

FEATURES

- **LOW ON-STATE RESISTANCE:**
 $R_{ON} = 0.6 \Omega$ TYP
- **LARGE CONTINUOUS LOAD CURRENT:**
 $I_L = 600$ mA
- **1 CHANNEL TYPE:**
1a output
- **DESIGNED FOR AC/DC SWITCHING LINE CHANGER**
- **SMALL AND THIN PACKAGE:**
4 pin SOP, Height = 2.1 mm
- **HIGH ISOLATION VOLTAGE:**
($BV = 1500$ Vr.m.s.)
- **LOW OFFSET VOLTAGE:**
- **SURFACE MOUNT TYPE LEAD:**
PS7206-1A-E3, E4, F3, F4

DESCRIPTION

The PS7206-1A is a low on-state resistance solid state relay containing GaAs LEDs on the light emitting side (input side) and MOS FETs on the output side.

It is suitable for PLC, etc. because of its large continuous load current and low on-state resistance.

APPLICATIONS

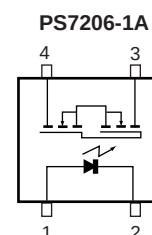
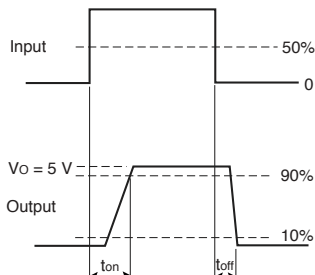
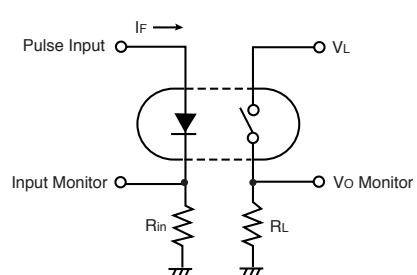
- MEASUREMENT EQUIPMENT
- FA EQUIPMENT

ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$)

PART NUMBER				PS7206-1A		
SYMBOLS		PARAMETERS	UNITS	MIN	TYP	MAX
Diode	V_F	Forward Voltage, $I_F = 10$ mA	V		1.2	1.4
	I_R	Reverse Current, $V_R = 5$ V	μA			5.0
MOS FET	I_{OFF}	Off-State Leakage Current, $V_D = 60$ V	μA			1.0
	C_{OUT}	Output Capacitance, $V_D = 0$ V, $f = 1$ MHz	pF		70	
Coupled	I_{Fon}	LED On-State Current, $I_L = 600$ mA	mA			2.0
	R_{on}	On-state Resistance, $I_F = 10$ mA, $I_L = 600$ mA, $t \leq 10$ ms	Ω		0.6	0.8
	t_{ON}	Turn-on Time, $I_F = 10$ mA, $V_O = 5$ V, $R_L = 500 \Omega$, $PW \geq 10$ ms	ms		0.4	2.0
	t_{OFF}	Turn-off Time, $I_F = 10$ mA, $V_O = 5$ V, $R_L = 500 \Omega$, $PW \geq 10$ ms	ms		0.08	0.5
	R_{i-o}	Isolation Resistance, $V_{i-o} = 1.0$ kVDC	Ω	10^9		
	C_{i-o}	Isolation Capacitance, $V = 0$ V, $f = 1$ MHz	pF		0.5	

Note:

1. Test Circuit for Switching Time



ABSOLUTE MAXIMUM RATINGS¹ (T_A = 25°C)

