

NEC**PHOTOCOUPLER**
PS2571-1,-4, PS2571L-1,-4**HIGH ISOLATION VOLTAGE SAFETY STANDARD TYPE**
MULTI PHOTOCOUPLER SERIES

-NEPOC™ Series-

DESCRIPTION

The PS2571-1, -4 and PS2571L-1, -4 are optically coupled isolators containing GaAs light emitting diodes and NPN silicon phototransistors.

The PS2571-1, -4 are in a plastic DIP (Dual In-line Package) and the PS2571L-1, -4 are lead bending type (Gull-wing) for surface mount.

★ FEATURES

- High isolation voltage (BV = 5 000 Vr.m.s.)
- High current transfer ratio (CTR = 200 % TYP.)
- High-speed switching ($t_r = 3 \mu s$ TYP., $t_f = 5 \mu s$ TYP.)
- Ordering number of taping product : PS2571L-1-E3, E4, F3, F4
- UL approved: File No. E72422 (S)
- BSI approved: No. 8343/8344
- CSA approved: No. CA 101391
- NEMKO approved: No. P98102650
- DEMKO approved: No. 308152
- SEMKO approved: No. 9832161/01
- FIMKO approved: No. F1 11899
- VDE0884 approved (Option)

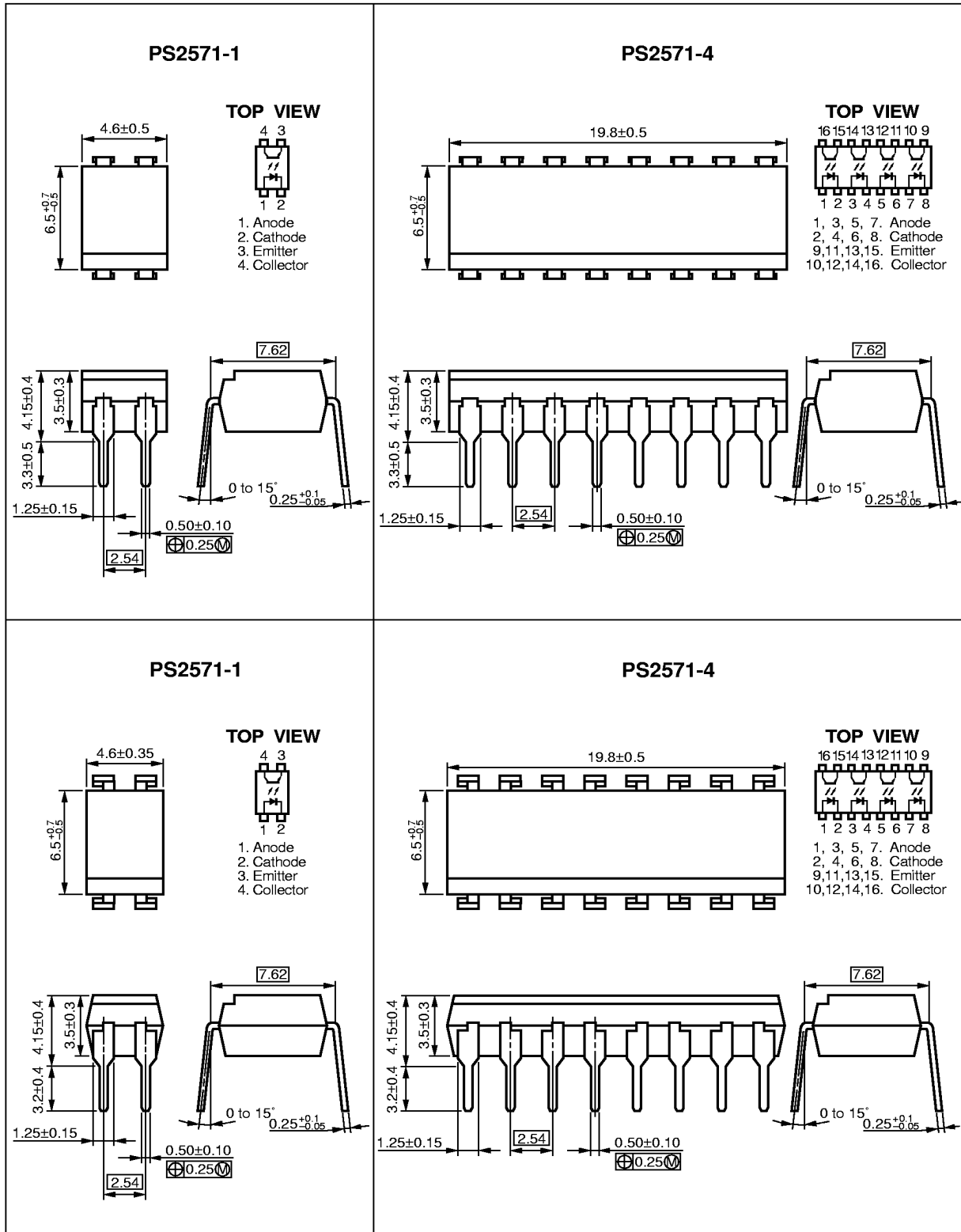
APPLICATIONS

- Power supply
- Telephone, FAX
- FA/OA equipment
- Programmable logic controller

