

## LOW VOLTAGE WIDE BAND VIDEO DRIVER

### FEATURES

- Operating Voltage 3.0 to 7.0V
- Operating Temperature -40 to 105°C
- Frequency Characteristics -3dB at 70MHz
- 6dB Amplifier, 75Ω Driver
- Output can be DC Coupling, AC Coupling
- Bipolar Technology
- Package Outline SOT-23-6-1

### GENERAL DESCRIPTION

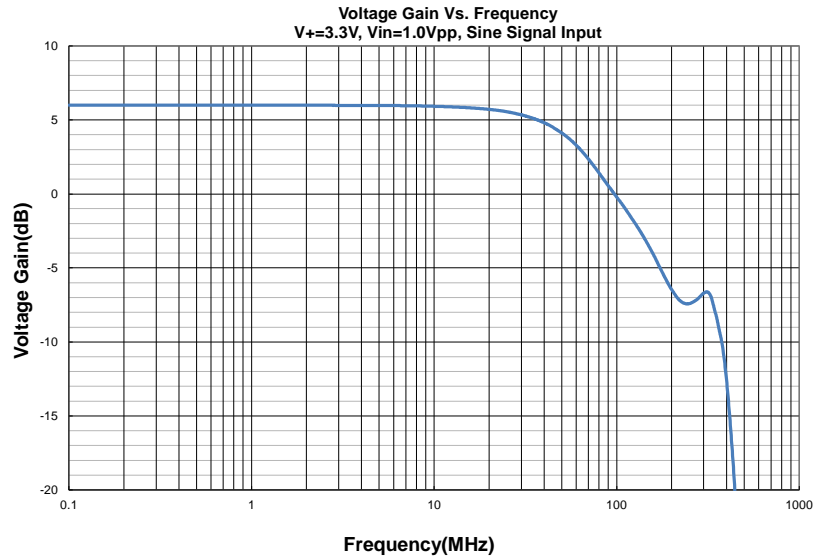
NJM41001-T is a Low Voltage Wide Band Video Driver. Internal 75ohm driver is easy to connect TV monitor directly. This can achieve high quality analog transmission.

Output can be AC-coupling and DC-coupling.

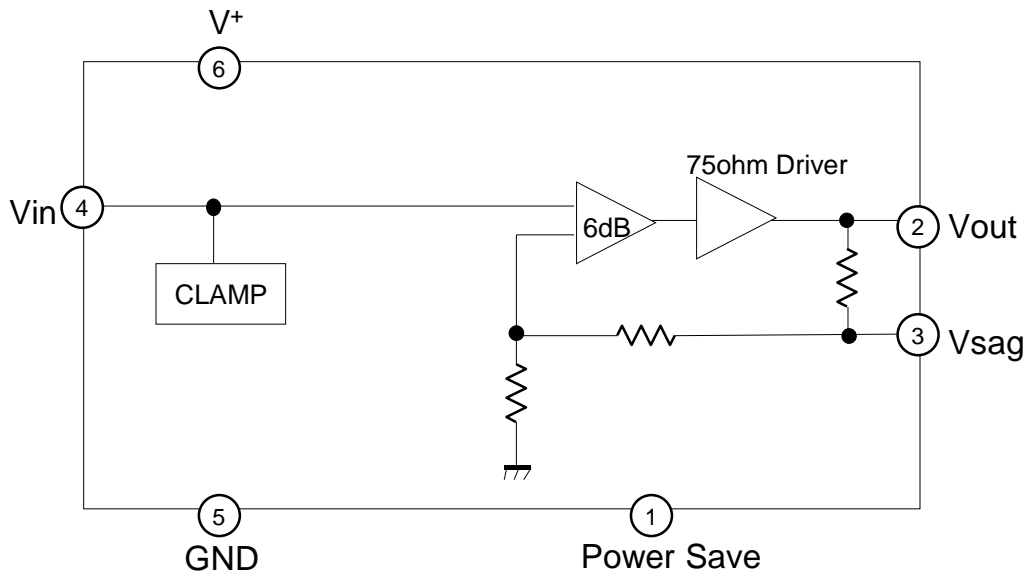
### APPLICATION

- Car Camera
  - CCTV
- \* T grade is not recommend for Powertrain, Vehicle Electrification and Autonomous driving related application.