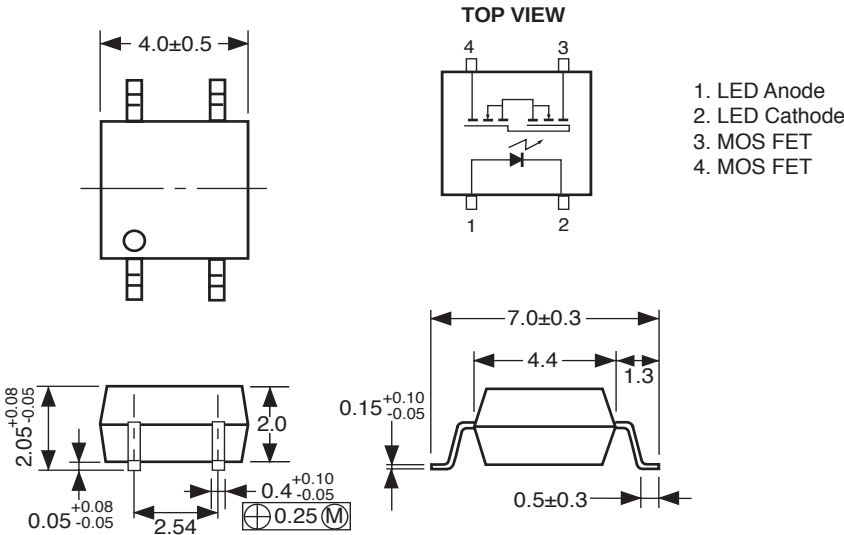
SYMBOLS	PARAMETERS	UNITS	RATINGS
Diode			
I _F	Forward Current (DC)	mA	50
V _R	Reverse Voltage	V	5.0
P _D	Power Dissipation	mW	50
I _{FP}	Peak Foward Current ²	A	1
MOSFET			
V _L	Break Down Voltage	V	60
I _L	Continuous Load Current	mA	600
I _{LP}	Pulse Load Current ³ (AC/DC Connection)	A	1.2
P _D	Power Dissipation	mW/ch	300
Coupled			
BV	Isolation Voltage ⁴	Vr.m.s.	1500
P _T	Total Power Dissipation	mW	350
T _A	Operating Ambient Temp.	°C	-40 to +85
T _{STG}	Storage Temperature	°C	-40 to +100

RECOMMENDED
OPERATING CONDITIONS (T_A = 25°C)

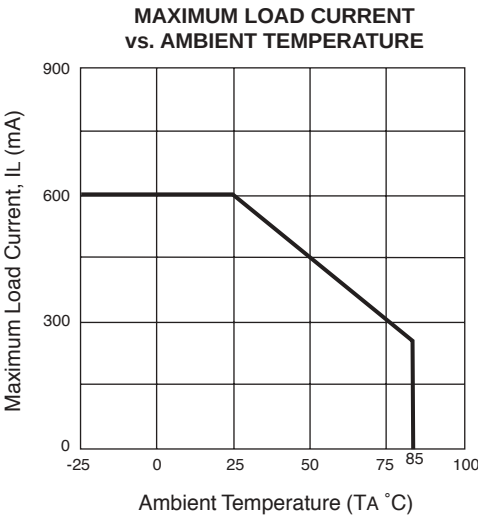
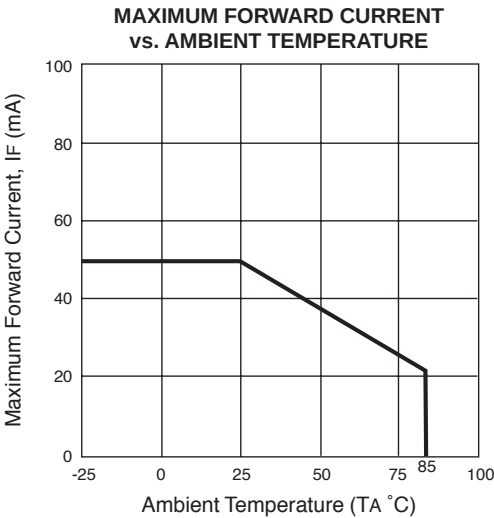
PART NUMBER		PS7206-1A			
SYMBOLS	PARAMETERS	UNITS	MIN	TYP	MAX
I _F	LED Operating Current	mA	2	10	20
V _F	LED Off Voltage	V	0		0.5

- Notes:
1. Operation in excess of any one of these parameters may result in permanent damage.
 2. PW = 100 μs, Duty Cycle = 1 %
 3. PW = 100 ms, 1 shot
 4. AC voltage for 1 minute at T_A = 25 °C, RH = 60 % between input and output.

