



Photocoupler

Product Data Sheet

LTV-8141 8241 8441

(M, S, S-TA1, S-TA, S-TP)

Series

Spec No.: DS-70-96-0014

Effective Date: 06/21/2013

Revision: F

LITE-ON DCC

RELEASE

BNS-OD-FC001/A4

LITE-ON Technology Corp. / Optoelectronics

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<http://www.liteon.com/opto>

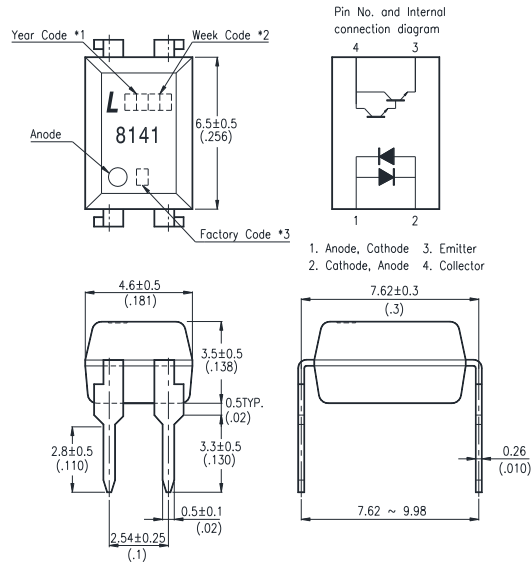


FEATURES

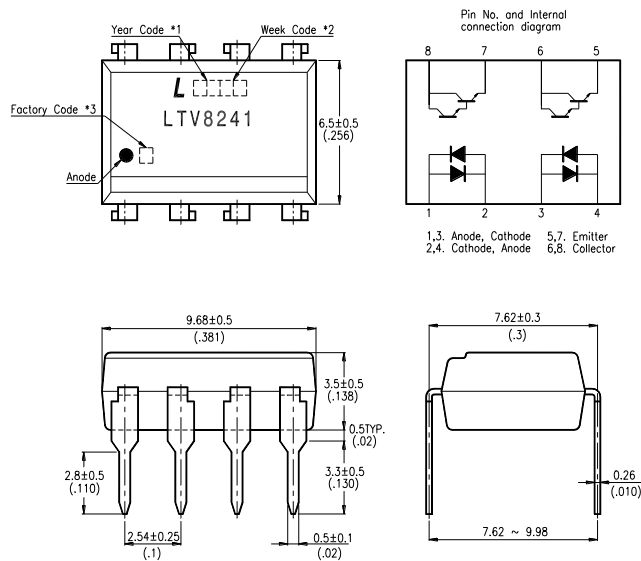
- * AC input response
- * High current transfer ratio
(CTR : MIN. 600% at $I_F = \pm 1\text{mA}$, $V_{CE} = 2\text{V}$)
- * High input-output isolation voltage
($V_{iso} = 5,000\text{V}_{rms}$)
- * Response time
(t_r : TYP. $60\mu\text{s}$ at $V_{CE} = 2\text{V}$, $I_C = 10\text{mA}$, $R_L = 100\Omega$)
- * Dual-in-line package :
 - LTV-8141 : 1-channel type
 - LTV-8241 : 2-channel type
 - LTV-8441 : 4-channel type
- * Wide lead spacing package :
 - LTV-8141M : 1-channel type
 - LTV-8241M : 2-channel type
 - LTV-8441M : 4-channel type
- * Surface mounting package :
 - LTV-8141S : 1-channel type
 - LTV-8241S : 2-channel type
 - LTV-8441S : 4-channel type
- * Tape and reel packaging :
 - LTV-8141S-TA1, LTV-8241S-TA1
 - LTV-8141S-TA, LTV-8141S-TP
- * Safety approval
UL / TUV / FIMKO / NEMKO / DEMKO / SEMKO / VDE* approved
- *Required “V” ordering option**
- * RoHS compliant

OUTLINE DIMENSIONS

LTV-8141 :



