



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



FEATURES

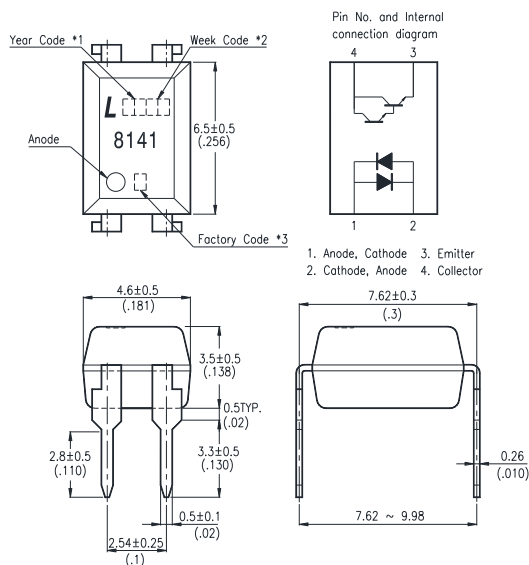
- * AC input response
- * High current transfer ratio
(CTR : MIN. 600% at $I_F = \pm 1\text{mA}$, $V_{CE} = 2\text{V}$)
- * High input-output isolation voltage
($V_{iso} = 5,000\text{Vrms}$)
- * Response time
(t_r : TYP. $60\mu\text{s}$ at $V_{CE} = 2\text{V}$, $I_C = 10\text{mA}$, $R_L = 100\Omega$)
- * 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

LITEON LITE-ON TECHNOLOGY CORPORATION

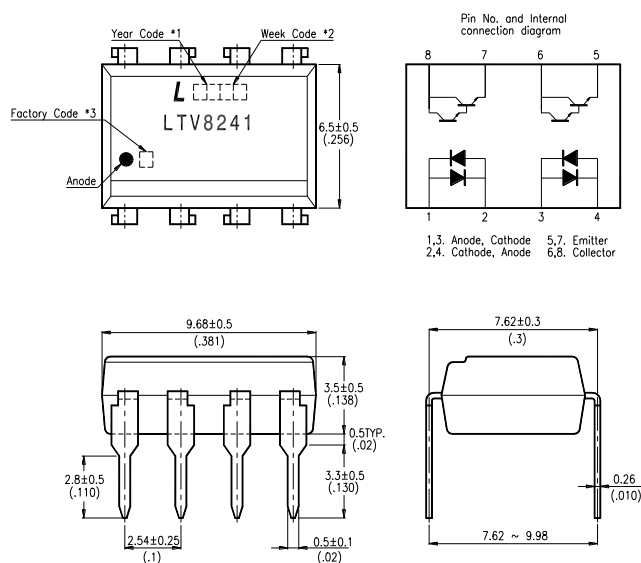
Property of LITE-ON Only

OUTLINE DIMENSIONS

LTV-8141 :



LTV-8241 :



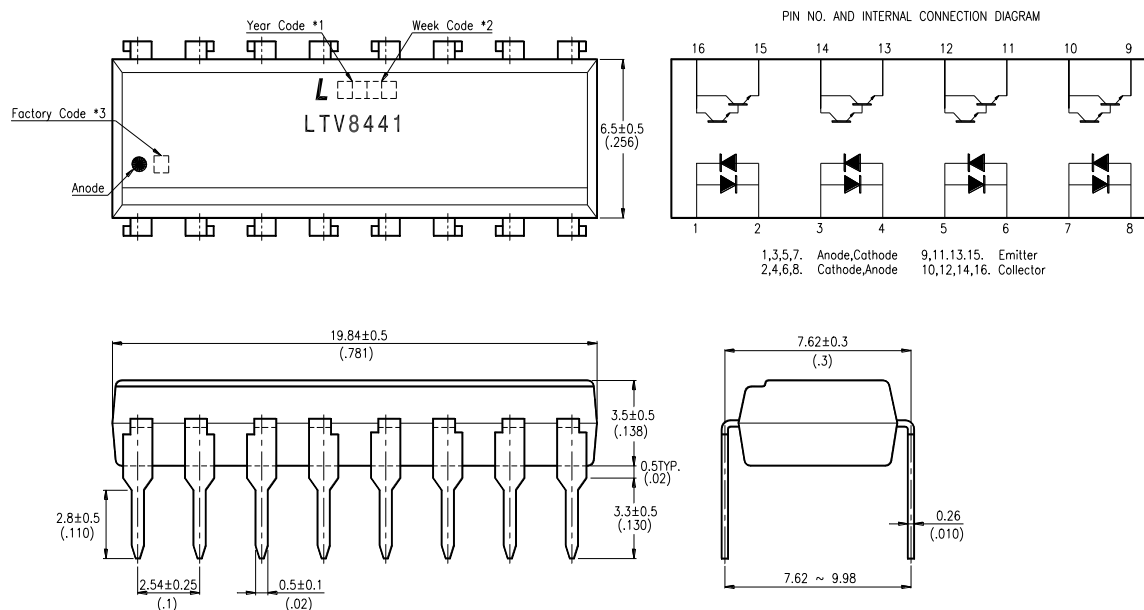
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