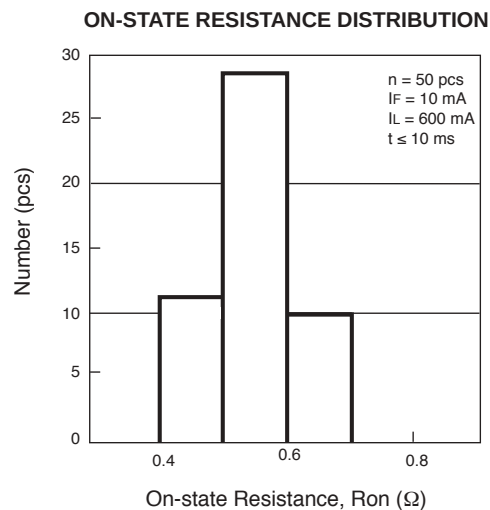
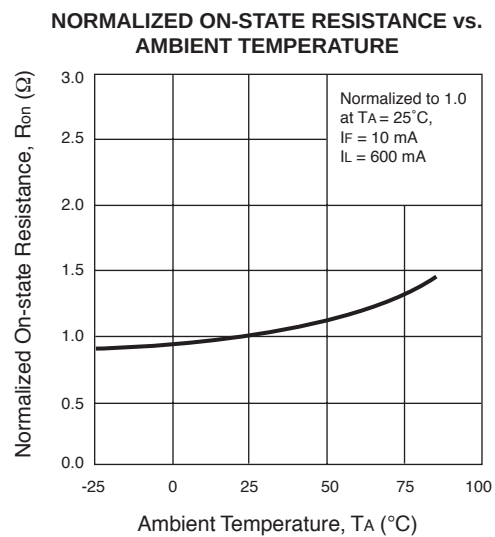
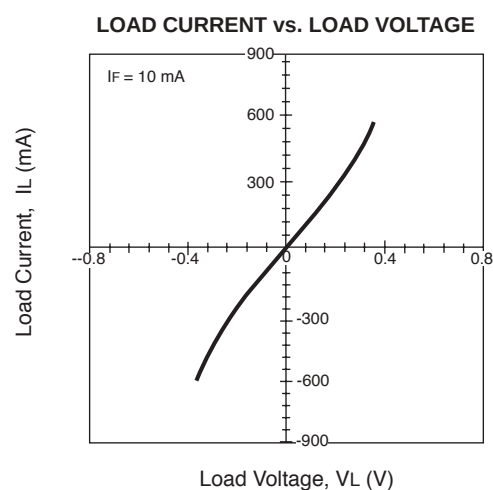
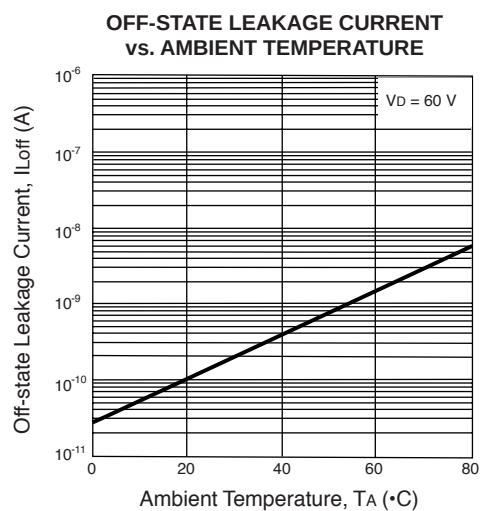
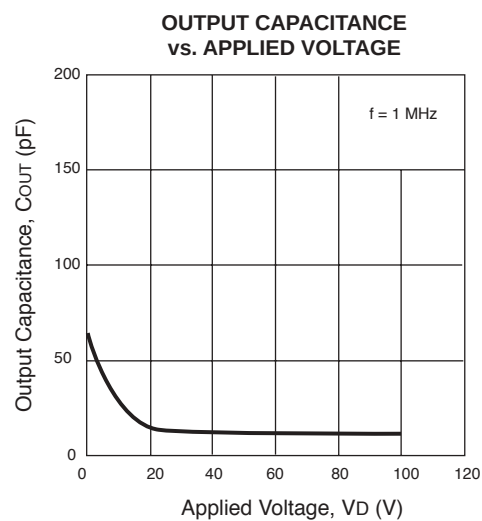
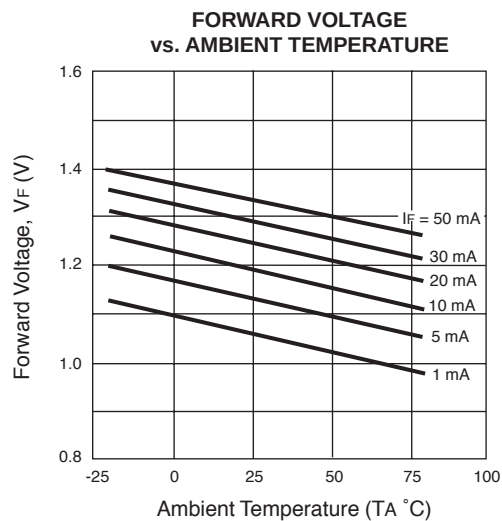
OUTLINE DIMENSIONS (Units in mm)



