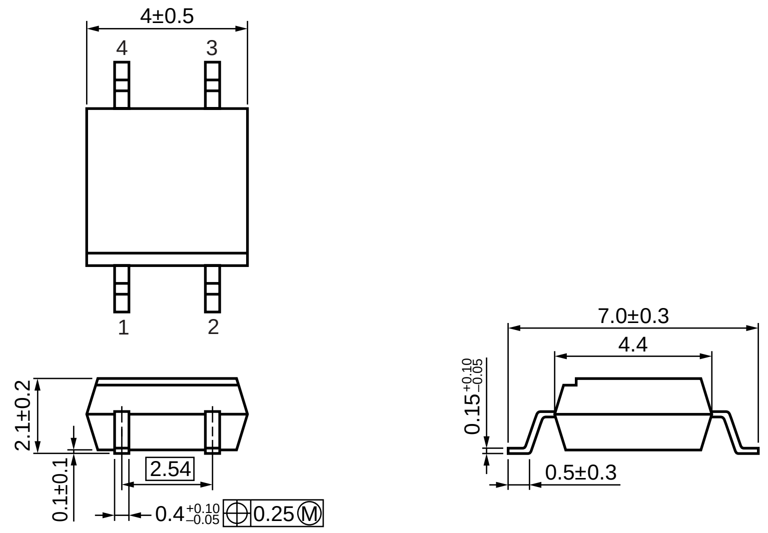
PACKAGE DIMENSIONS (Unit: mm)



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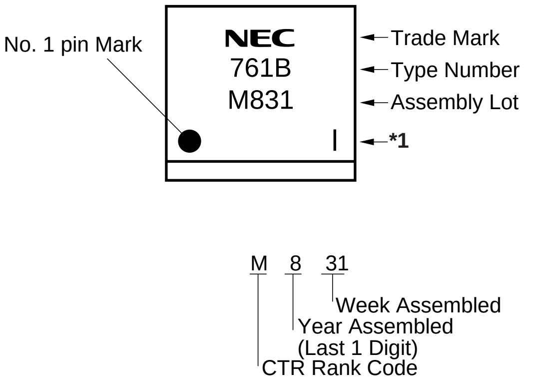
MARKING EXAMPLE

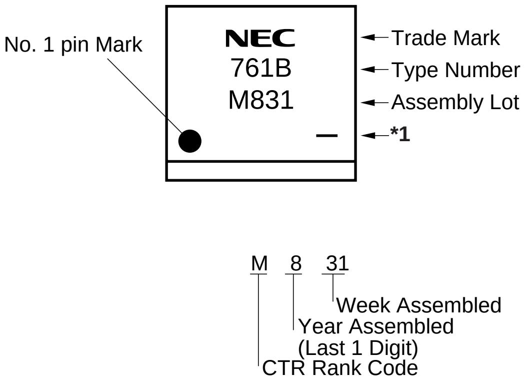
Pb-Free



***1** Bar: Pb-Free

Remark "PS" and "-1" are omitted from original type number

Special version (Pb-Free and Halogen Free)



***1** Bar: Pb-Free and Halogen Free

Remark "PS" and "-1" are omitted from original type number

PHOTOCOUPLER CONSTRUCTION

Parameter	PS2761B-1
Air Distance (MIN.)	5 mm
Outer Creepage Distance (MIN.)	5 mm
Isolation Distance (MIN.)	0.4 mm