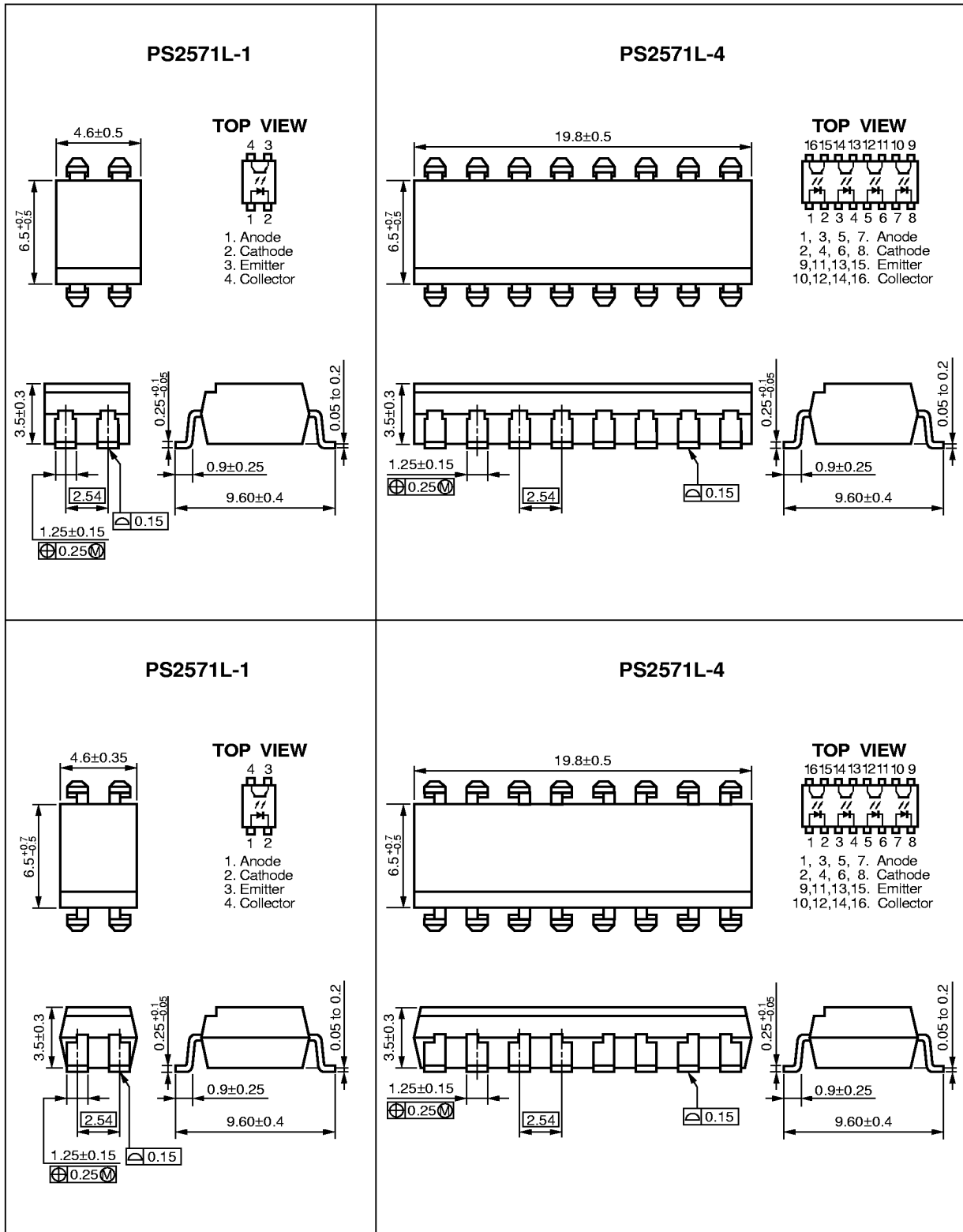
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Not all devices/types available in every country. Please check with local NEC representative for availability and additional information.