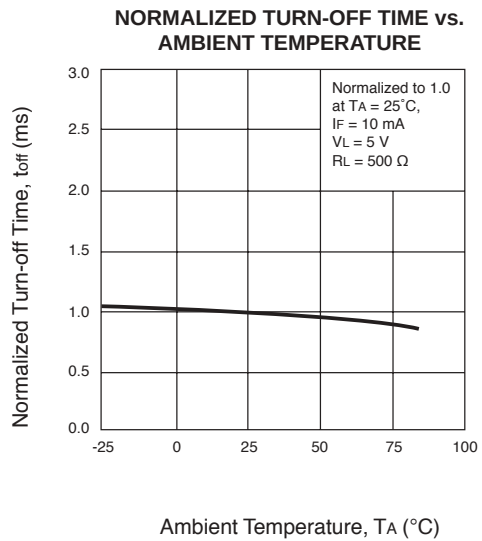
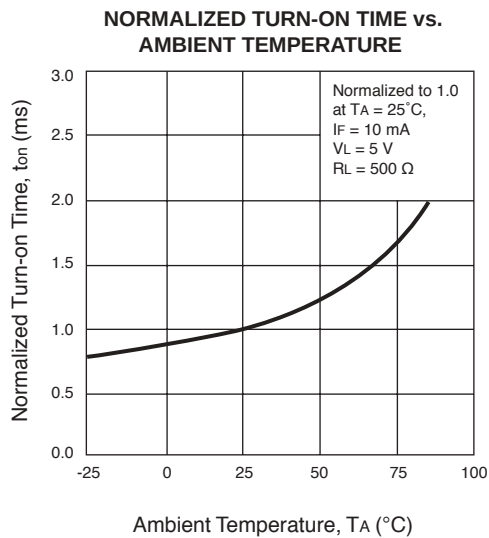
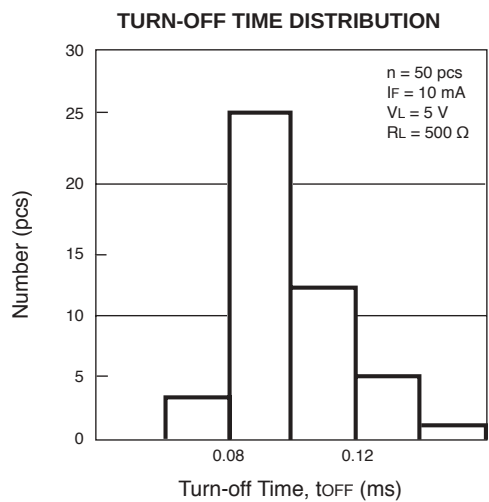
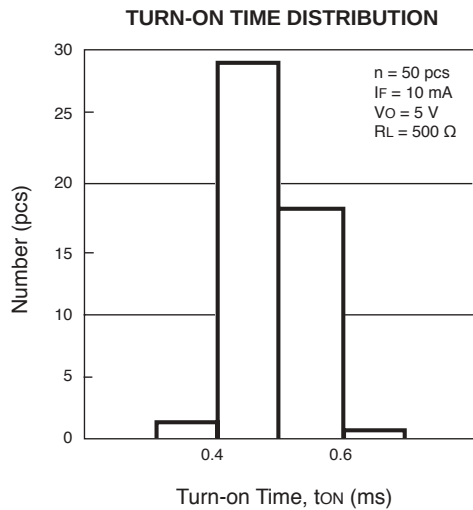
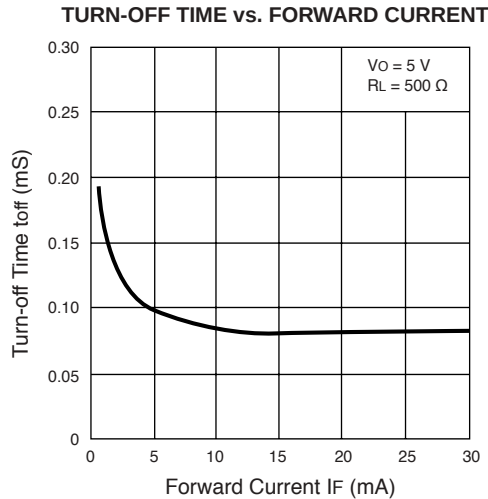
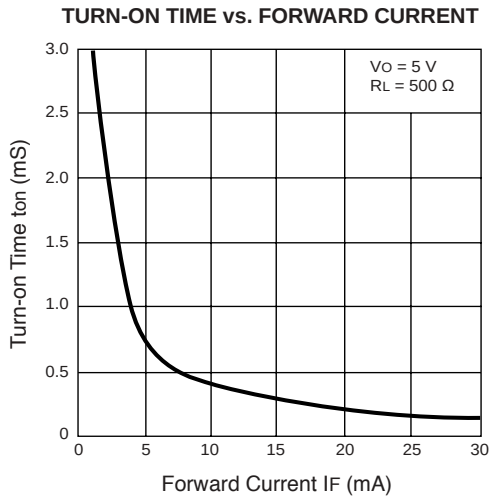
TYPICAL PERFORMANCES CURVES (T_A = 25°C)

