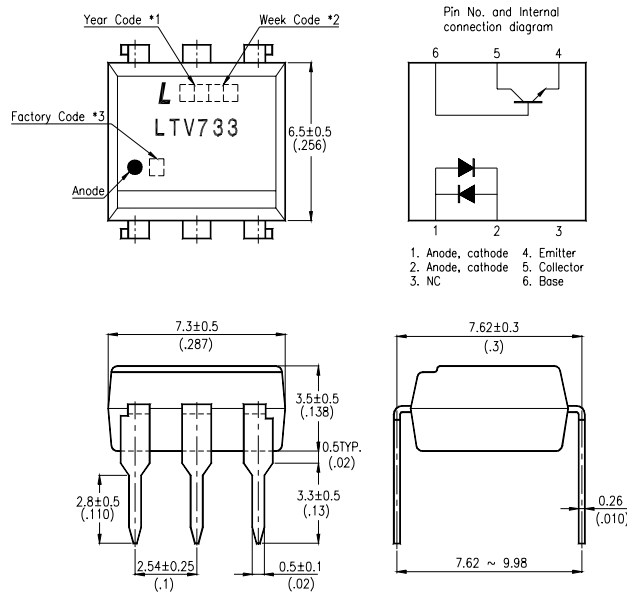


## FEATURES

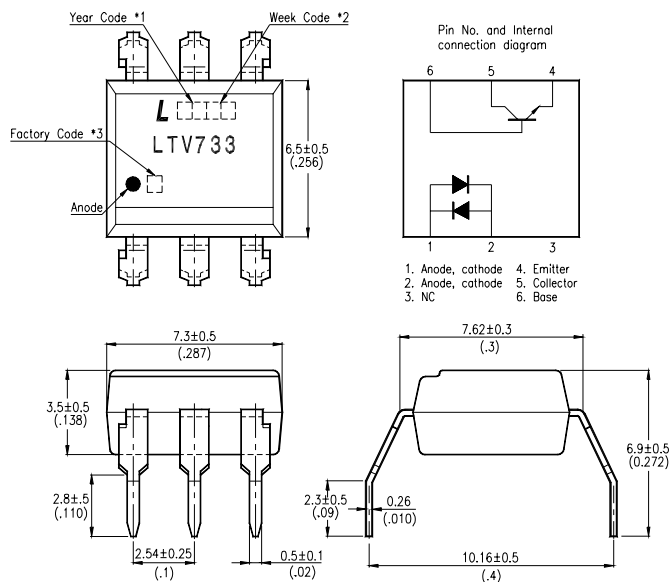
- \* Directly connectable to TTL
- \* AC input response
- \* High input-output isolation voltage  
(  $V_{iso} = 5,000V_{rms}$  )
- \* Low collector dark current  
(  $I_{CEO} : \text{MAX. } 10^{-7}A \text{ at } V_{CE} = 20V$  )
- \* Current transfer ratio  
(  $CTR : \text{MIN. } 20\% \text{ at } I_F = \pm 1mA, V_{CE} = 5V$  )
- \* Response time  
(  $t_r : \text{TYP. } 4\mu s \text{ at } V_{CE} = 2V, I_C = 2mA, R_L = 100\Omega$  )
- \* Dual-in-line package :  
LTV-733
- \* Wide lead spacing package :  
LTV-733M
- \* Surface mounting package :  
LTV-733S
- \* Tape and reel packaging :  
LTV-733S-TA1
- \* UL approved ( No. E113898 )
- \* VDE approved ( No. 094722 )
- \* CSA approved ( No. CA91533-1 )
- \* FIMKO approved ( No. 203512 )
- \* NEMKO approved ( No. P98102534 )
- \* DEMKO approved ( No. 308184 )
- \* SEMKO approved ( No. 9844179 / 01-02 )