★ PACKAGE DIMENSIONS (in millimeters)

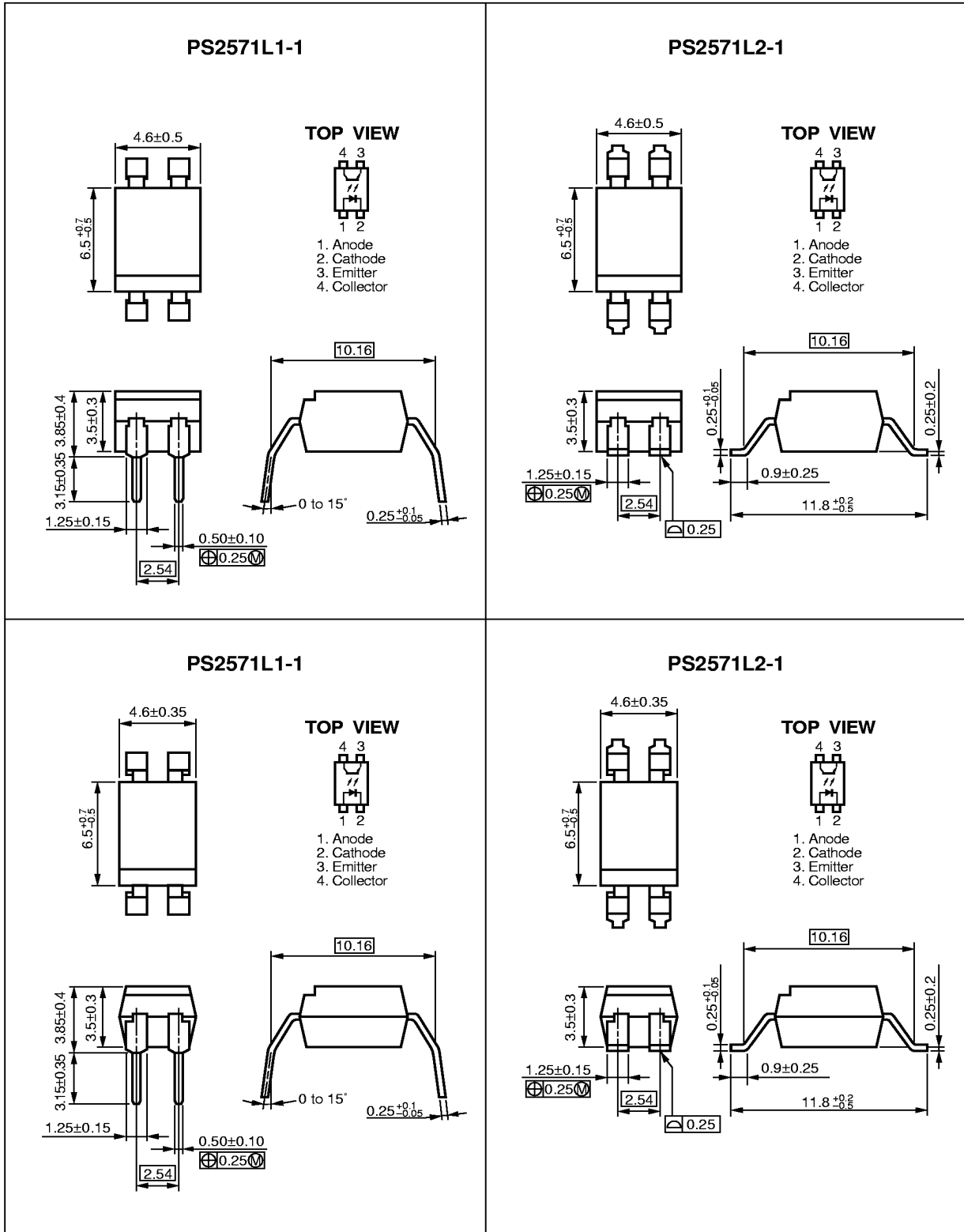
DIP type



Lead bending type



Lead bending type for long distance



PHOTOCOUPLER CONSTRUCTION

Parameter	Unit (MIN.)
Air Distance	7 mm
Outer Creepage Distance	7 mm
Inner Creepage Distance	4 mm
Isolation Thickness	0.4 mm

★ **ORDERING INFORMATION**

Part Number	Package	Packing Style	Safety Standard Approval	Application Part Number ^{*1}
PS2571-1	4-pin DIP	Magazine case 100 pcs	Standard products (UL, CSA, BSI, NEMKO, SEMKO, DEMKO, FIMKO approved)	PS2571-1
PS2571L-1		Embossed Tape 1 000 pcs/reel		
PS2571L-1-E3				
PS2571L-1-E4		Embossed Tape 2 000 pcs/reel		
PS2571L-1-F3				
PS2571L-1-F4				
PS2571-4	16-pin DIP	Magazine case 20 pcs		PS2571-4
PS2571L-4				
PS2571-1-V	4-pin DIP	Magazine case 100 pcs	VDE0884 approved products (Option)	PS2571-1
PS2571L-1-V		Embossed Tape 1 000 pcs/reel		
PS2571L-1-V-E3				
PS2571L-1-V-E4		Embossed Tape 2 000 pcs/reel		
PS2571L-1-V-F3				
PS2571L-1-V-F4				
PS2571-4-V	16-pin DIP	Magazine case 20 pcs		PS2571-4
PS2571L-4-V				