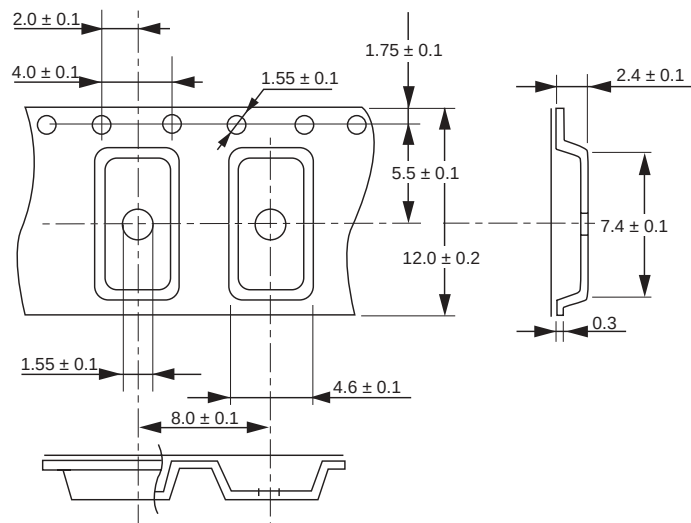
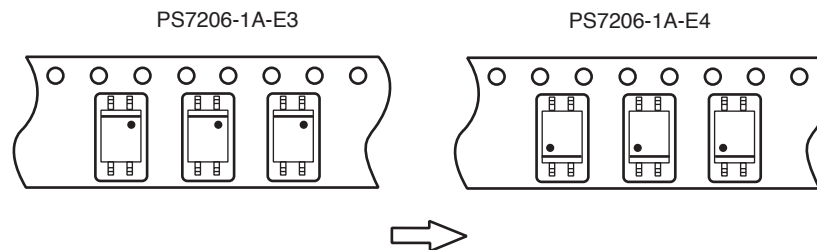
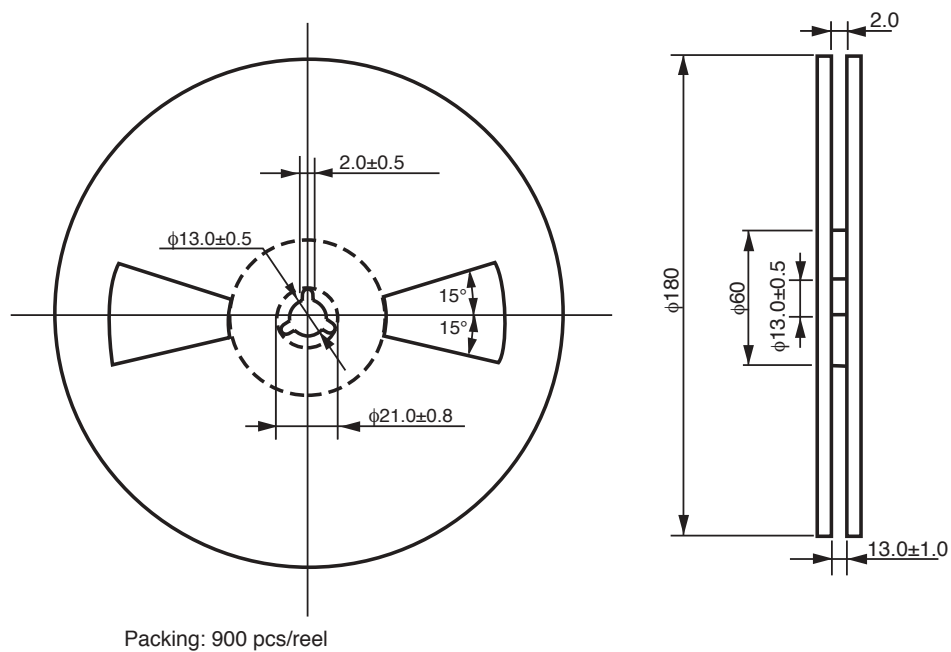