## OUTLINE DIMENSIONS

### LTV-733 :



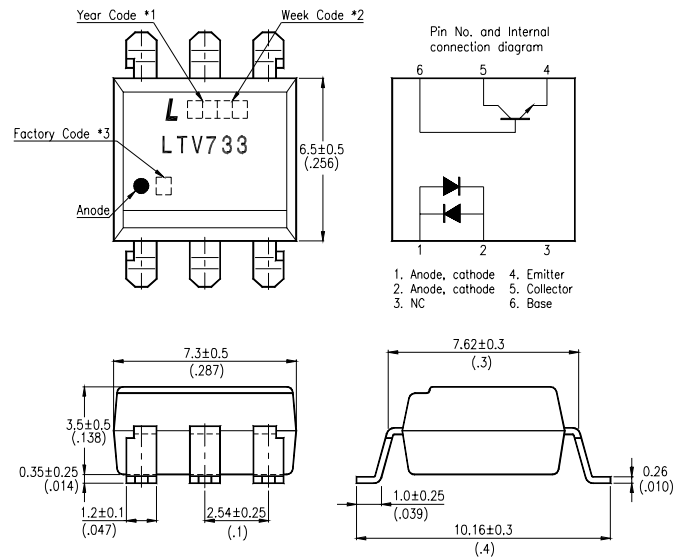
### LTV-733M :



- \*1. Year date code.
- \*2. 2-digit work week.
- \*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand, X : China).

## OUTLINE DIMENSIONS

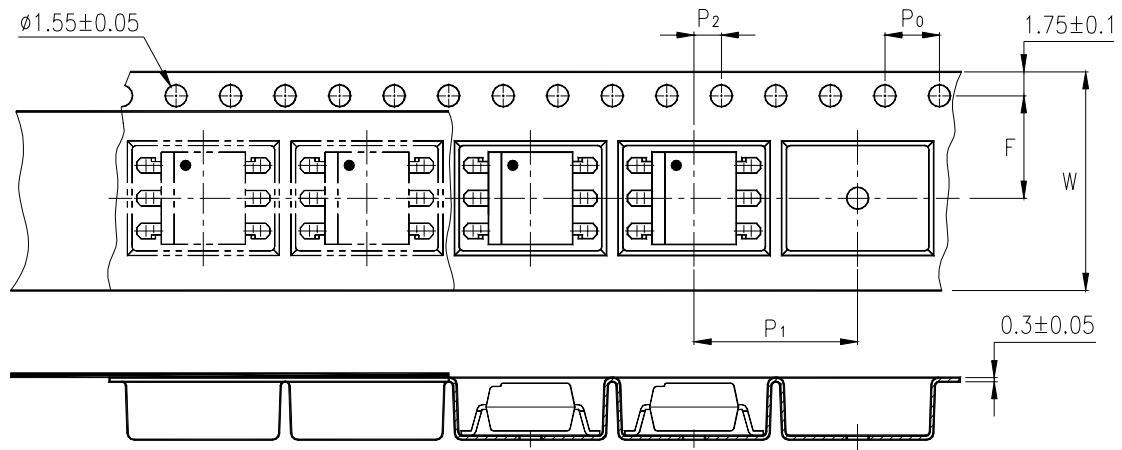
### LTV-733S :



- \*1. Year date code.
- \*2. 2-digit work week.
- \*3. Factory identification mark shall be marked (Z : Taiwan, Y : Thailand, X : China).

## TAPING DIMENSIONS

LTV-733S-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	$P_2$	$2 \pm 0.1$ ( .079 )
Distance of compartment to compartment	$P_1$	$12 \pm 0.1$ ( .472 )

## ABSOLUTE MAXIMUM RATING

( Ta = 25°C )

PARAMETER		SYMBOL	RATING	UNIT
INPUT	Forward Current	I <sub>F</sub>	±50	mA
	Power Dissipation	P	70	mW
OUTPUT	Collector - Emitter Voltage	V <sub>CEO</sub>	35	V
	Emitter - Collector Voltage	V <sub>ECO</sub>	6	V
	Collector - Base Voltage	V <sub>CBO</sub>	35	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>	150	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>	-30 ~ +100	°C
Storage Temperature		T <sub>stg</sub>	-55 ~ +125	°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 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

### ELECTRICAL - OPTICAL CHARACTERISTICS

( Ta = 25°C )