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ORDERING INFORMATION

Part Number	Order Number	Solder Plating Specification	Packing Style	Safety Standard Approval	Application Part Number[*1]
PS2761B-1	PS2761B-1-A	Pb-Free	Magazine case 100 pcs	Standard products (UL, CSA, BSI, SEMKO, NEMKO, DEMKO, FIMKO approved)	PS2761B-1
PS2761B-1-F3	PS2761B-1-F3-A		Embossed Tape 3 500 pcs/reel		
PS2761B-1-V	PS2761B-1-V-A		Magazine case 100 pcs	DIN EN60747-5-2 (VDE0884 Part2) Approved (Option)	
PS2761B-1-V-F3	PS2761B-1-V-F3-A		Embossed Tape 3 500 pcs/reel		
PS2761B-1	PS2761B-1Y-A	Special version (Pb-Free and Halogen Free)	Magazine case 100 pcs	Standard products (UL, CSA, BSI, SEMKO, NEMKO, DEMKO, FIMKO approved)	PS2761B-1
PS2761B-1-F3	PS2761B-1Y-F3-A		Embossed Tape 3 500 pcs/reel		
PS2761B-1-V	PS2761B-1Y-V-A		Magazine case 100 pcs	DIN EN60747-5-2 (VDE0884 Part2) Approved (Option)	
PS2761B-1-V-F3	PS2761B-1Y-V-F3-A		Embossed Tape 3 500 pcs/reel		

***1** For the application of the Safety Standard, following part number should be used.

ABSOLUTE MAXIMUM RATINGS (T_A = 25°C, unless otherwise specified)

Parameter		Symbol	Ratings	Unit
Diode	Forward Current (DC)	I_F	25	mA
	Reverse Voltage	V_R	6	V
	Power Dissipation Derating	ΔP_D/°C	0.8	mW/°C
	Power Dissipation	P_D	80	mW
	Peak Forward Current[*1]	I_{FP}	1.0	A
Transistor	Collector to Emitter Voltage	V_{CEO}	70	V
	Emitter to Collector Voltage	V_{ECO}	5	V
	Collector Current	I_C	40	mA
	Power Dissipation Derating	ΔP_C/°C	1.5	mW/°C
	Power Dissipation	P_C	150	mW
Isolation Voltage[*2]		BV	3 750	Vr.m.s.
Operating Ambient Temperature		T_A	–55 to +110	°C
Storage Temperature		T_{stg}	–55 to +150	°C

***1** PW = 100 μs, Duty Cycle = 1%

***2** AC voltage for 1 minute at T_A = 25°C, RH = 60% between input and output.
Pins 1-2 shorted together, 3-4 shorted together.

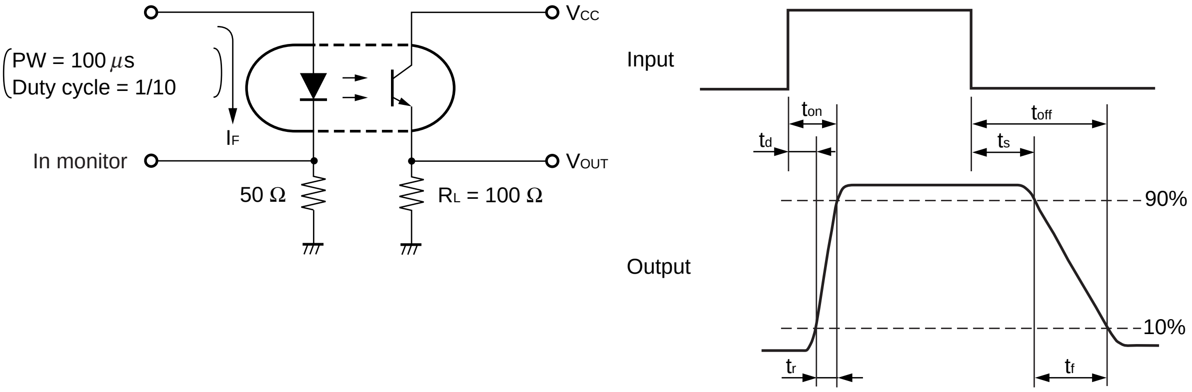
ELECTRICAL CHARACTERISTICS (T_A = 25°C)

Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V_F	I_F = 5 mA		1.1	1.4	V
	Reverse Current	I_R	V_R = 5 V			5	µA
	Terminal Capacitance	C_t	V = 0 V, f = 1 MHz		15		pF
Transistor	Collector to Emitter Dark Current	I_{CEO}	I_F = 0 mA, V_{CE} = 24 V			100	nA
Coupled	Current Transfer Ratio (I_C/I_F) [*1]	CTR	I_F = 5 mA, V_{CE} = 5 V	50	100	400	%
			I_F = 1 mA, V_{CE} = 5 V	10	50		
	Collector Saturation Voltage	$V_{CE\ (sat)}$	I_F = 10 mA, I_C = 2 mA			0.3	V
	Isolation Resistance	$R_{I\text{-}O}$	$V_{I\text{-}O}$ = 1 kV_{DC}	10^{11}			Ω
	Isolation Capacitance	$C_{I\text{-}O}$	V = 0 V, f = 1 MHz		0.4		pF
	Rise Time [*2]	t_r	V_{CC} = 5 V, I_C = 2 mA, R_L = 100 Ω		4		µs
	Fall Time [*2]	t_f			5		

***1** CTR rank

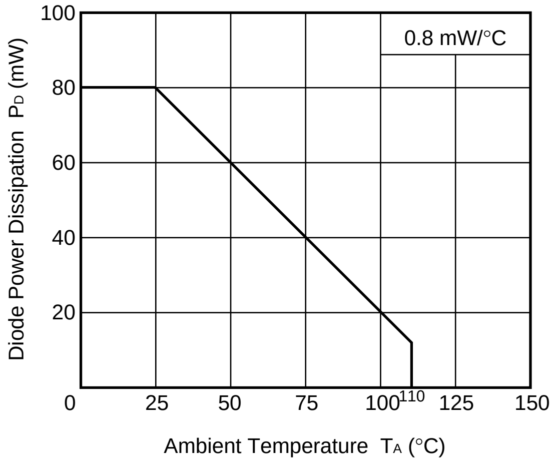
CTR rank	CTR (%)	Conditions
K	200 to 400	I_F = 5 mA, V_{CE} = 5 V
	40 to	I_F = 1 mA, V_{CE} = 5 V
L	100 to 300	I_F = 5 mA, V_{CE} = 5 V
	20 to	I_F = 1 mA, V_{CE} = 5 V
M	50 to 150	I_F = 5 mA, V_{CE} = 5 V
	10 to	I_F = 1 mA, V_{CE} = 5 V
N	50 to 400	I_F = 5 mA, V_{CE} = 5 V
	10 to	I_F = 1 mA, V_{CE} = 5 V

***2** Test circuit for switching time

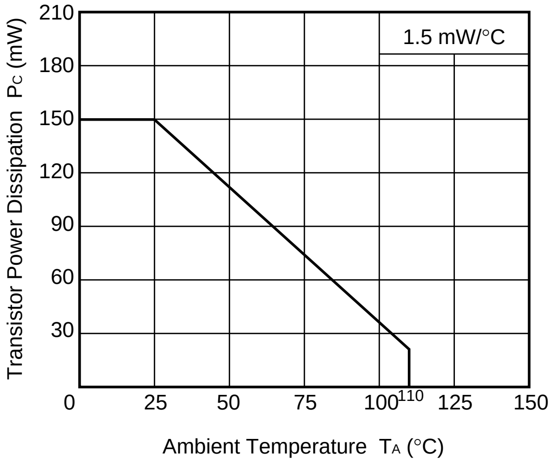


TYPICAL CHARACTERISTICS (T_A = 25°C, unless otherwise specified)

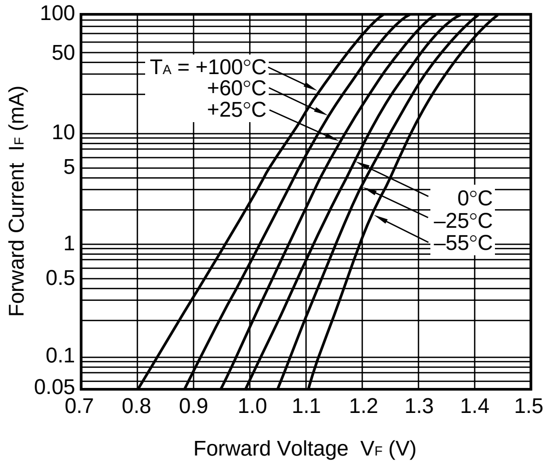
DIODE POWER DISSIPATION vs. AMBIENT TEMPERATURE



