



FEATURES

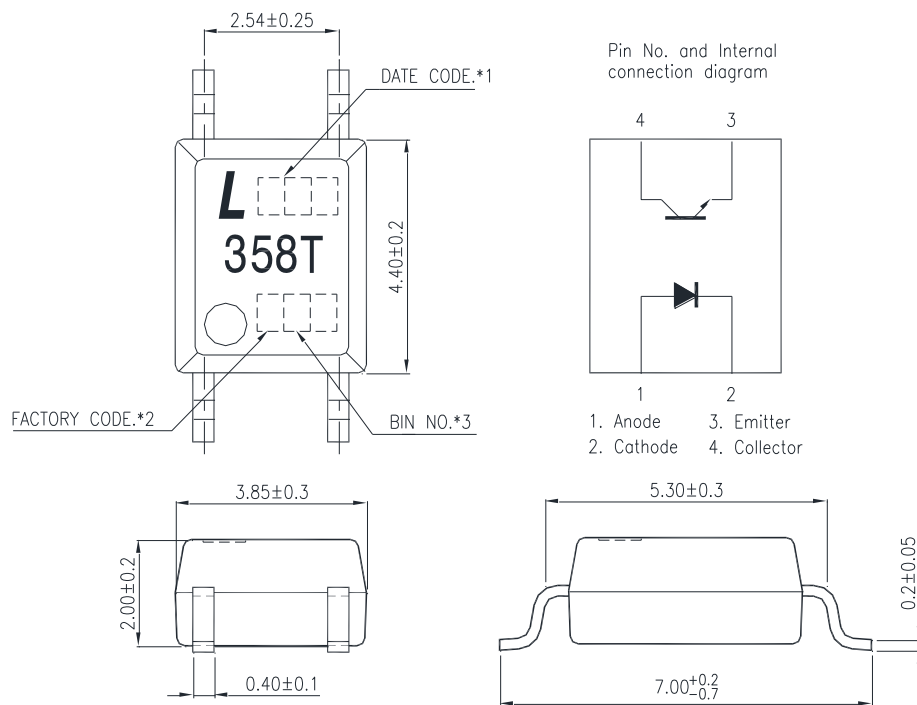
- * Current transfer ratio
(CTR : MIN. 80% at $I_F = 5\text{mA}$, $V_{CE} = 5\text{V}$)
- * Isolation voltage between input and output LTV-358T
($V_{iso} = 3,750\text{V}_{rms}$)
- * High collector-emitter voltage
($V_{CEO} = 120\text{V}$)
- * Employs double transfer mold technology
- * Subminiature type
(The volume is smaller than that of conventional DIP type by as far as 30%)
- * Mini-flat package :
2.0mm profile : LTV-358T
- * Safety approval
UL, CSA, FIMKO NEMKO, DEMKO, SEMKO, VDE* approved
(*Requires "V" ordering option)
- * RoHS compliance

APPLICATIONS

- * Hybrid substrates that require high density mounting.
- * Programmable controllers

OUTLINE DIMENSIONS

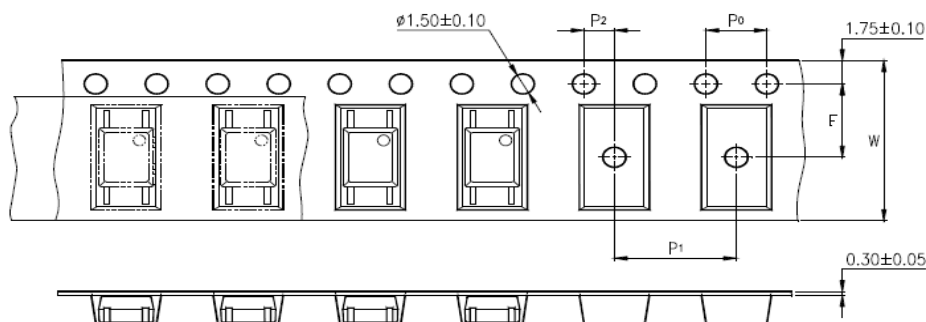
LTV-358T :