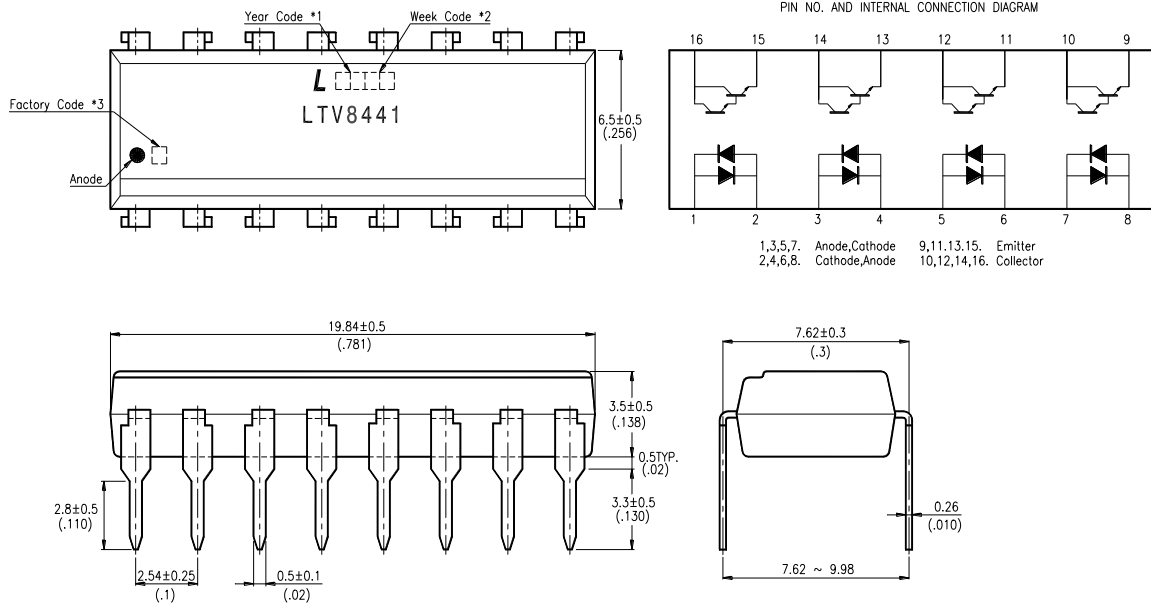
LTV-8241 :



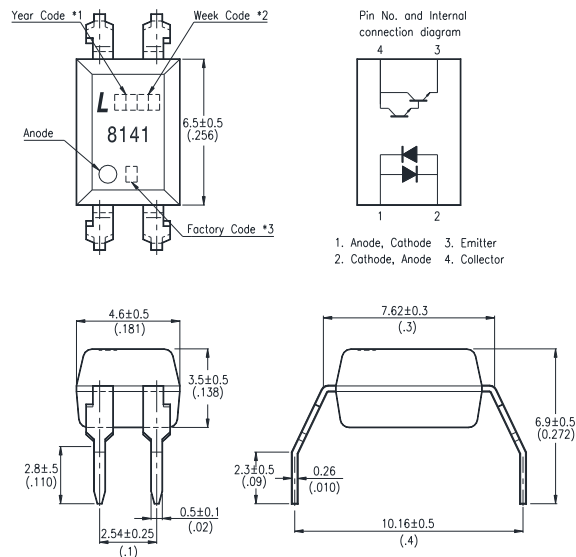
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

OUTLINE DIMENSIONS

LTV-8441 :