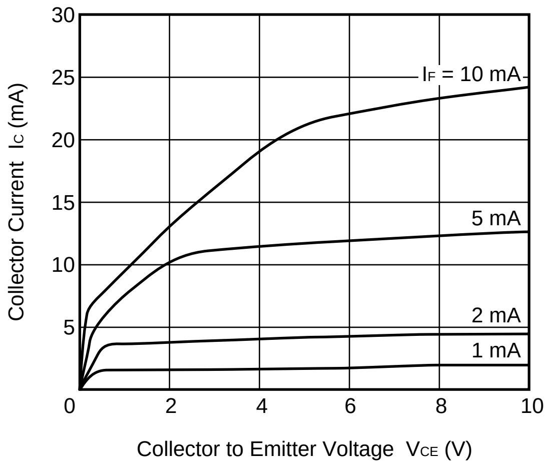
TRANSISTOR POWER DISSIPATION vs. AMBIENT TEMPERATURE



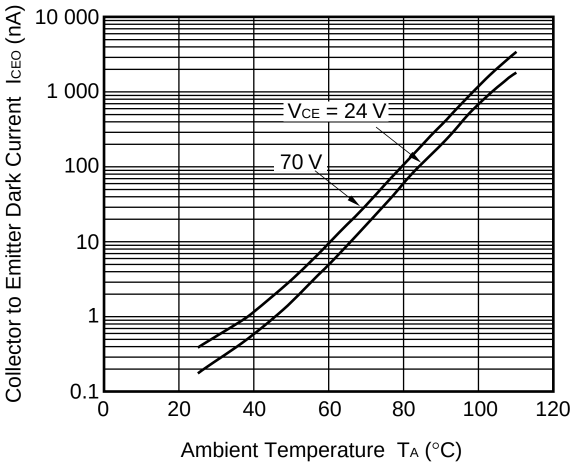
FORWARD CURRENT vs. FORWARD VOLTAGE



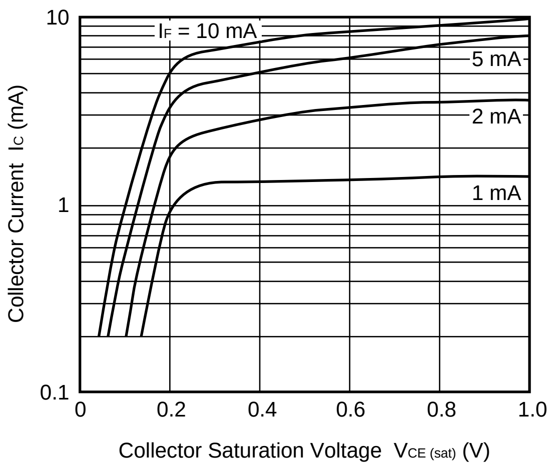
COLLECTOR CURRENT vs. COLLECTOR TO EMITTER VOLTAGE