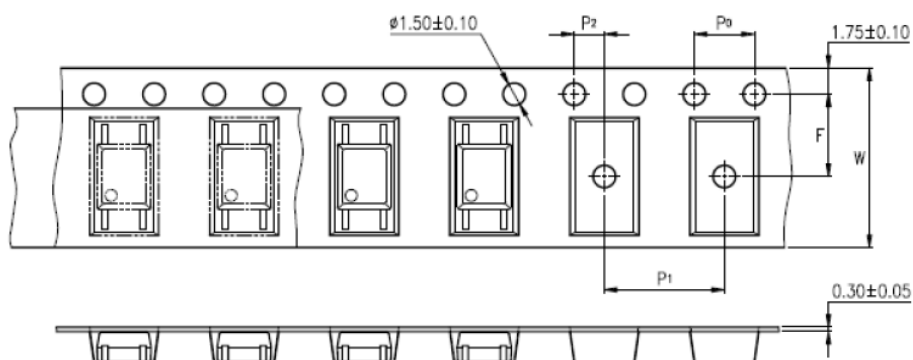
- *1. 3-digit date code.
- *2. Factory identification mark shall be marked (W: China-CZ, X: China-TJ, Y: Thailand).
- *3. Rank shall be or shall not be marked.

TAPING DIMENSIONS

TP1 MINI FLAT (3000pcs/reel) : Suffix "-TP1"



TP MINI FLAT (3000pcs/reel) : Suffix "-TP"



Content Quantity

Model	Reel volume (pcs/Reel)	Inner Box volume (Reel/Box)	Outer carton volume (Box/Carton)	Total volume (pcs/outer carton)
MFP TP/TP1	3000	2	10	60000

Description	Symbol	Dimensions in mm (inches)
Tape wide	W	12 ± 0.3 (.47)
Pitch of sprocket holes	P_0	4 ± 0.1 (.15)
Distance of compartment	F	5.5 ± 0.1 (.217)
	P_2	2 ± 0.1 (.079)
Distance of compartment to compartment	P_1	8 ± 0.1 (.315)

ABSOLUTE MAXIMUM RATING

(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}	120	V
	Emitter - Collector Voltage	V _{ECO}	6	V
	Collector Current	I _C	50	mA
	Collector Power Dissipation	P _C	150	mW
Total Power Dissipation		P _{tot}	170	mW
*1	Isolation Voltage	V _{iso}	3,750	V _{rms}
Operating Temperature		T _{opr}	-55 ~ +100	°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

ELECTRICAL - OPTICAL CHARACTERISTICS

(Ta = 25°C)

PARAMETER		SYMBOL	MIN.	TYP.	MAX.	UNIT	CONDITIONS
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} =40V, I _F =0
	Collector-Emitter Breakdown Voltage	BV _{CEO}	120	—	—	V	I _C =0.1mA I _F =0
	Emitter-Collector Breakdown Voltage	BV _{ECO}	6	—	—	V	I _E =10μA I _F =0
TRANSFER CHARACTERISTICS	Collector Current	I _C	4	—	20	mA	I _F =5mA V _{CE} =5V
	*1 Current Transfer Ratio	CTR	80	—	400	%	
	Collector Current	I _C	0.2	—	—	mA	I _F =1mA V _{CE} =5V
	*1 Current Transfer Ratio	CTR	20	—	—	%	
	Collector-Emitter Saturation Voltage	V _{CE(sat)}	—	—	0.2	V	I _F =20mA I _C =1mA
	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	—	4	18	μs	V _{CE} =2V, I _C =2mA R _L =100Ω
	Response Time (Fall)	t _f	—	3	18	μs	

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

RANK TABLE OF CURRENT TRANSFER RATIO CTR

MODEL NO.	RANK MARK	CTR (%)	CTR (%)
LTV-358T	A	80 ~ 160	>20
	B	130 ~ 260	>45
	C	200 ~ 400	>70
	A or B or C or No Rank	80 ~ 400	>20

CONDITIONS	$I_F = 5 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $T_a = 25 \text{ }^\circ\text{C}$	$I_F = 1 \text{ mA}$ $V_{CE} = 5 \text{ V}$ $T_a = 25 \text{ }^\circ\text{C}$
------------	---	---

CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

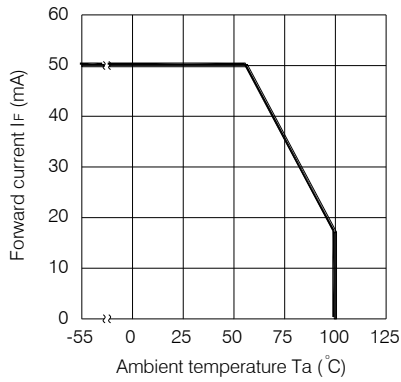


Fig.2 Collector Power Dissipation vs. Ambient Temperature

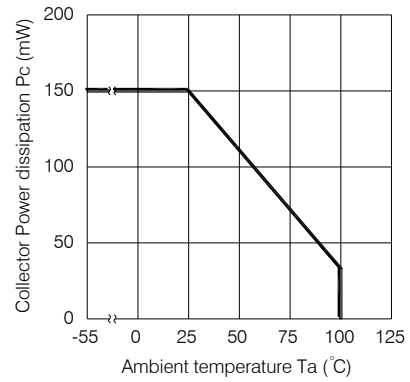


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

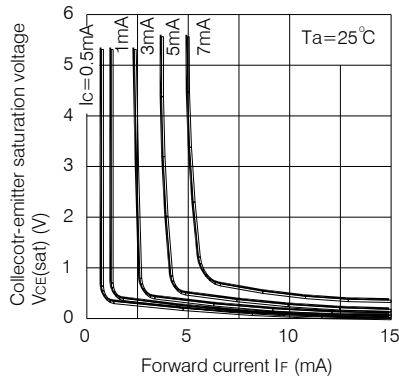


Fig.4 Forward Current vs. Forward Voltage

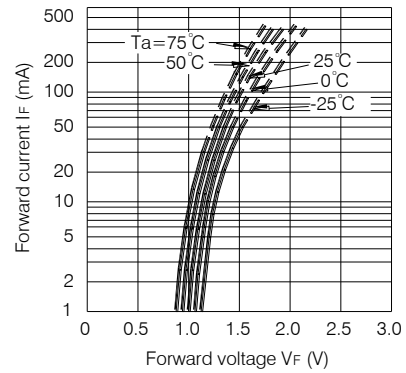


Fig.5 Current Transfer Ratio vs. Forward Current

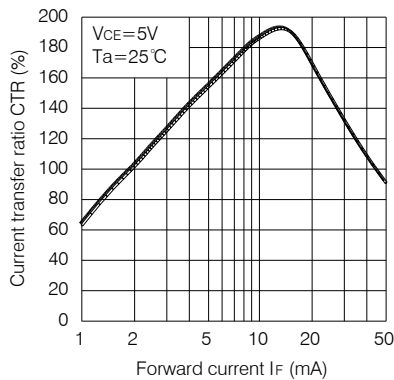
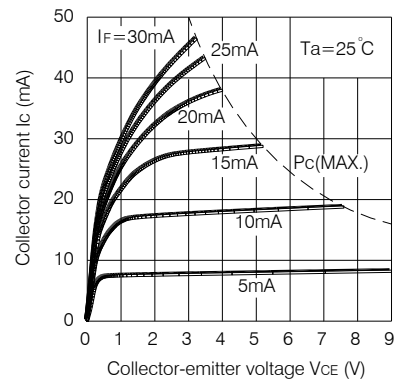