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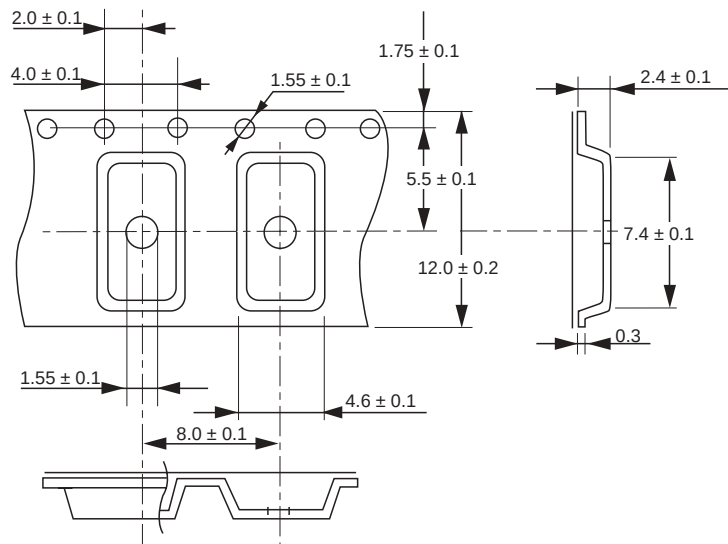
TYPICAL PERFORMANCE CURVES (TA = 25°C)



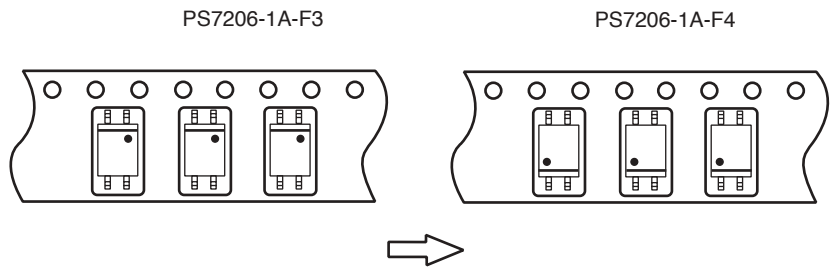
TAPING SPECIFICATIONS (Units in mm)**OUTLINE AND DIMENSIONS (TAPE)****TAPE DIRECTION****OUTLINE AND DIMENSIONS (REEL)**