COLLECTOR TO EMITTER DARK CURRENT vs. AMBIENT TEMPERATURE

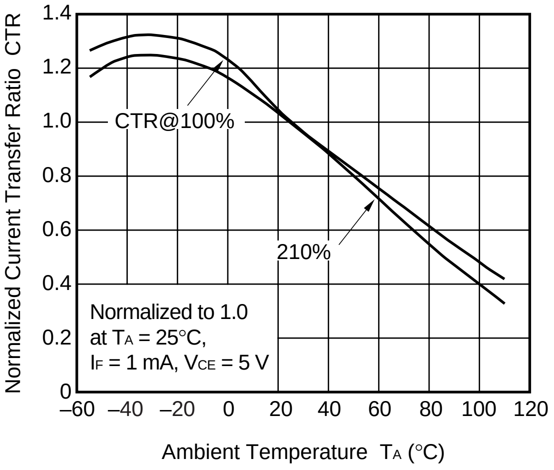


COLLECTOR CURRENT vs. COLLECTOR SATURATION VOLTAGE

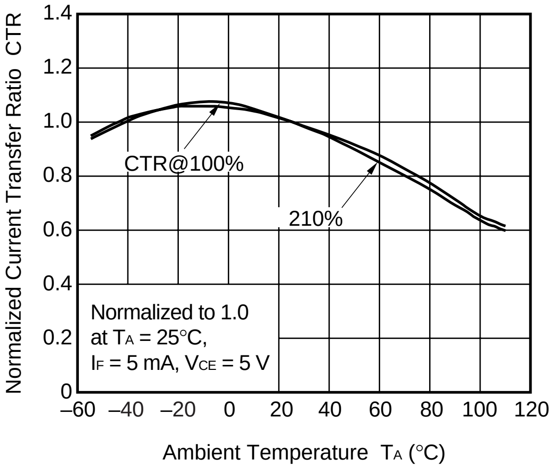


Remark The graphs indicate nominal characteristics.

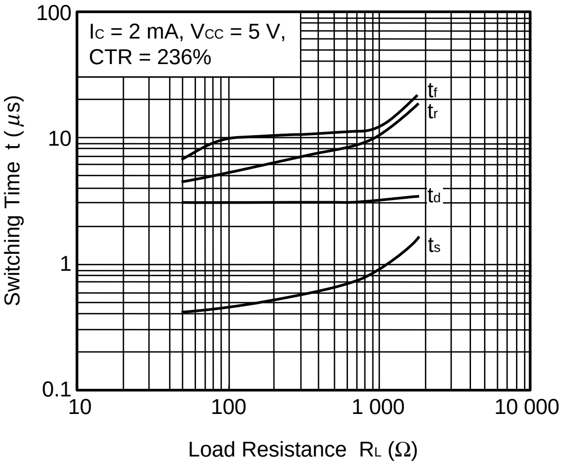
NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE



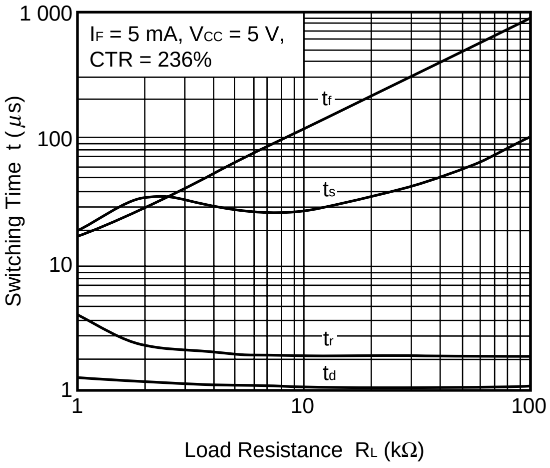
NORMALIZED CURRENT TRANSFER RATIO vs. AMBIENT TEMPERATURE