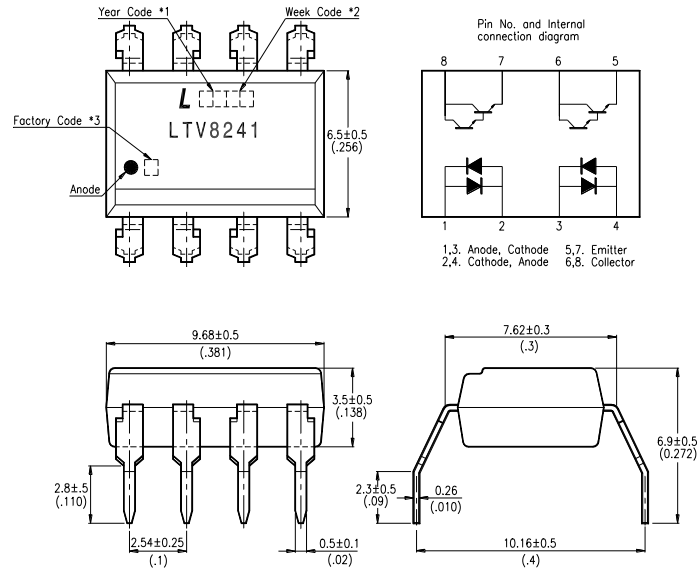
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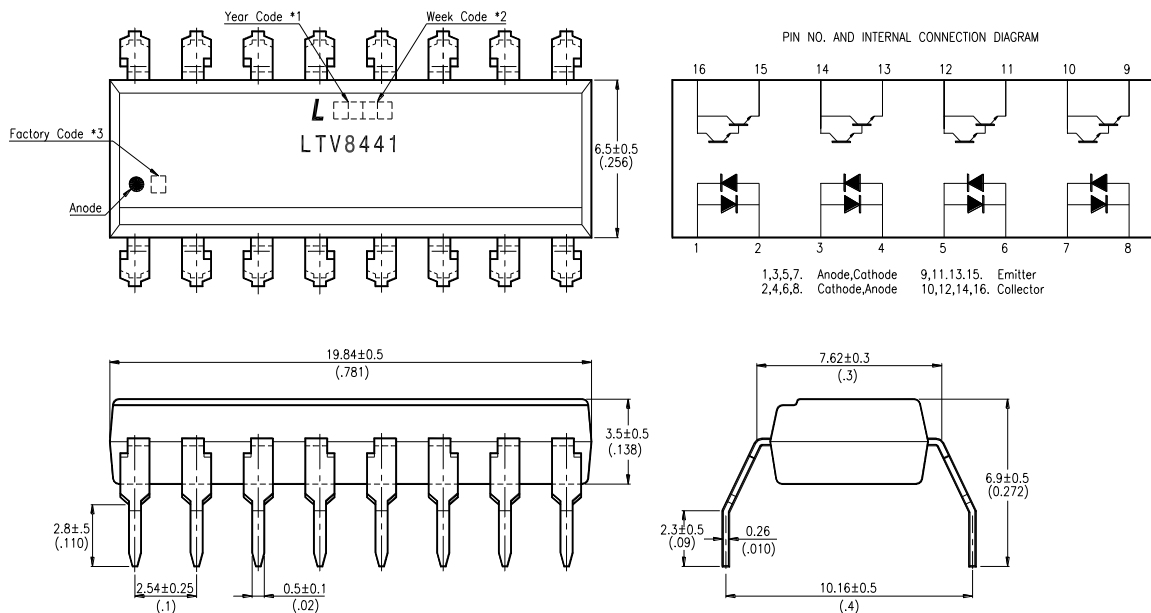
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

OUTLINE DIMENSIONS

LTV-8241M :



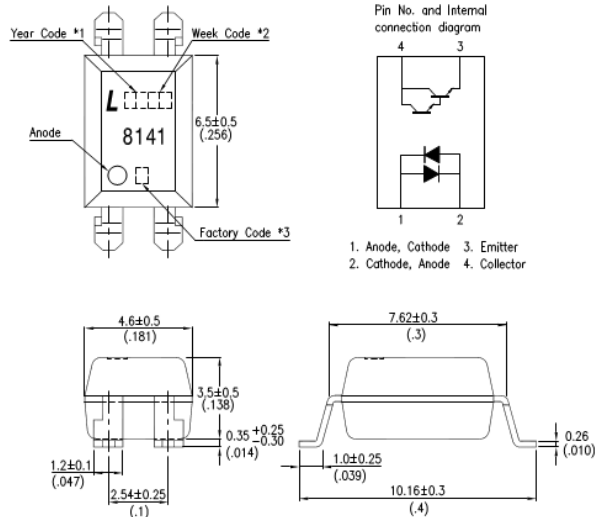
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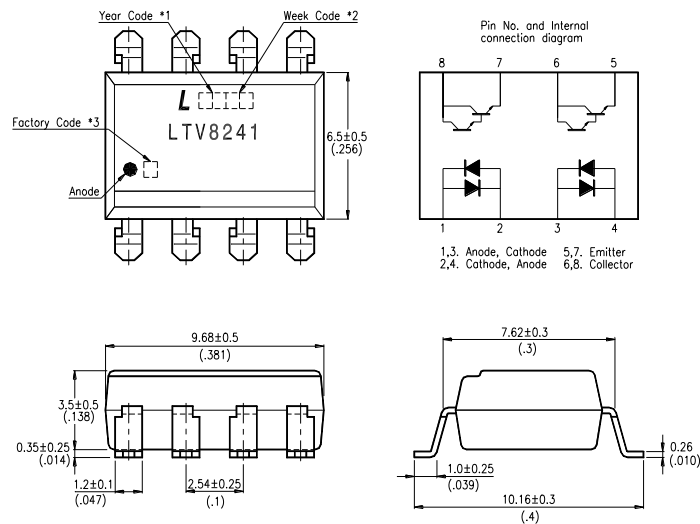
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