*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
			PS2571-1, PS2571L-1	PS2571-4, PS2571L-4	
Diode	Forward Current (DC)	I _F	50		mA
	Reverse Voltage	V _R	6		V
	Power Dissipation Derating	ΔP _D /°C	0.7	0.55	mW/°C
	Power Dissipation	P _D	70	55	mW/ch
	Peak Forward Current ^{*1}	I _{FP}	1		A
Transistor	Collector to Emitter Voltage	V _{CEO}	40		V
	Emitter to Collector Voltage	V _{ECO}	5		V
	Collector Current	I _C	40		mA/ch
	Power Dissipation Derating	ΔP _C /°C	1.5	1.2	mW/°C
	Power Dissipation	P _C	150	120	mW/ch
Isolation Voltage ^{*2}		BV	5 000		Vr.m.s.
Operating Ambient Temperature		T _A	-55 to +100		°C
Storage Temperature		T _{stg}	-55 to +150		°C

*1 PW = 100 μs, Duty Cycle = 1 %

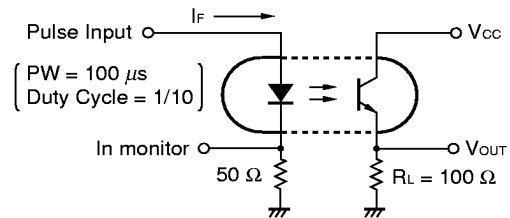
*2 AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output

ELECTRICAL CHARACTERISTICS (T_A = 25 °C)