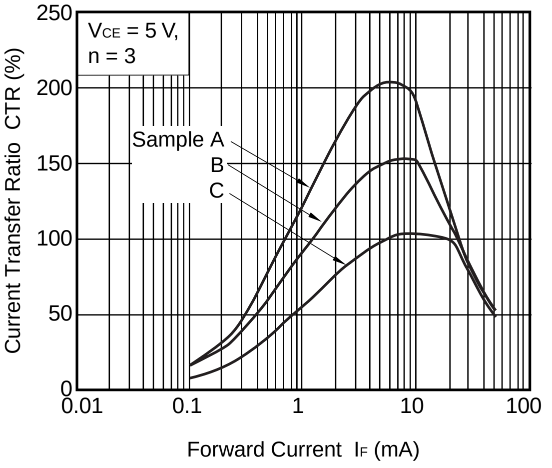
SWITCHING TIME vs. LOAD RESISTANCE



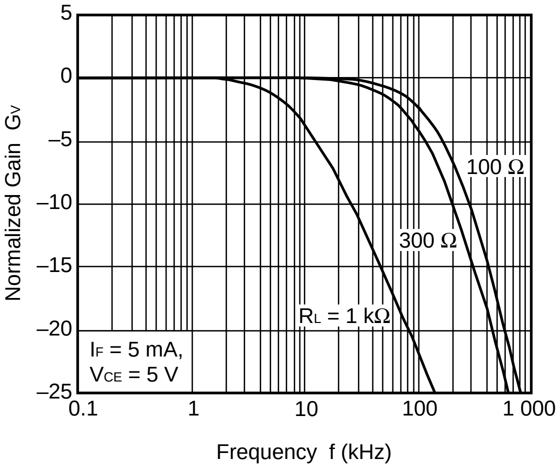
SWITCHING TIME vs. LOAD RESISTANCE



CURRENT TRANSFER RATIO vs. FORWARD CURRENT



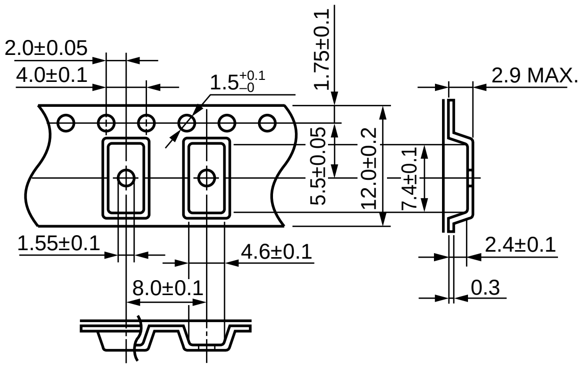
FREQUENCY RESPONSE



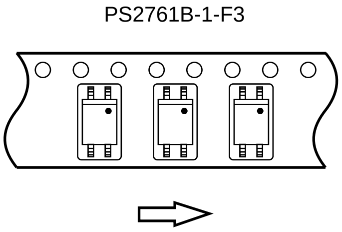
Remark The graphs indicate nominal characteristics.

TAPING SPECIFICATIONS (UNIT: mm)

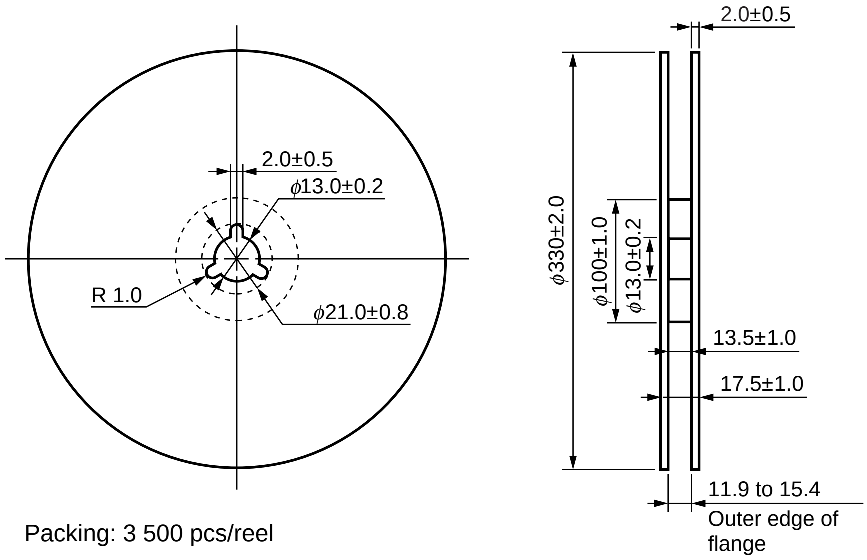
Outline and Dimensions (Tape)