OUTLINE DIMENSIONS

LTV-8141S :



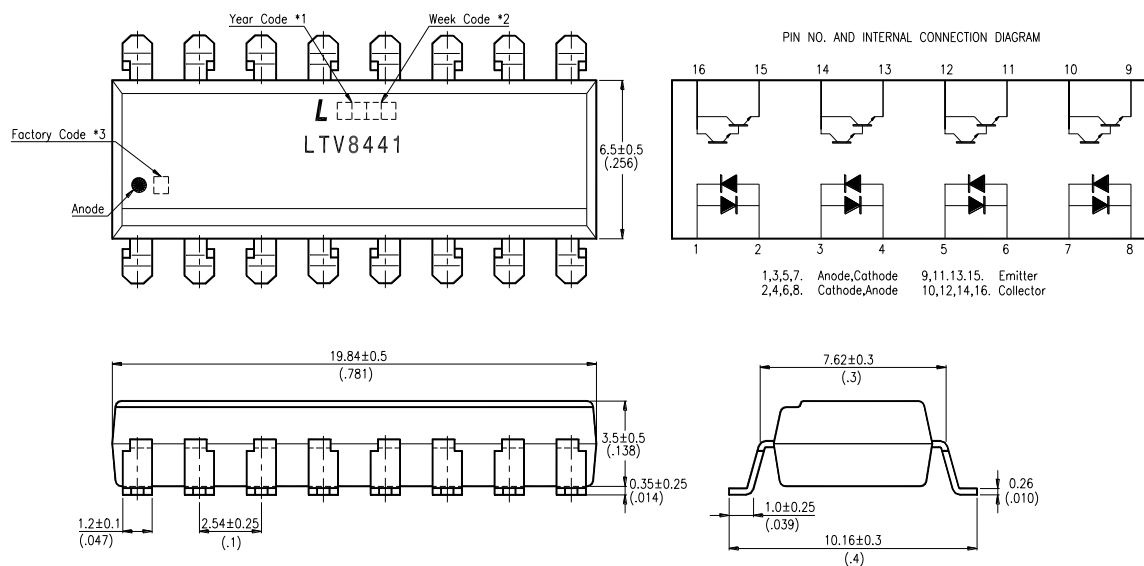
LTV-8241S :