LITE-ON LITE-ON TECHNOLOGY CORPORATION

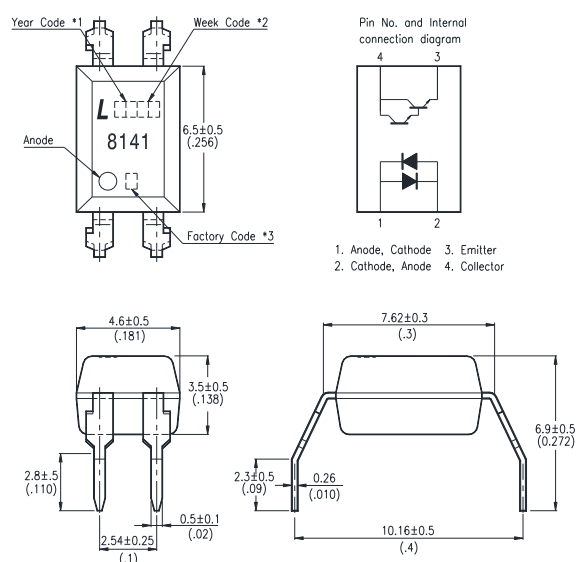
Property of LITE-ON Only

OUTLINE DIMENSIONS

LTV-8441 :



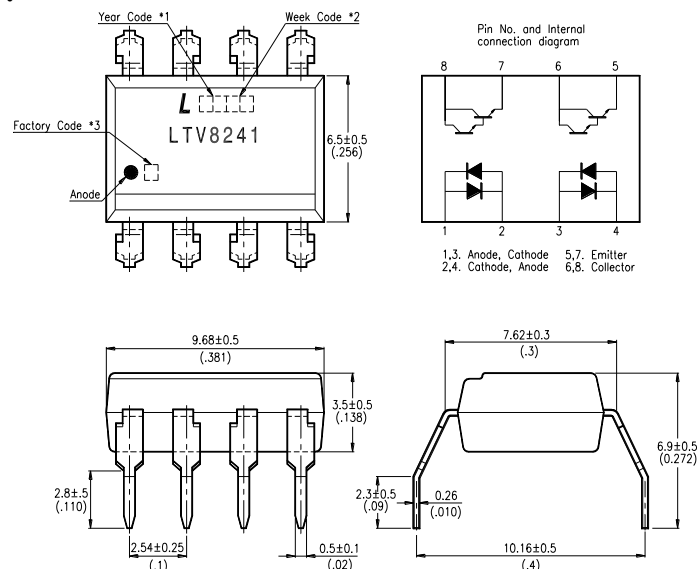
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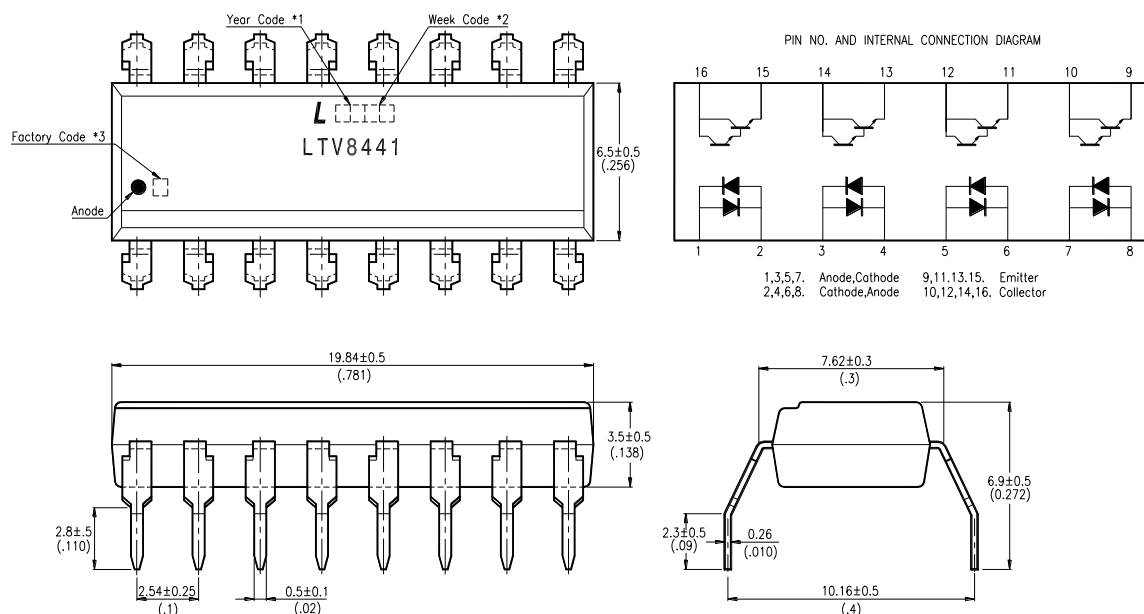
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