Tape Direction

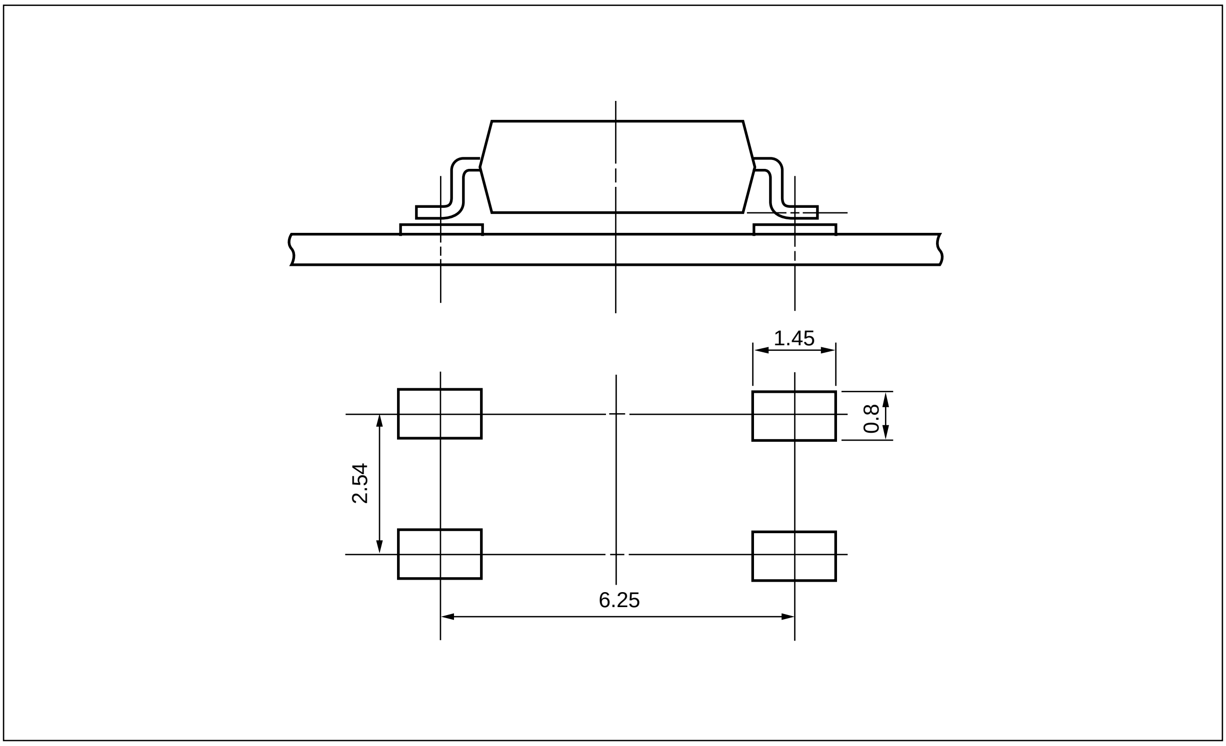


Outline and Dimensions (Reel)



Packing: 3 500 pcs/reel

RECOMMENDED MOUNT PAD DIMENSIONS (UNIT: mm)



Remark All dimensions in this figure must be evaluated before use.