Fig.6 Collector Current vs. Collector-emitter Voltage



CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

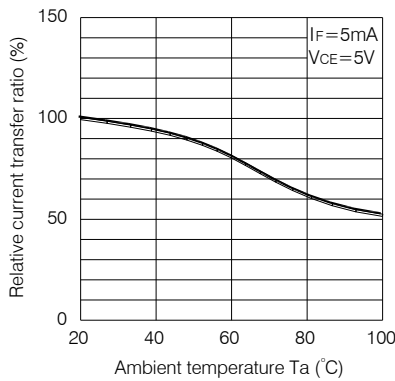


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

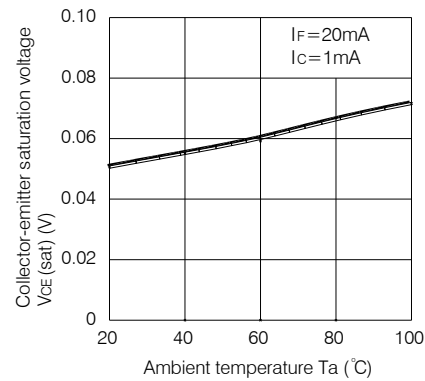


Fig.9 Collector Dark Current vs. Ambient Temperature

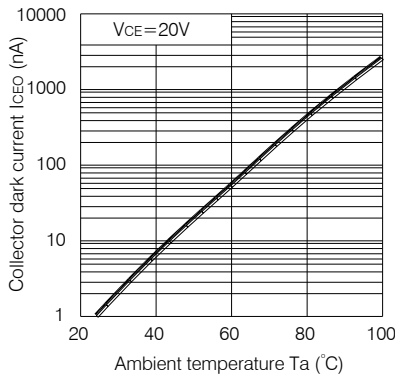


Fig.10 Response Time vs. Load Resistance

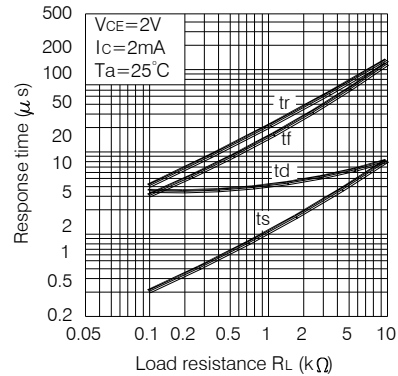
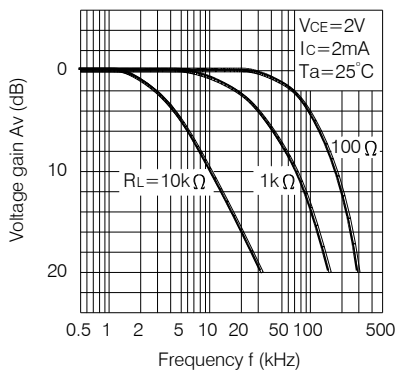
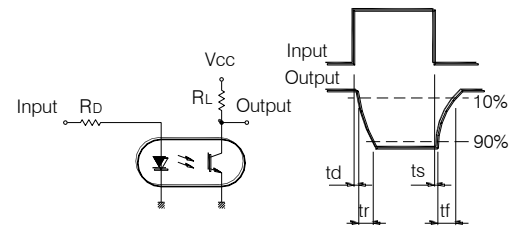


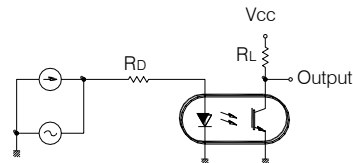
Fig.11 Frequency Response



Test Circuit for Response Time



Test Circuit for Frequency Response

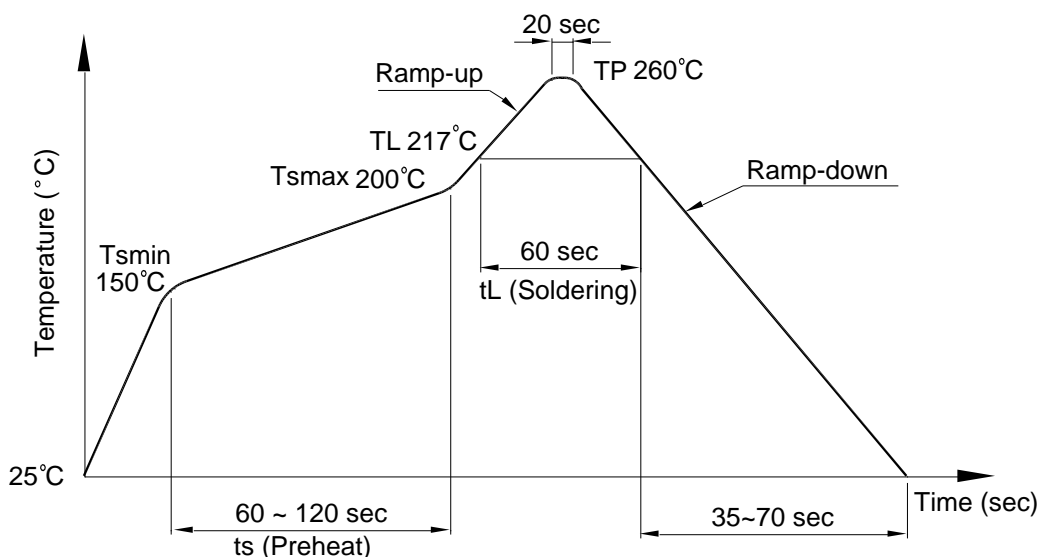


TEMPERATURE PROFILE OF SOLDERING REFLOW

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

One time soldering reflow is recommended within the condition of temperature and time profile shown below.