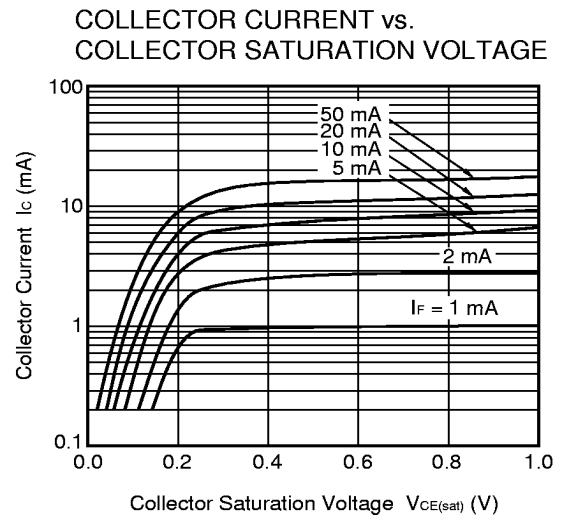
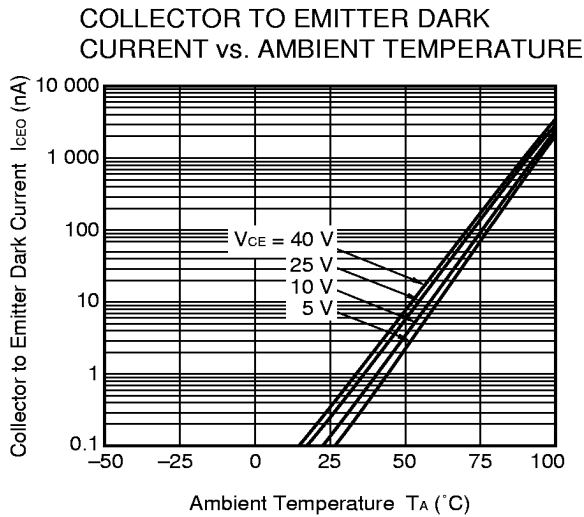
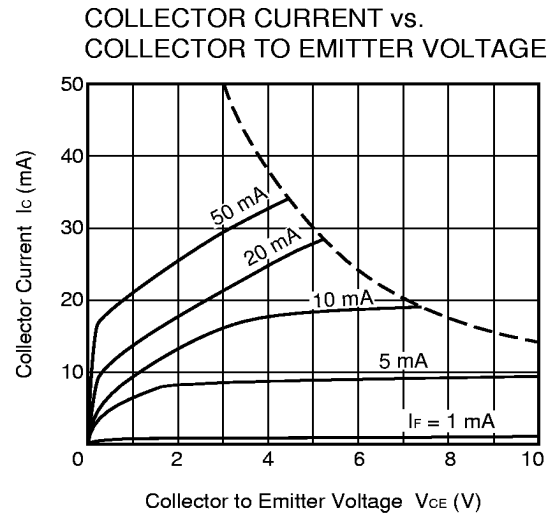
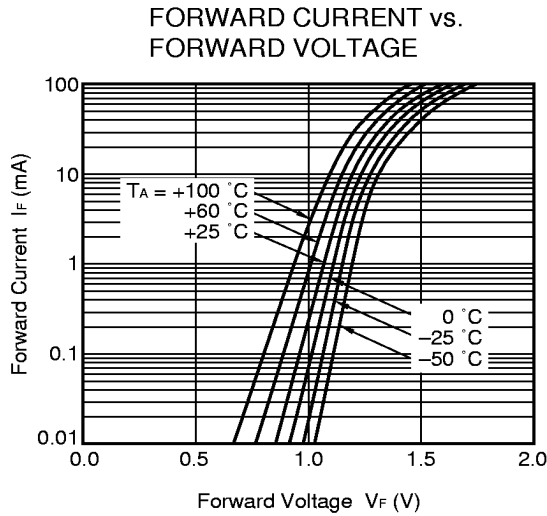
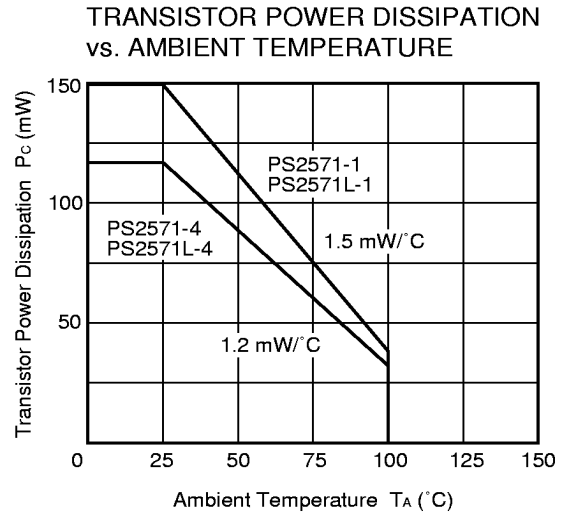
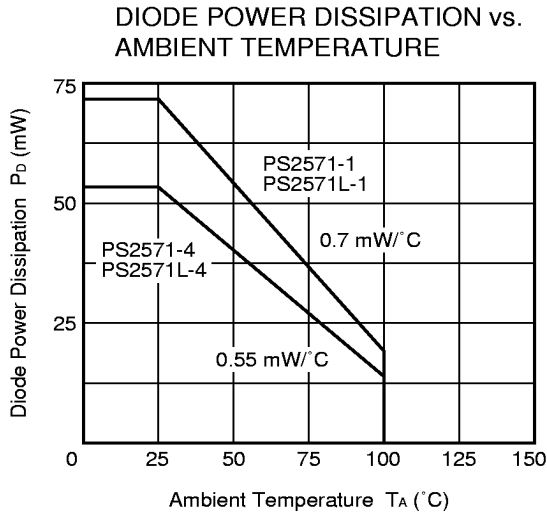
Parameter		Symbol	Conditions	MIN.	TYP.	MAX.	Unit
Diode	Forward Voltage	V _F	I _F = 10 mA		1.2	1.4	V
	Reverse Current	I _R	V _R = 5 V			5	μA
	Terminal Capacitance	C _T	V = 0 V, f = 1.0 MHz		50		pF
Transistor	Collector to Emitter Dark Current	I _{CEO}	V _{CE} = 40 V, I _F = 0 mA			100	nA
Coupled	Current Transfer Ratio (I _C /I _F) ^{*1}	CTR	I _F = 5 mA, V _{CE} = 5 V	80	200	400	%
	Collector Saturation Voltage	V _{CE(sat)}	I _F = 10 mA, I _C = 2 mA			0.3	V
	Isolation Resistance	R _{I-O}	V _{I-O} = 1.0 kV _{DC}	10 ¹¹			Ω
	Isolation Capacitance	C _{I-O}	V = 0 V, f = 1.0 MHz		0.5		pF
	Rise Time ^{*2}	t _r	V _{CC} = 10 V, I _C = 2 mA, R _L = 100 Ω		3		μs
	Fall Time ^{*2}	t _f			5		