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
INPUT	Forward Voltage	V <sub>F</sub>	—	1.2	1.4	V	I <sub>F</sub> =±20mA
	Terminal Capacitance	C <sub>t</sub>	—	50	250	pF	V=0, f=1KHz
OUTPUT	Collector Dark Current	I <sub>CEO</sub>	—	—	100	nA	V <sub>CE</sub> =20V, I <sub>F</sub> =0
	Collector-Emitter Breakdown Voltage	BV <sub>CEO</sub>	35	—	—	V	I <sub>C</sub> =0.1mA I <sub>F</sub> =0
	Emitter-Collector Breakdown Voltage	BV <sub>ECO</sub>	6	—	—	V	I <sub>E</sub> =10μA I <sub>F</sub> =0
TRANSFER CHARACTERISTICS	Collector Current	I <sub>C</sub>	0.2	—	3	mA	I <sub>F</sub> =±1mA V <sub>CE</sub> =5V
	* Current Transfer Ratio	CTR	20	—	300	%	
	Collector-Emitter Saturation Voltage	V <sub>CE(sat)</sub>	—	0.1	0.2	V	I <sub>F</sub> =±20mA I <sub>C</sub> =1mA
	Isolation Resistance	R <sub>iso</sub>	5×10 <sup>10</sup>	1×10 <sup>11</sup>	—	Ω	DC500V 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>	15	80	—	kHz	V <sub>CE</sub> =5V, I <sub>C</sub> =2mA R <sub>L</sub> =100Ω, -3dB
	Response Time (Rise)	t <sub>r</sub>	—	4	18	μs	V <sub>CE</sub> =2V, I <sub>C</sub> =2mA R <sub>L</sub> =100Ω,
Response Time (Fall)	t <sub>f</sub>	—	3	18	μs		