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

OUTLINE DIMENSIONS

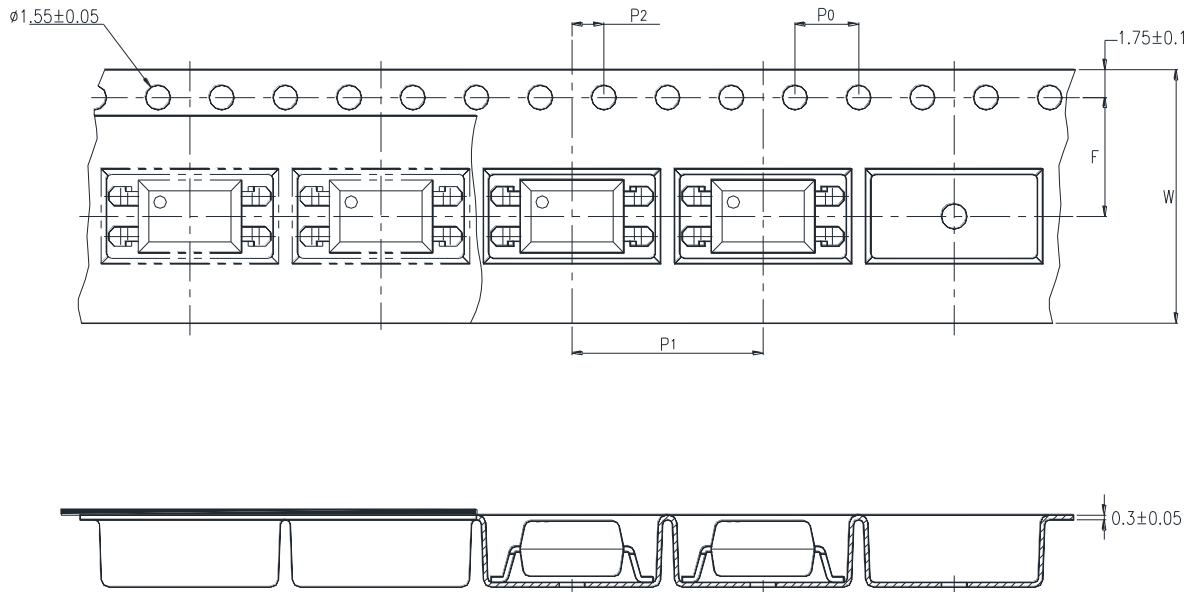
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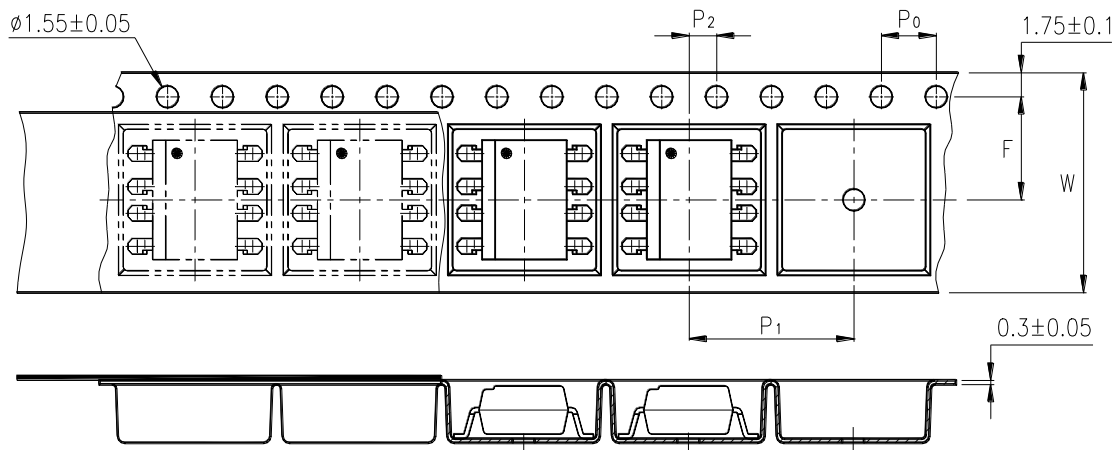
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

TAPING DIMENSIONS

LTV-8141S-TA1 :



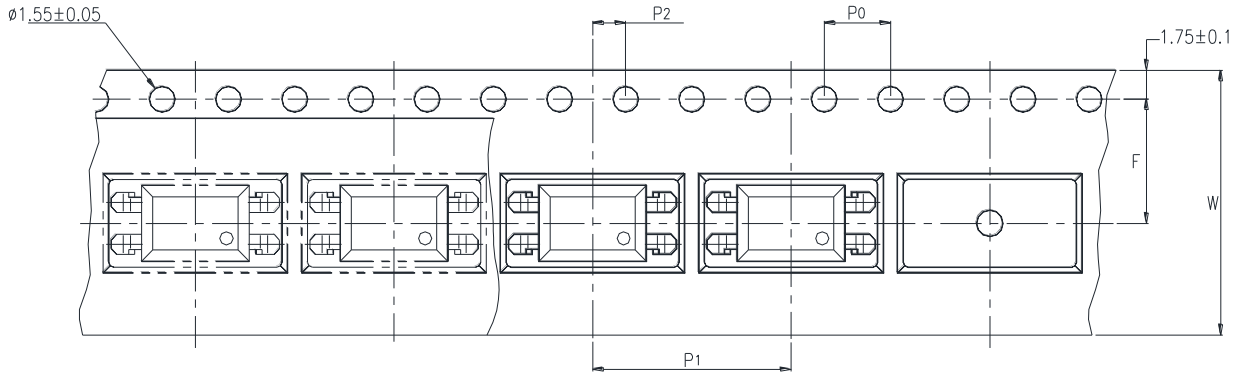
LTV-8241S-TA1 :