OUTLINE DIMENSIONS

LTV-8241M :



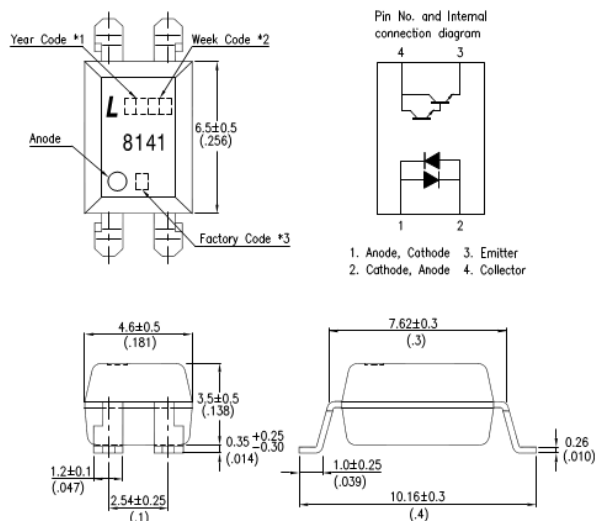
LTV-8441M :



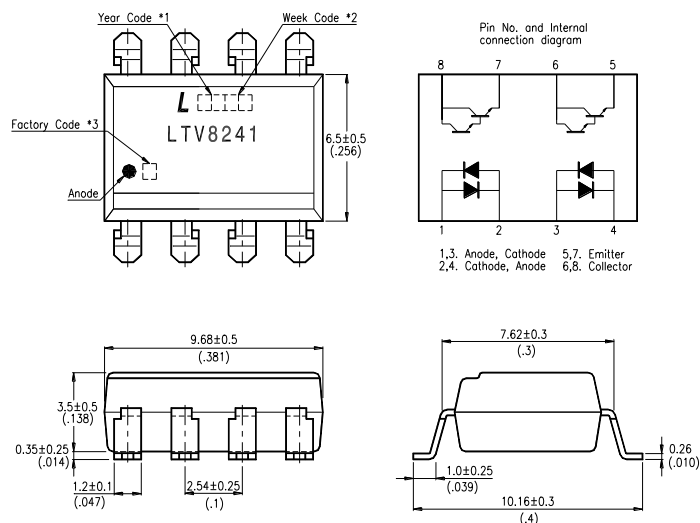
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

OUTLINE DIMENSIONS

LTV-8141S :