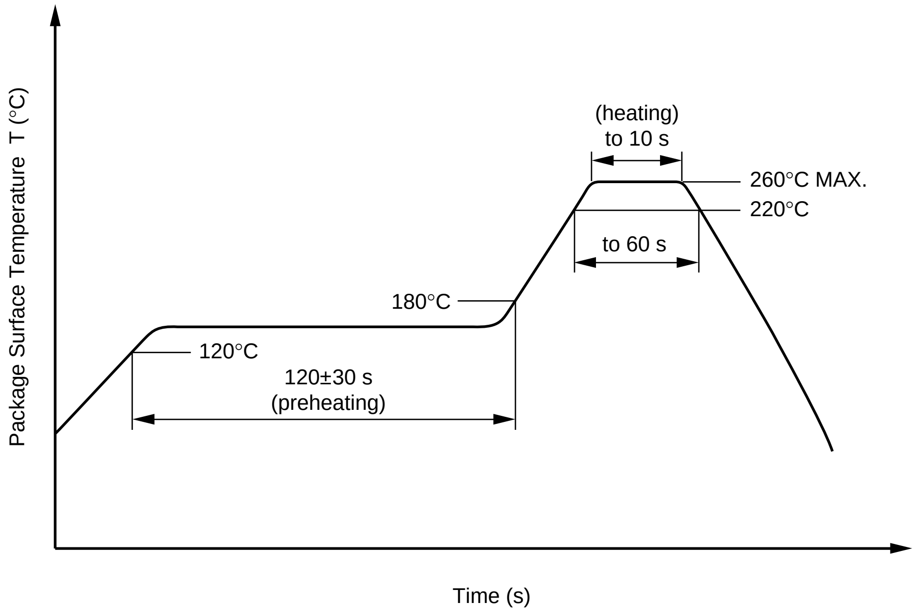
NOTES ON HANDLING

1. Recommended soldering conditions

(1) Infrared reflow soldering

• Peak reflow temperature	260°C or below (package surface temperature)
• Time of peak reflow temperature	10 seconds or less
• Time of temperature higher than 220°C	60 seconds or less
• Time to preheat temperature from 120 to 180°C	120±30 s
• Number of reflows	Three
• Flux	Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

Recommended Temperature Profile of Infrared Reflow



(2) Wave soldering

• Temperature	260°C or below (molten solder temperature)
• Time	10 seconds or less
• Preheating conditions	120°C or below (package surface temperature)
• Number of times	One (Allowed to be dipped in solder including plastic mold portion.)
• Flux	Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

(3) Soldering by soldering iron

• Peak temperature (lead part temperature)	350°C or below
• Time (each pins)	3 seconds or less
• Flux	Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt% is recommended.)

(a) Soldering of leads should be made at the point 1.5 to 2.0 mm from the root of the lead.

(b) Please be sure that the temperature of the package would not be heated over 100°C.

(4) Cautions

- Fluxes

Avoid removing the residual flux with freon-based and chlorine-based cleaning solvent.

2. Cautions regarding noise

Be aware that when voltage is applied suddenly between the photocoupler's input and output or between collector-emitters at startup, the output transistor may enter the on state, even if the voltage is within the absolute maximum ratings.

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3. Measurement conditions of current transfer ratios (CTR), which differ according to photocoupler

Check the setting values before use, since the forward current conditions at CTR measurement differ according to product.

When using products other than at the specified forward current, the characteristics curves may differ from the standard curves due to CTR value variations or the like. Therefore, check the characteristics under the actual operating conditions and thoroughly take variations or the like into consideration before use.

USAGE CAUTIONS

1. Protect against static electricity when handling.
2. Avoid storage at a high temperature and high humidity.

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SPECIFICATION OF VDE MARKS LICENSE DOCUMENT

Parameter	Symbol	Spec.	Unit
Climatic test class (IEC 60068-1/DIN EN 60068-1)		55/110/21	
Dielectric strength			
maximum operating isolation voltage	U_{IORM}	707	V_{peak}
Test voltage (partial discharge test, procedure a for type test and random test)	U_{pr}	1 060	V_{peak}
$U_{pr} = 1.5 \times U_{IORM}$, $P_d < 5$ pC			
Test voltage (partial discharge test, procedure b for all devices)	U_{pr}	1 325	V_{peak}
$U_{pr} = 1.875 \times U_{IORM}$, $P_d < 5$ pC			
Highest permissible overvoltage	U_{TR}	6 000	V_{peak}
Degree of pollution (DIN EN 60664-1 VDE0110 Part 1)		2	
Clearance distance		>5.0	mm
Creepage distance		>5.0	mm
Comparative tracking index (IEC 60112/DIN EN 60112 (VDE 0303 Part 11))	CTI	175	
Material group (DIN EN 60664-1 VDE0110 Part 1)		III a	
Storage temperature range	T_{stg}	–55 to +150	°C
Operating temperature range	T_A	–55 to +110	°C
Isolation resistance, minimum value			
V_{IO} = 500 V dc at T_A = 25°C	Ris MIN.	10^{12}	Ω
V_{IO} = 500 V dc at T_A MAX. at least 100°C	Ris MIN.	10^{11}	Ω
Safety maximum ratings (maximum permissible in case of fault, see thermal derating curve)			
Package temperature	Tsi	150	°C
Current (input current I_F, Psi = 0)	Isi	300	mA
Power (output or total power dissipation)	Psi	500	mW
Isolation resistance			
V_{IO} = 500 V dc at T_A = Tsi	Ris MIN.	10^9	Ω

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