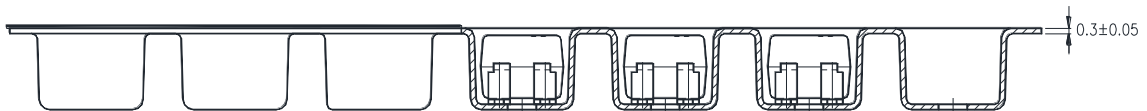
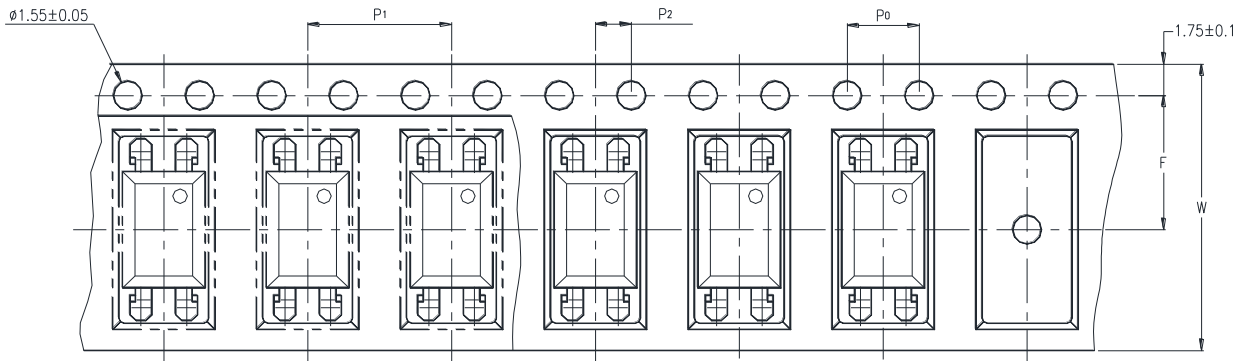
| Description | Symbol | Dimensions in mm (inches) |
|--|--------|-----------------------------|
| Tape wide | W | 16 ± 0.3 (.63) |
| Pitch of sprocket holes | P_0 | 4 ± 0.1 (.15) |
| Distance of compartment | F | 7.5 ± 0.1 (.295) |
| | P_2 | 2 ± 0.1 (.079) |
| Distance of compartment to compartment | P_1 | 12 ± 0.1 (.472) |

TAPING DIMENSIONS

LTV-8141S-TA :



LTV-8141S-TP :



| 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 ± 0.1 (.295) |
| Distance of compartment to compartment [Option: TA] | P_2 | 2 ± 0.1 (.079) |
| Distance of compartment to compartment [Option: TP] | P_1 | 12 ± 0.1 (.472) |
| Distance of compartment to compartment [Option: TP] | P_1 | 8 ± 0.1 (.315) |

ABSOLUTE MAXIMUM RATING

(Ta = 25°C)

| | PARAMETER | SYMBOL | RATING | UNIT |
|--------------------------|-----------------------------|------------------|------------|------------------|
| INPUT | Forward Current | I _F | ±50 | mA |
| | Power Dissipation | P | 70 | mW |
| OUTPUT | Collector - Emitter Voltage | V _{CEO} | 35 | V |
| | Emitter - Collector Voltage | V _{ECO} | 6 | V |
| | Collector Current | I _C | 80 | mA |
| | Collector Power Dissipation | P _C | 150 | mW |
| Total Power Dissipation | | P _{tot} | 200 | mW |
| *1 Isolation Voltage | | V _{iso} | 5,000 | V _{rms} |
| Operating Temperature | | T _{opr} | -30 ~ +100 | °C |
| Storage Temperature | | T _{stg} | -55 ~ +125 | °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 |
| | Terminal Capacitance | C _t | — | 50 | 250 | pF | V=0, f=1KHz |
| OUTPUT | Collector Dark Current | I _{CEO} | — | — | 1 | μA | V _{CE} =10V, I _F =0 |
| | Collector-Emitter Breakdown Voltage | BV _{CEO} | 35 | — | — | 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 | 6 | — | 75 | mA | I _F =±1mA V _{CE} =2V |
| | * Current Transfer Ratio | CTR | 600 | — | 7,500 | % | |
| | Collector-Emitter Saturation Voltage | V _{CE(sat)} | — | 0.8 | 1 | V | I _F =±20mA I _C =5mA |
| | 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 |
| | Cut-Off Frequency | f _c | 1 | 6 | — | KHz | V _{CE} =5V, I _C =2mA R _L =100Ω, -3dB |
| | Response Time (Rise) | t _r | — | 60 | 300 | μs | V _{CE} =2V, I _C =10mA R _L =100Ω |
| | Response Time (Fall) | t _f | — | 53 | 250 | μs | |