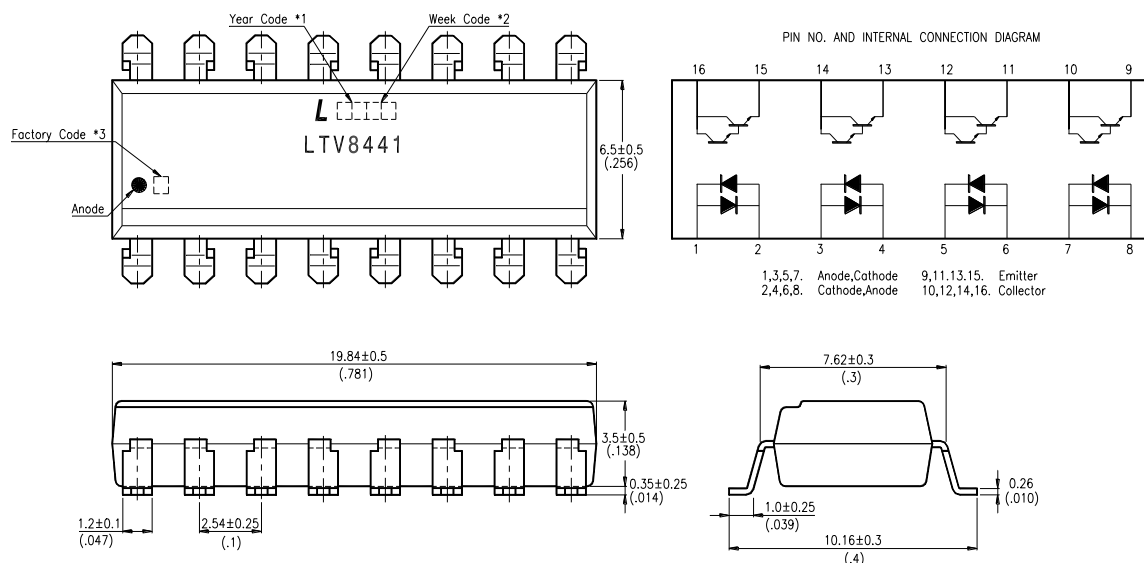
LTV-8241S :