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

## CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

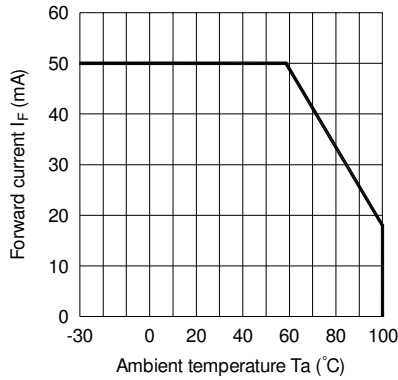


Fig.2 Collector Power Dissipation vs. Ambient Temperature

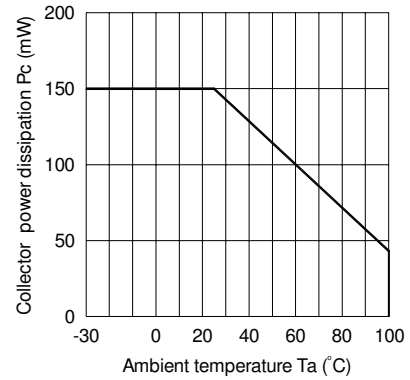


Fig.3 Collector-emitter saturation Voltage vs. Forward current

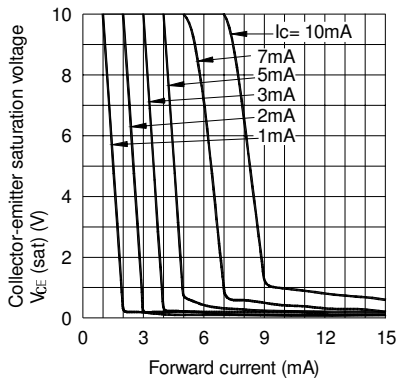


Fig.4 Forward Current vs. Forward Voltage

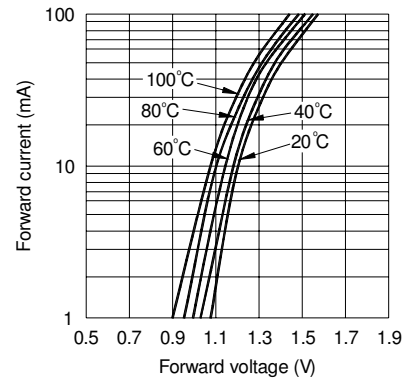


Fig.5 Current Transfer Ratio vs. Forward Current

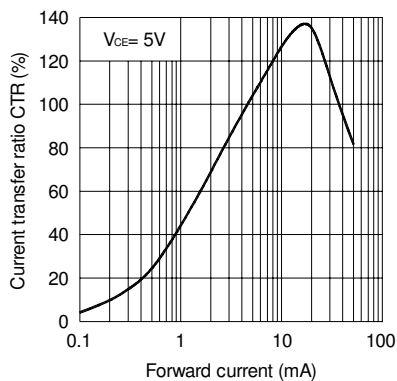
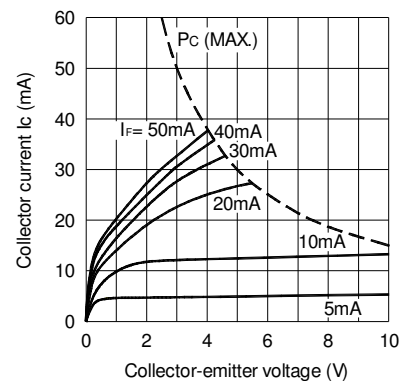


Fig.6 Collector Current vs. Collector-emitter Voltage



## CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

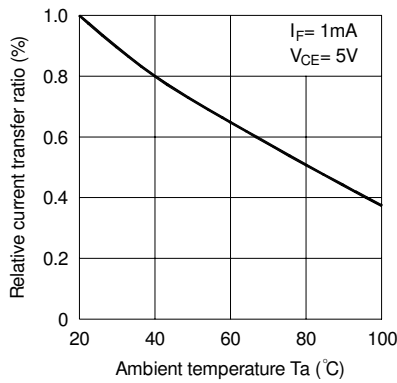


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

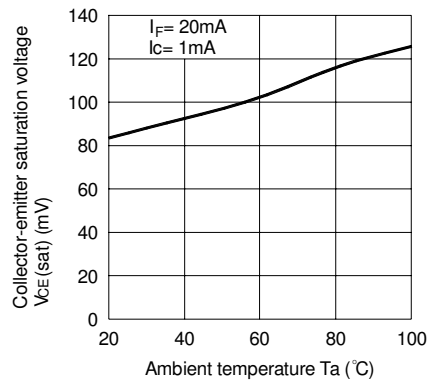


Fig.9 Collector Dark Current vs. Temperature

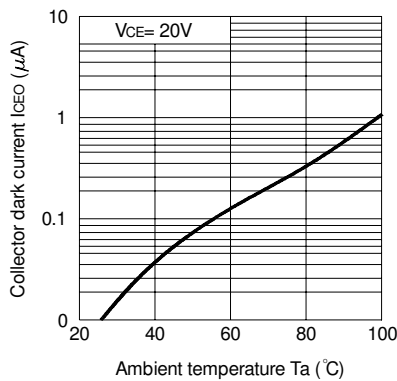


Fig.10 ICBO vs. Temperature

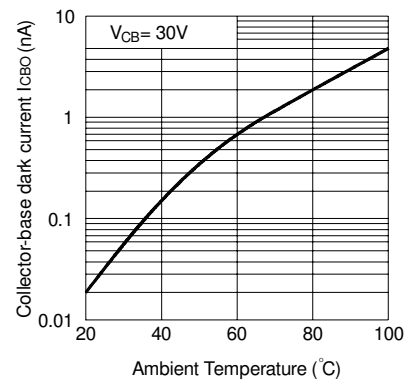


Fig.11 Response Time vs. Load Resistance

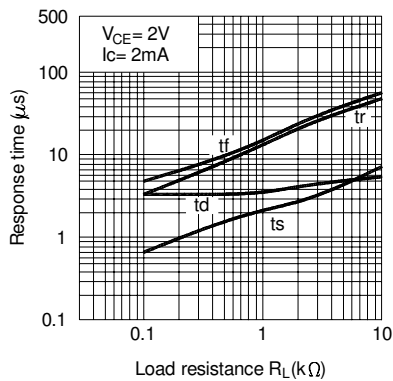


Fig.12 Frequency Response