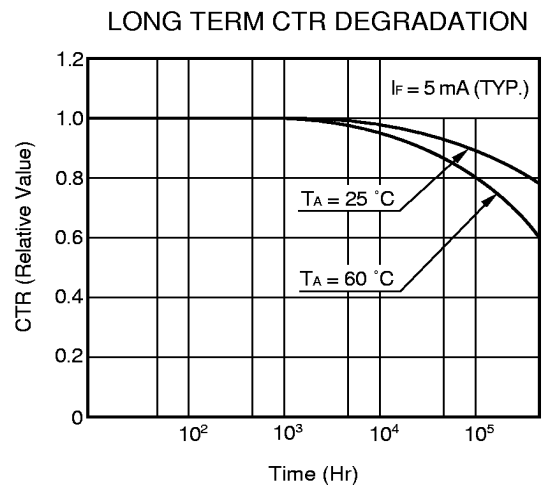
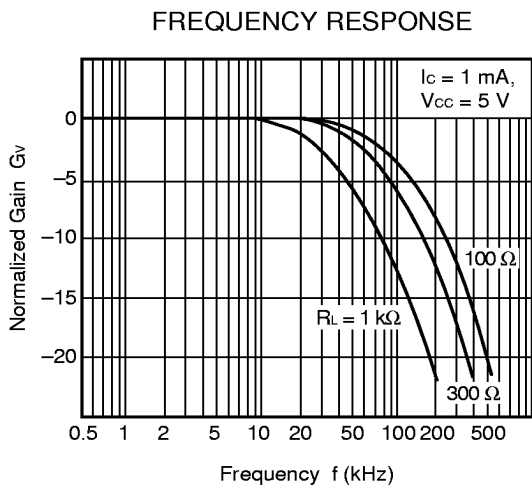
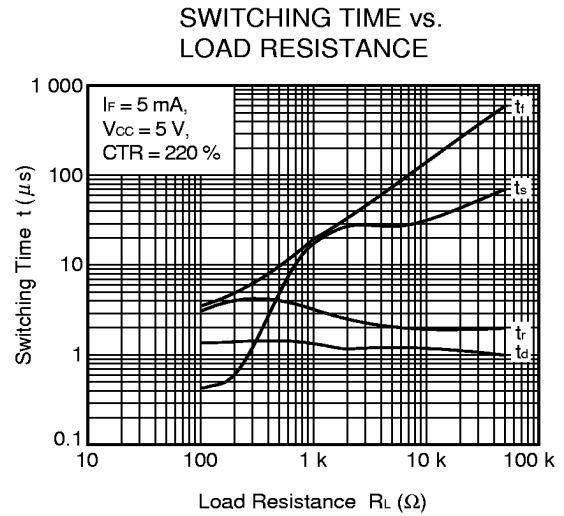
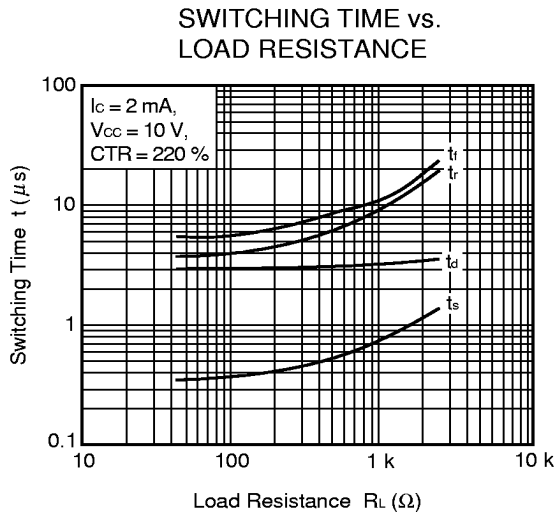
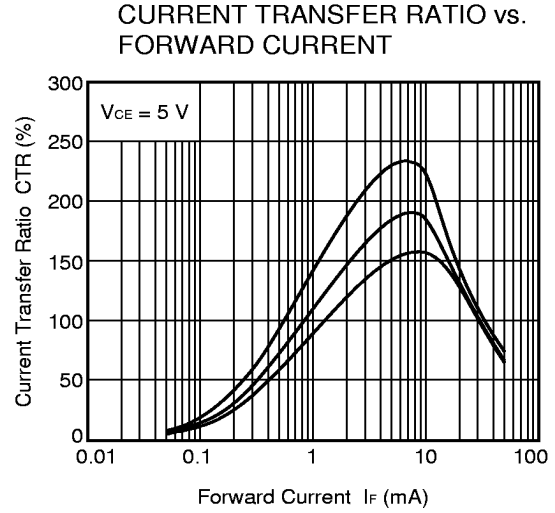
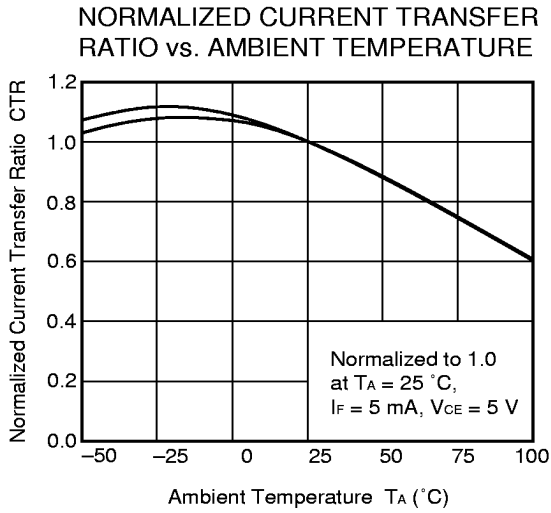
*1 CTR rank (PS2571-1,PS2571L-1 only)
D : 100 to 300 %