- *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

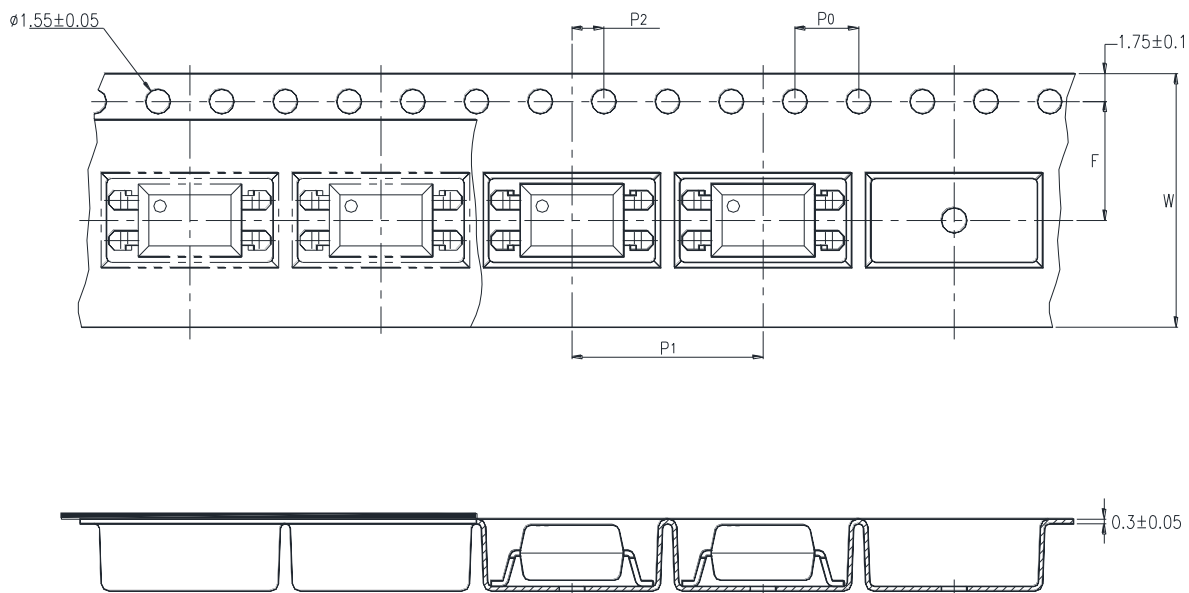
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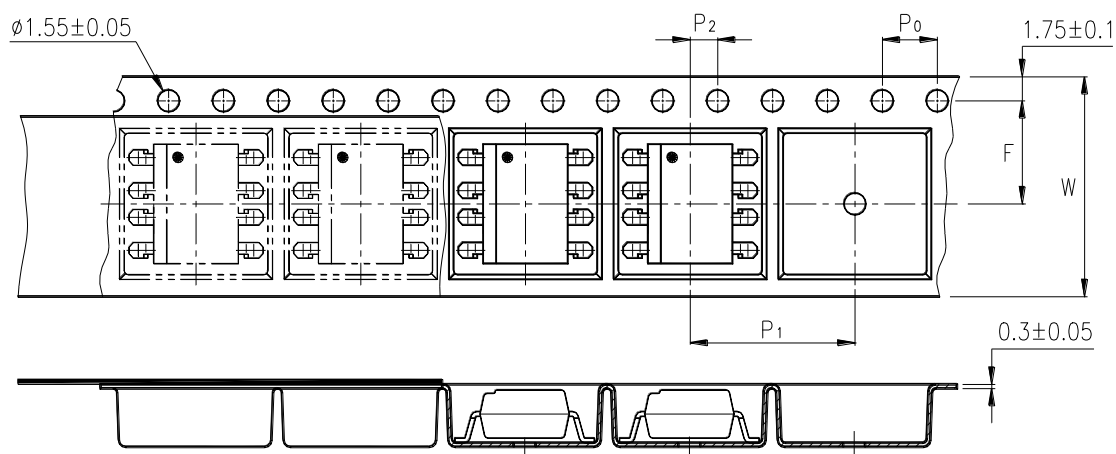
- *1. Year date code.
- *2. 2-digit work week.
- *3. Factory identification mark shall be marked.
(W: China-CZ, X : China-TJ, Y : Thailand)

TAPING DIMENSIONS

LTV-8141S-TA1 :



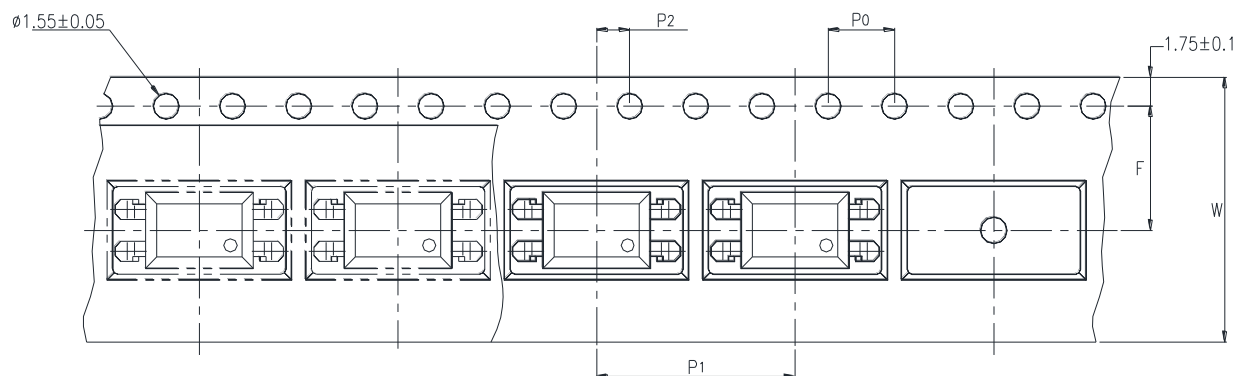
LTV-8241S-TA1 :