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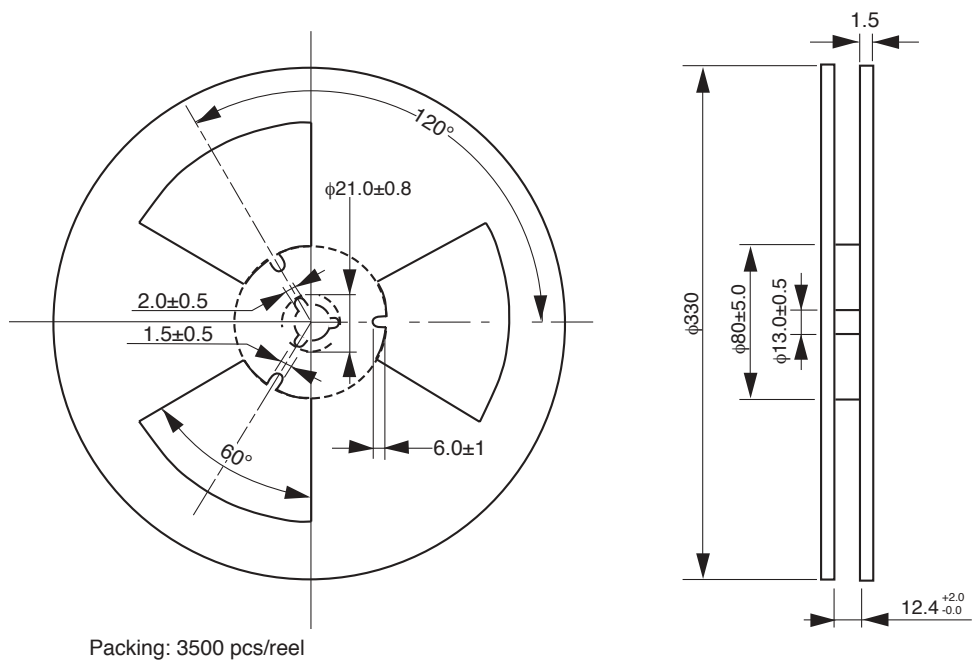
OUTLINE AND DIMENSIONS (TAPE)



TAPE DIRECTION



OUTLINE AND DIMENSIONS (REEL)

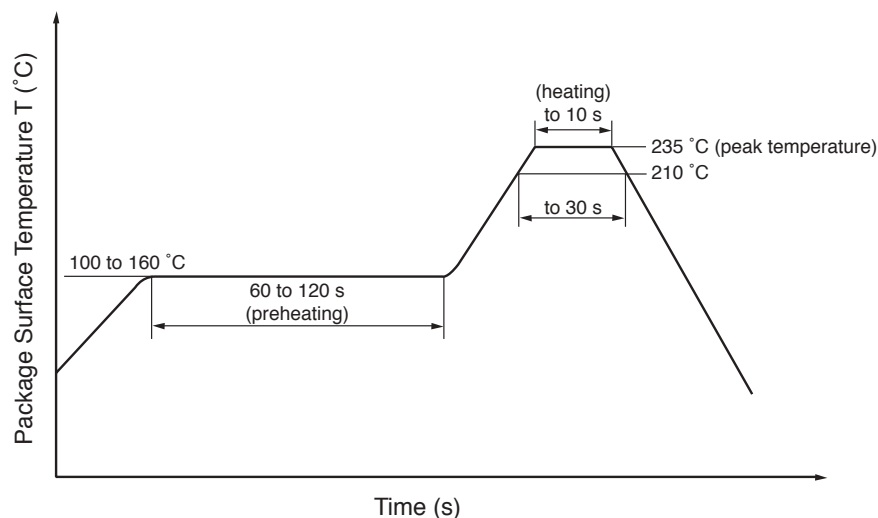


RECOMMENDED SOLDERING CONDITIONS

(1) Infrared reflow soldering

- Peak reflow temperature 235 °C or below (package surface temperature)
- Time of temperature higher than 210 °C 30 seconds or less
- Number of reflows Two
- 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 cleaning solvent.

Life Support Applications

These NEC products are not intended for use in life support devices, appliances, or systems where the malfunction of these products can reasonably be expected to result in personal injury. The customers of CEL using or selling these products for use in such applications do so at their own risk and agree to fully indemnify CEL for all damages resulting from such improper use or sale.