*2 Test Circuit for Switching Time



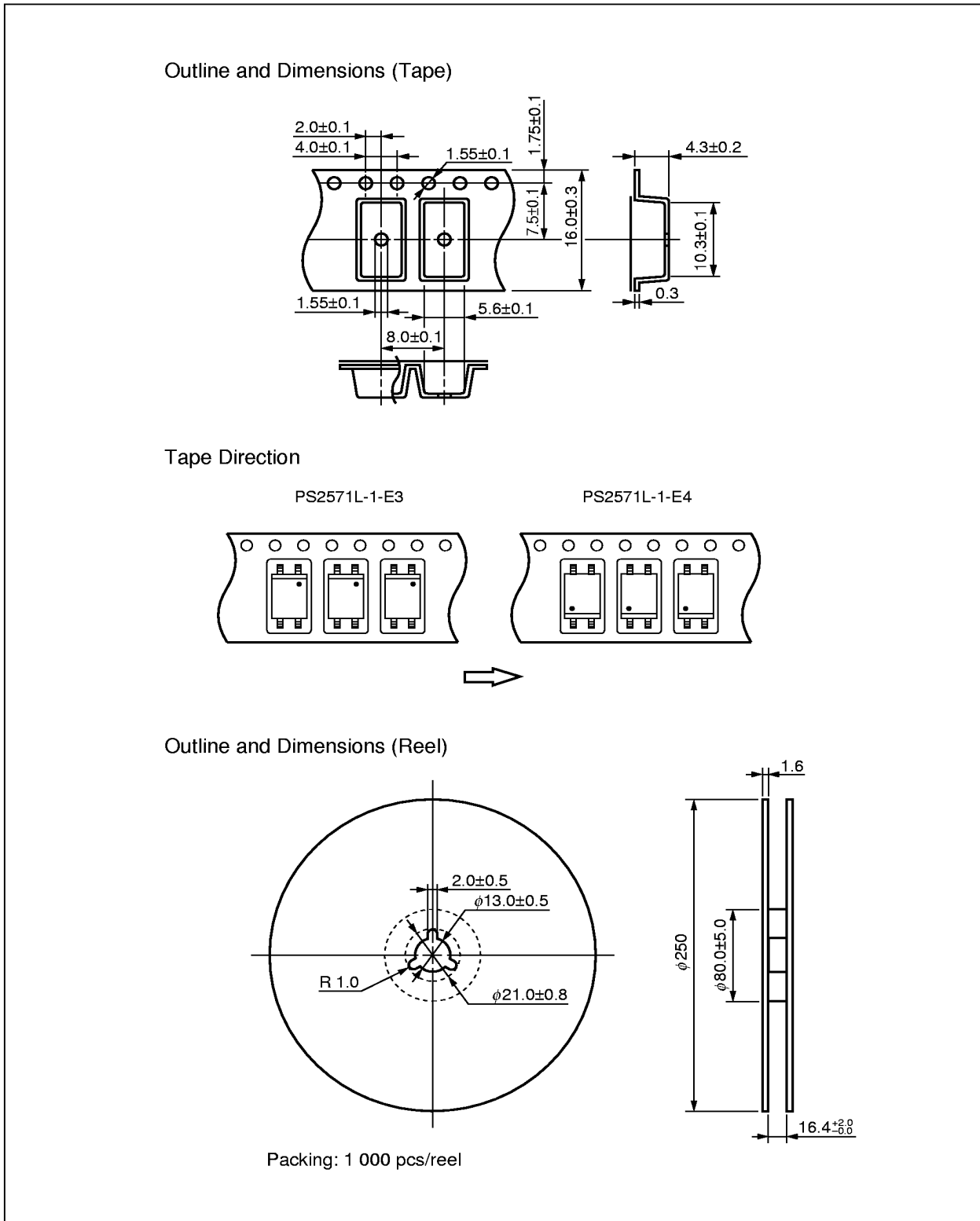
TYPICAL CHARACTERISTICS (T_A = 25 °C, unless otherwise specified)



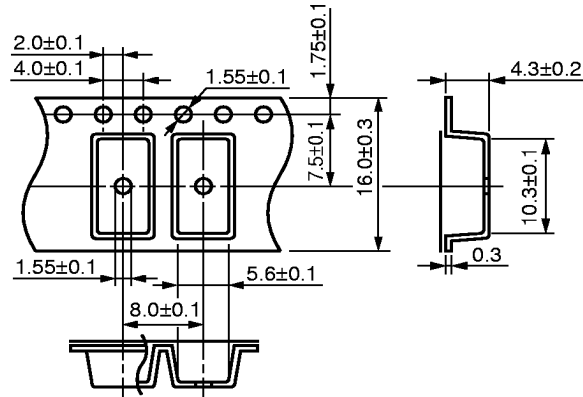


Remark The graphs indicate nominal characteristics.