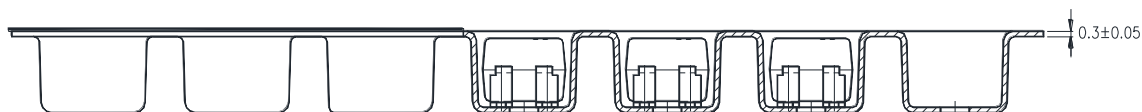
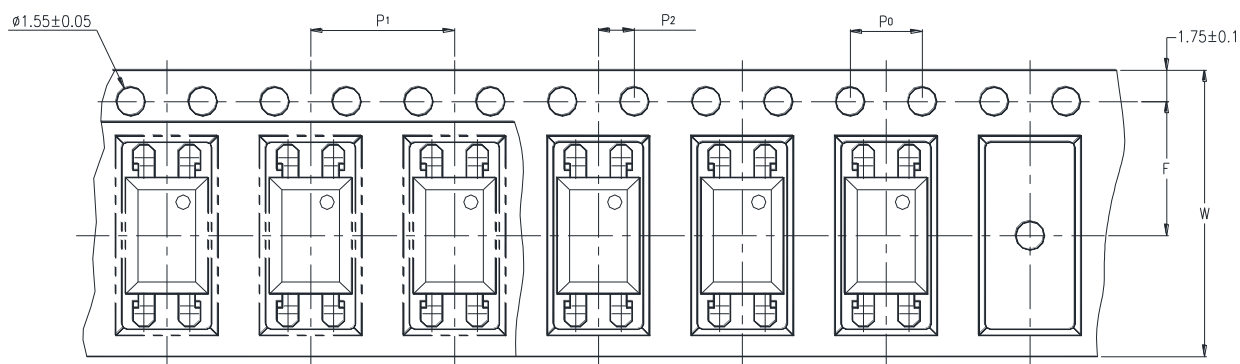
Description	Symbol	Dimensions in mm (inches)
Tape wide	W	16 ± 0.3 (.63)
Pitch of sprocket holes	P_0	4 ± 0.1 (.15)
Distance of compartment	F	7.5 ± 0.1 (.295)
Distance of compartment to compartment	P_2	2 ± 0.1 (.079)
Distance of compartment to sprocket hole	P_1	12 ± 0.1 (.472)

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	$I_F = \pm 20\text{mA}$
	Terminal Capacitance	C_t	—	50	250	pF	$V = 0, f = 1\text{KHz}$
OUTPUT	Collector Dark Current	I_{CEO}	—	—	1	μA	$V_{CE} = 10\text{V}, I_F = 0$
	Collector-Emitter Breakdown Voltage	BV_{CEO}	35	—	—	V	$I_C = 0.1\text{mA}$ $I_F = 0$
	Emitter-Collector Breakdown Voltage	BV_{ECO}	6	—	—	V	$I_E = 10\mu\text{A}$ $I_F = 0$
TRANSFER CHARACTERISTICS	Collector Current	I_C	6	—	75	mA	$I_F = \pm 1\text{mA}$ $V_{CE} = 2\text{V}$
	* Current Transfer Ratio	CTR	600	—	7,500	%	
	Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	—	0.8	1	V	$I_F = \pm 20\text{mA}$ $I_C = 5\text{mA}$
	Isolation Resistance	R_{iso}	5×10^{10}	1×10^{11}	—	Ω	DC500V 40 ~ 60% R.H.
	Floating Capacitance	C_f	—	0.6	1	pF	$V = 0, f = 1\text{MHz}$
	Cut-Off Frequency	f_c	1	6	—	KHz	$V_{CE} = 5\text{V}, I_C = 2\text{mA}$ $R_L = 100\Omega, -3\text{dB}$
	Response Time (Rise)	t_r	—	60	300	μs	$V_{CE} = 2\text{V}, I_C = 10\text{mA}$ $R_L = 100\Omega$
	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