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

CHARACTERISTICS CURVES

Fig.1 Forward Current vs. Ambient Temperature

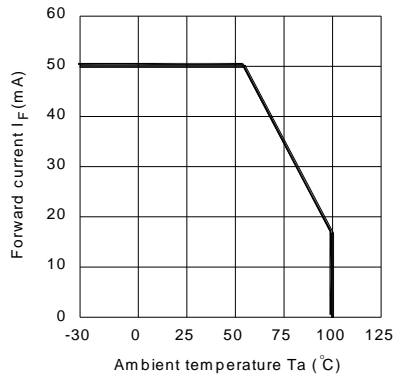


Fig.2 Collector Power Dissipation vs. Ambient Temperature

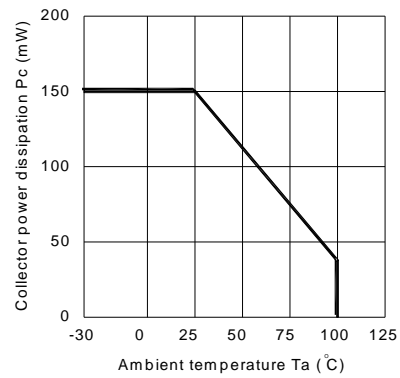


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

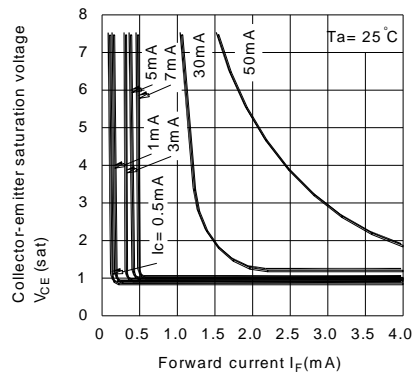


Fig.4 Forward Current vs. Forward Voltage

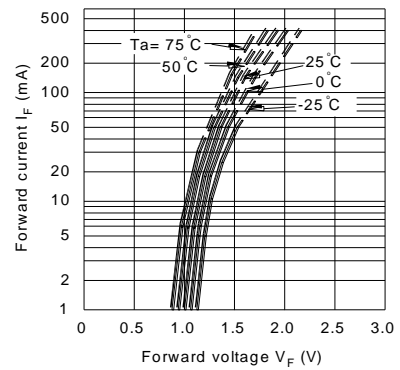


Fig.5 Current Transfer Ratio vs. Forward Current

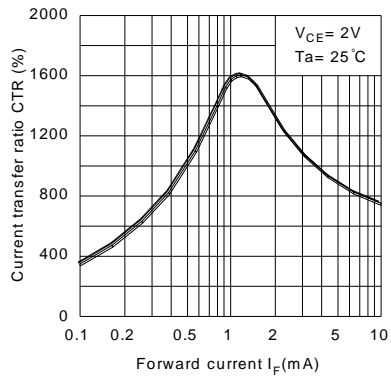
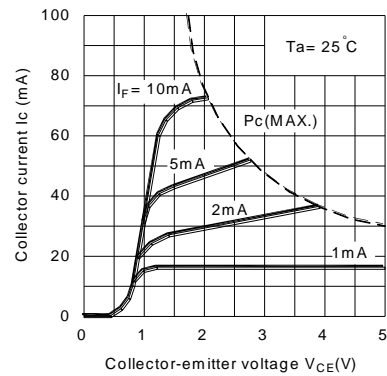


