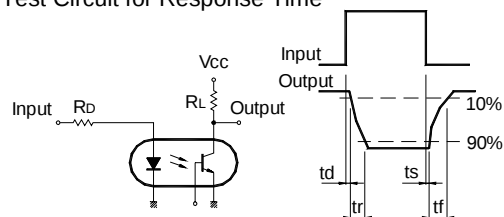


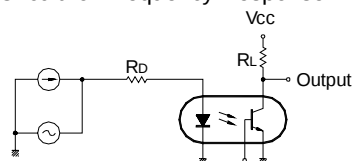
Fig.11 Frequency Response



Test Circuit for Response Time

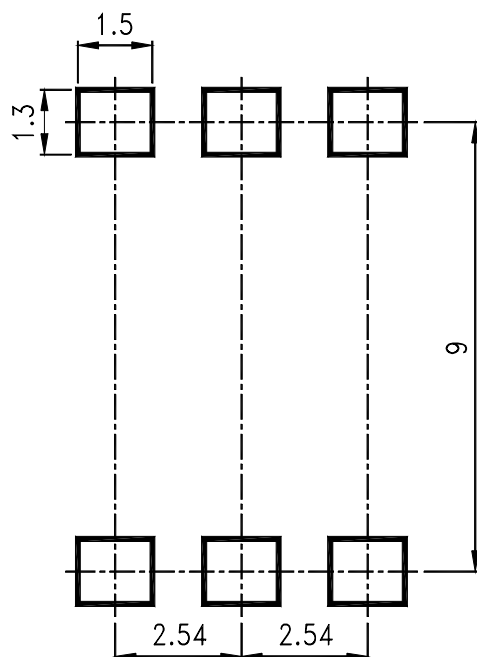


Test Circuit for Frequency Response



## RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

Unit : mm



## Данный компонент на территории Российской Федерации

**Вы можете приобрести в компании MosChip.**

Для оперативного оформления запроса Вам необходимо перейти по данной ссылке:

<http://moschip.ru/get-element>

Вы можете разместить у нас заказ для любого Вашего проекта, будь то серийное производство или разработка единичного прибора.

В нашем ассортименте представлены ведущие мировые производители активных и пассивных электронных компонентов.

Нашей специализацией является поставка электронной компонентной базы двойного назначения, продукции таких производителей как XILINX, Intel (ex.ALTERA), Vicor, Microchip, Texas Instruments, Analog Devices, Mini-Circuits, Amphenol, Glenair.

Сотрудничество с глобальными дистрибьюторами электронных компонентов, предоставляет возможность заказывать и получать с международных складов практически любой перечень компонентов в оптимальные для Вас сроки.

На всех этапах разработки и производства наши партнеры могут получить квалифицированную поддержку опытных инженеров.

Система менеджмента качества компании отвечает требованиям в соответствии с ГОСТ Р ИСО 9001, ГОСТ РВ 0015-002 и ЭС РД 009

### Офис по работе с юридическими лицами:

105318, г.Москва, ул.Щербаковская д.3, офис 1107, 1118, ДЦ «Щербаковский»

Телефон: +7 495 668-12-70 (многоканальный)

Факс: +7 495 668-12-70 (доб.304)

E-mail: [info@moschip.ru](mailto:info@moschip.ru)

Skype отдела продаж:

moschip.ru

moschip.ru\_4

moschip.ru\_6

moschip.ru\_9