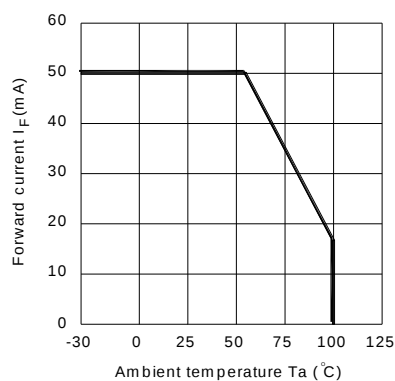


Fig.2 Collector Power Dissipation vs. Ambient Temperature

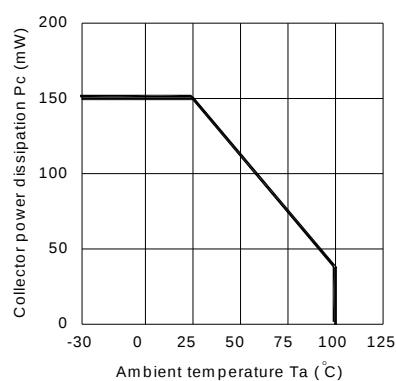


Fig.3 Collector-emitter Saturation Voltage vs. Forward Current

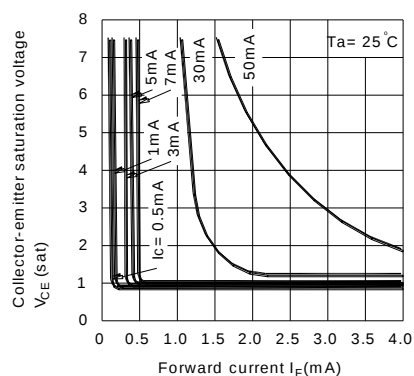


Fig.4 Forward Current vs. Forward Voltage

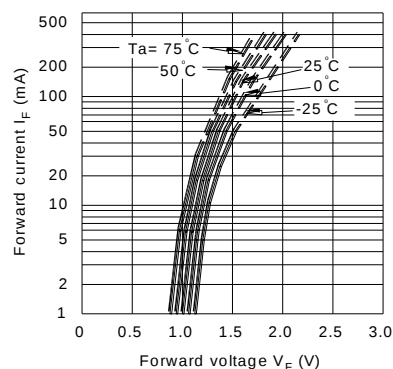


Fig.5 Current Transfer Ratio vs. Forward Current

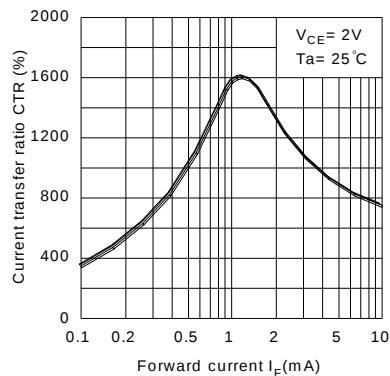
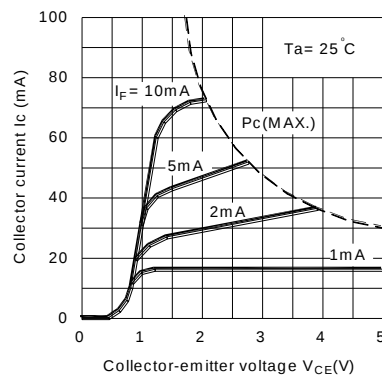