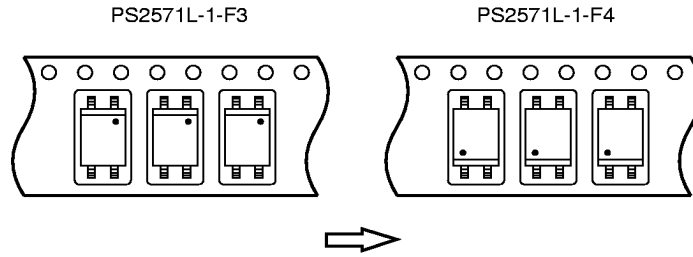
★ TAPING SPECIFICATIONS (in millimeters)



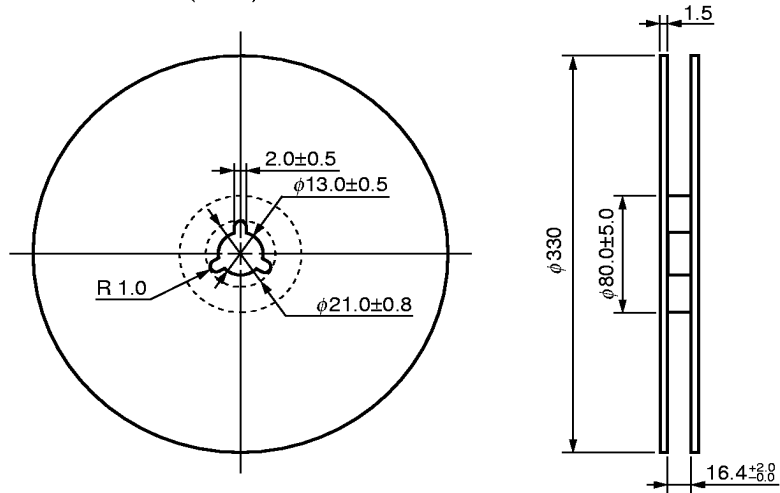
Outline and Dimensions (Tape)



Tape Direction



Outline and Dimensions (Reel)



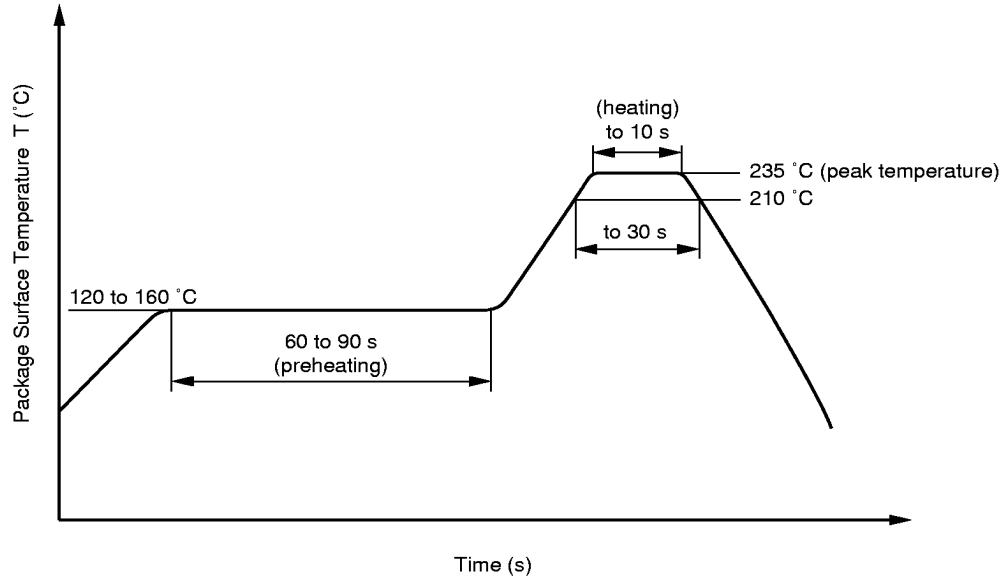
Packing: 2 000 pcs/reel

RECOMMENDED SOLDERING CONDITIONS

(1) Infrared reflow soldering

- Peak reflow temperature 235 °C (package surface temperature)
- Time of temperature higher than 210 °C 30 seconds or less
- 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) Dip soldering

- Temperature 260 °C or below (molten solder temperature)
- Time 10 seconds or less
- Number of times One
- Flux Rosin flux containing small amount of chlorine (The flux with a maximum chlorine content of 0.2 Wt % is recommended.)

(3) Cautions

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