Fig.6 Collector Current vs. Collector-emitter Voltage



CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio vs. Ambient Temperature

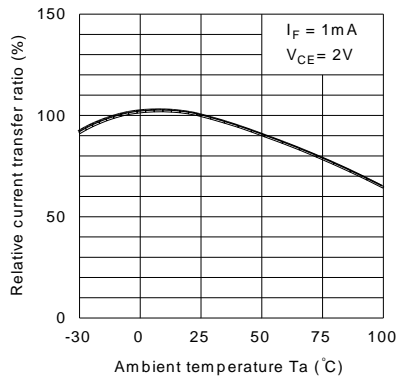


Fig.8 Collector-emitter Saturation Voltage vs. Ambient Temperature

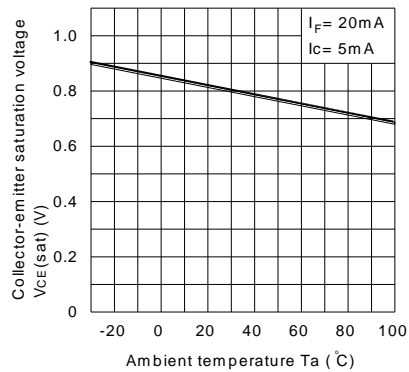


Fig.9 Collector Dark Current vs. Ambient Temperature

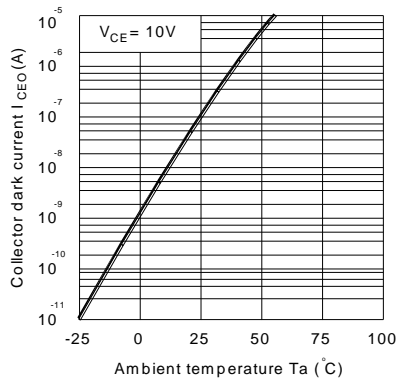


Fig.10 Response Time vs. Load Resistance

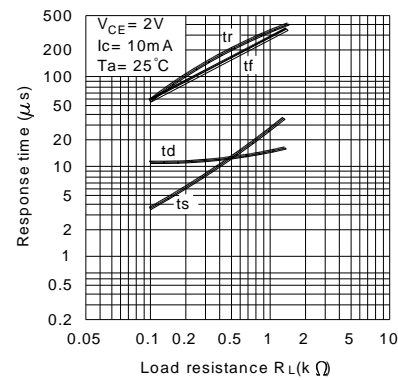
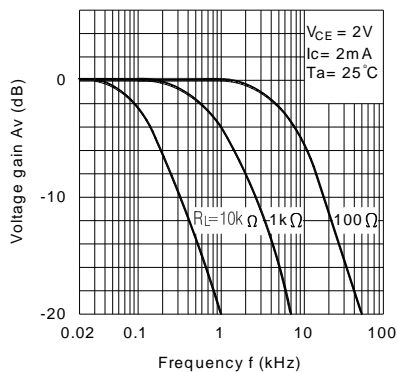
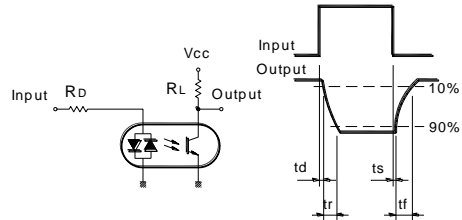


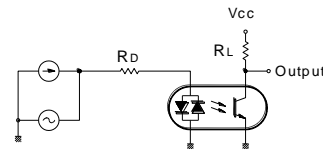
Fig.11 Frequency Response



Test Circuit for Response Time



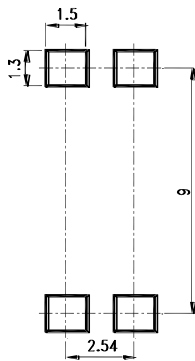
Test Circuit for Frequency Response



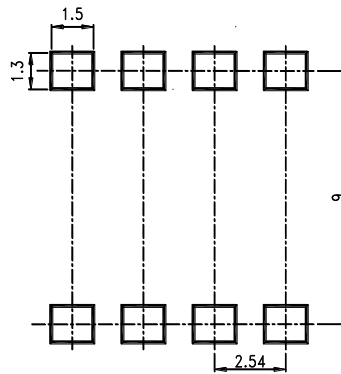
RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

Unit : mm

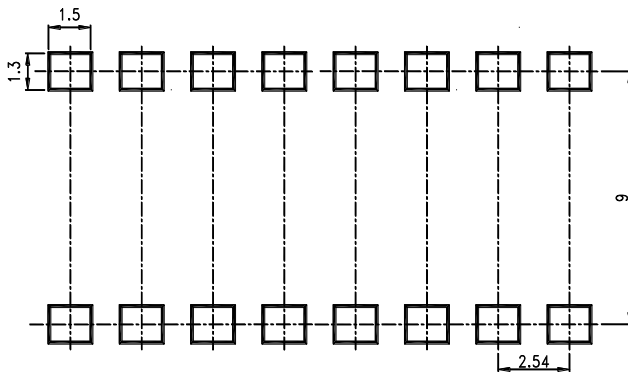
4 PIN



8 PIN



16 PIN



Mouser Electronics

Authorized Distributor

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[LTV-8241S](#) [LTV-8141](#) [LTV-8141S](#) [LTV-8141M](#) [LTV-8241S-TA](#) [LTV-8241S-TA1](#) [LTV-8141S-TA](#) [LTV-8241](#) [LTV-8441S](#) [LTV-8141S-TA1](#) [LTV-8441](#)



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

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Факс: 8 (812) 320-02-42

Электронная почта: org@eplast1.ru

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