Fig.6 Collector Current vs. Collector-emitter Voltage



CHARACTERISTICS CURVES

Fig.7 Relative Current Transfer Ratio
vs. Ambient Temperature

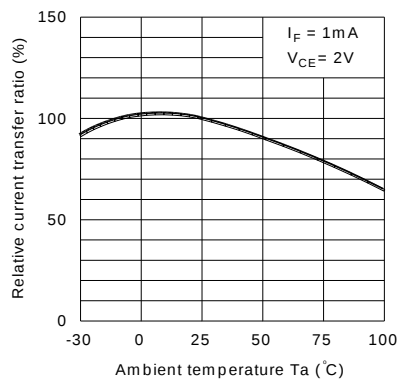


Fig.8 Collector-emitter Saturation Voltage
vs. Ambient Temperature

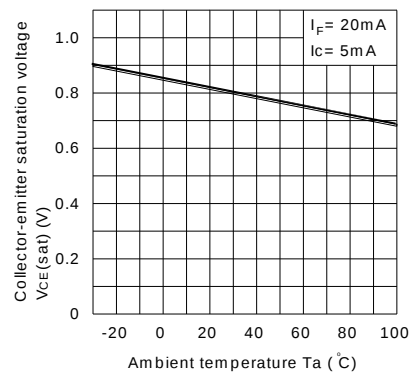


Fig.9 Collector Dark Current vs.
Ambient Temperature

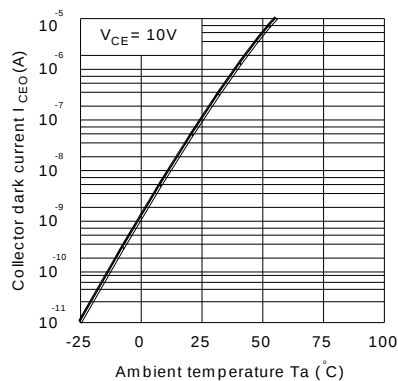


Fig.10 Response Time vs. Load
Resistance

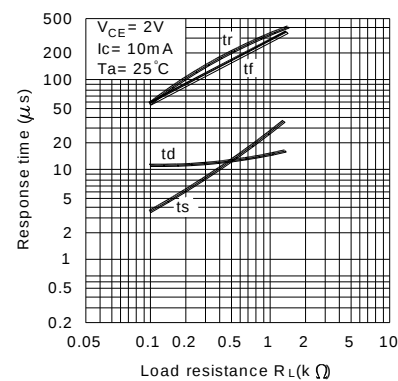
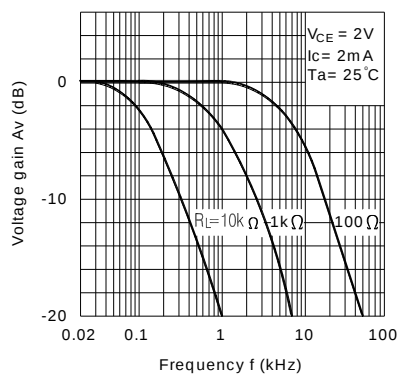
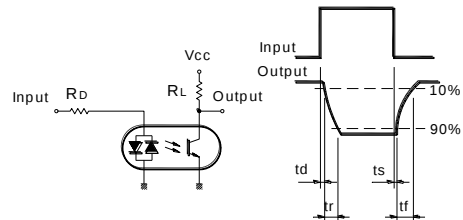


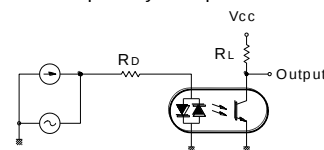
Fig.11 Frequency Response



Test Circuit for Response Time



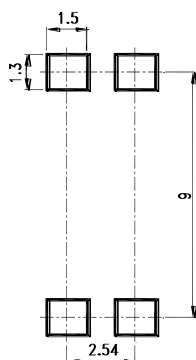
Test Circuit for Frequency Response



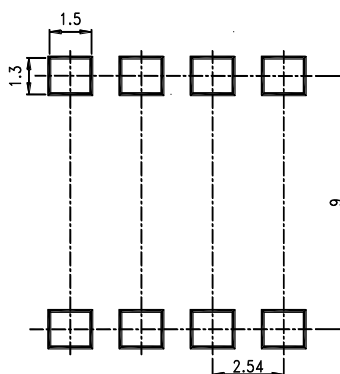
RECOMMENDED FOOT PRINT PATTERNS (MOUNT PAD)

Unit : mm

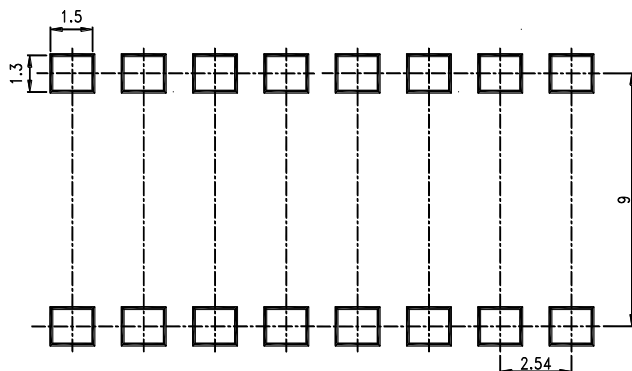
4 PIN



8 PIN



16 PIN



Mouser Electronics

Authorized Distributor

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Lite-On:

[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](#)

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

Skype отдела продаж:

moschip.ru

moschip.ru_4

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