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



TEMPERATURE PROFILE OF SOLDERING REFLOW

(2) Wave soldering (JEDEC22A111 compliant)

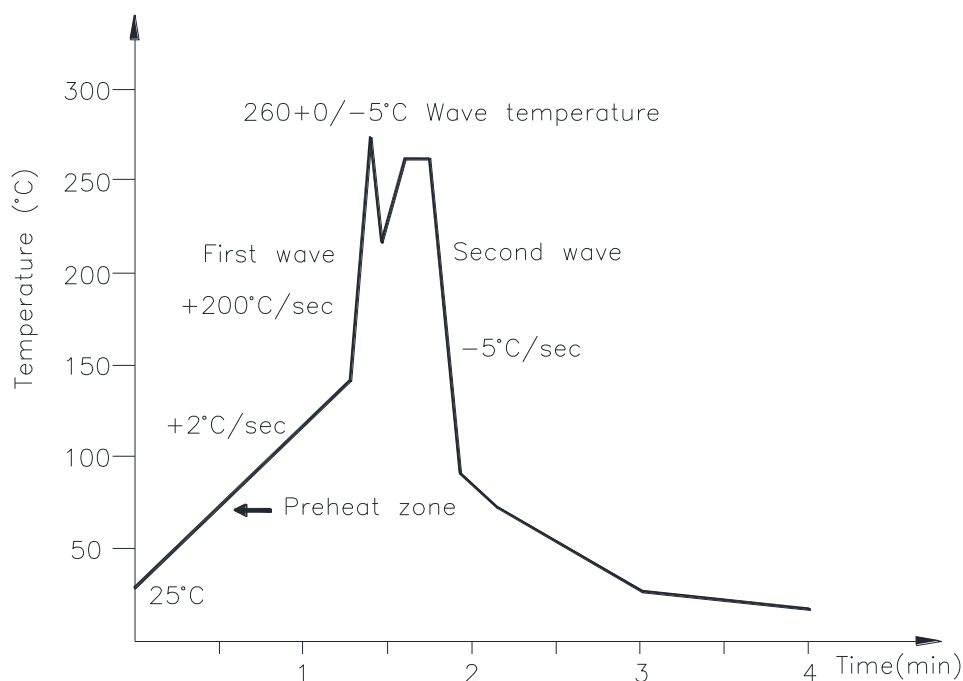
One time soldering is recommended within the condition of temperature.

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

Time: 10 sec.

Preheat temperature: 25 to 140°C

Preheat time: 30 to 80 sec.



(3) Hand soldering by soldering iron

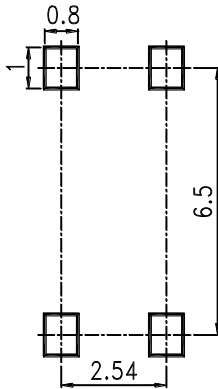
Allow single lead soldering in every single process. One time soldering is recommended.

Temperature: $380 \pm 5^\circ\text{C}$

Time: 3 sec max.

RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

Unit : mm



Notes:

- Lite-On is continually improving the quality, reliability, function or design and Lite-On 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 body in solder paste is not recommended.



Компания «ЭлектроПласт» предлагает заключение долгосрочных отношений при поставках импортных электронных компонентов на взаимовыгодных условиях!

Наши преимущества:

- Оперативные поставки широкого спектра электронных компонентов отечественного и импортного производства напрямую от производителей и с крупнейших мировых складов;
- Поставка более 17-ти миллионов наименований электронных компонентов;
- Поставка сложных, дефицитных, либо снятых с производства позиций;
- Оперативные сроки поставки под заказ (от 5 рабочих дней);
- Экспресс доставка в любую точку России;
- Техническая поддержка проекта, помощь в подборе аналогов, поставка прототипов;
- Система менеджмента качества сертифицирована по Международному стандарту ISO 9001;
- Лицензия ФСБ на осуществление работ с использованием сведений, составляющих государственную тайну;
- Поставка специализированных компонентов (Xilinx, Altera, Analog Devices, Intersil, Interpoint, Microsemi, Aeroflex, Peregrine, Syfer, Eurofarad, Texas Instrument, Miteq, Cobham, E2V, MA-COM, Hittite, Mini-Circuits, General Dynamics и др.);

Помимо этого, одним из направлений компании «ЭлектроПласт» является направление «Источники питания». Мы предлагаем Вам помощь Конструкторского отдела:

- Подбор оптимального решения, техническое обоснование при выборе компонента;
- Подбор аналогов;
- Консультации по применению компонента;
- Поставка образцов и прототипов;
- Техническая поддержка проекта;
- Защита от снятия компонента с производства.



Как с нами связаться

Телефон: 8 (812) 309 58 32 (многоканальный)

Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

Адрес: 198099, г. Санкт-Петербург, ул. Калинина, дом 2, корпус 4, литера А.