### FREQUENCY CHARACTERISTICS



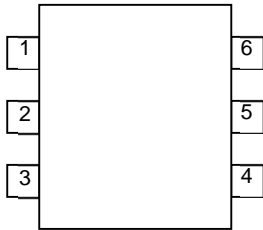
### EQUIVALENT CIRCUIT · BLOCK DIAGRAM



### Wide band video driver series

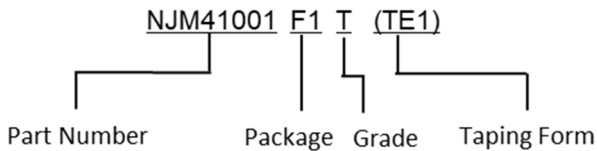
Frequency / Channel	Part No.
400MHz / 3ch	NJM41045
50MHz / 3ch	NJM2580
50MHz / 3ch	NJM2581

### PIN CONFIGURATION



PIN NO.	SYMBOL	DESCRIPTION
1	Power Save	Power Save Terminal
2	Vout	Video Signal Output Terminal
3	Vsag	SAG Correction Terminal
4	Vin	Video Signal Input Terminal
5	GND	GND Terminal
6	V+	Power Supply Terminal

### MARK INFORMATION



### ORDERING INFORMATION

PART NUMBER	PACKAGE OUTLINE	RoHS	HALOGEN-FREE	TERMINAL FINISH	MARKING	WEIGHT (mg)	MOQ(pcs)
NJM41001F1-T	SOT-23-6-1	YES	YES	Sn-Bi	AE1	15.0	3,000

## ■ABSOLUTE MAXIMUM RATINGS

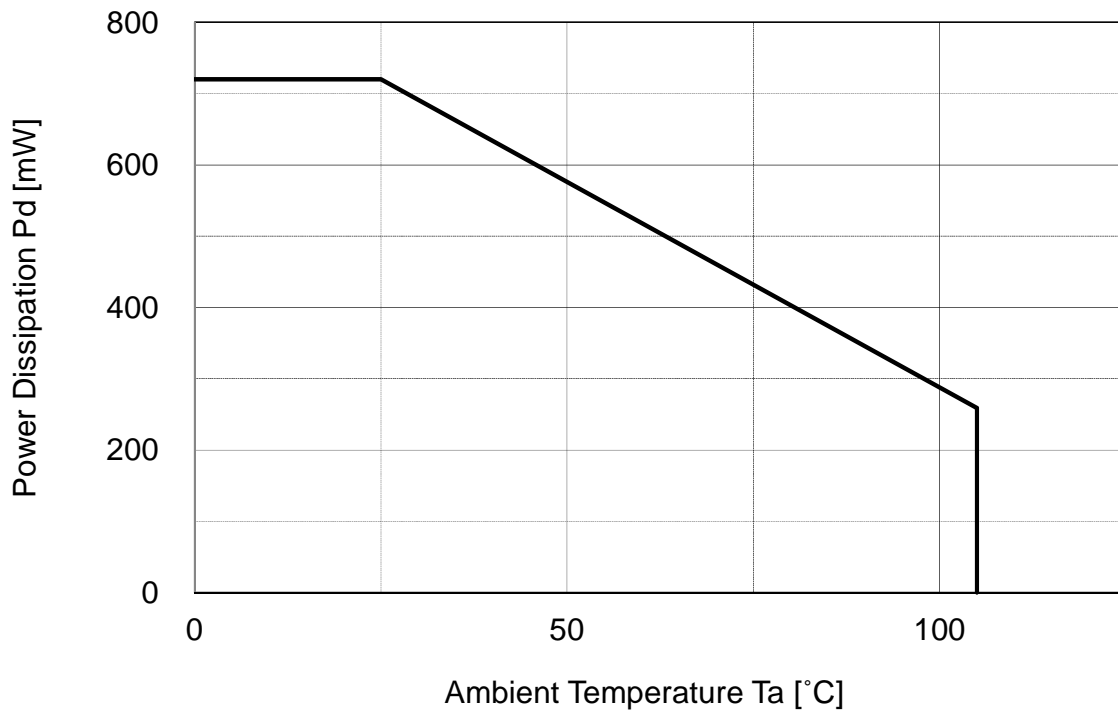
PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V+	8	V
Power Dissipation (Ta=25°C) <sup>(4)</sup>	P <sub>D</sub>	720 *1	mW
Operating Temperature Range	T <sub>opr</sub>	-40 to 105	°C
Storage Temperature Range	T <sub>stg</sub>	-40 to 150	°C

1) At on a board of EIA/JEDEC specification. (114.3 x 76.2 x 1.6mm 4 layers, FR-4)

## ■RECOMMENDED OPERATING CONDITIONS

PARAMETER	SYMBOL	RATINGS	UNIT
Supply Voltage	V+	3.0 to 7.0	V

## ■POWER DISSIPATION vs. AMBIENT TEMPERATURE



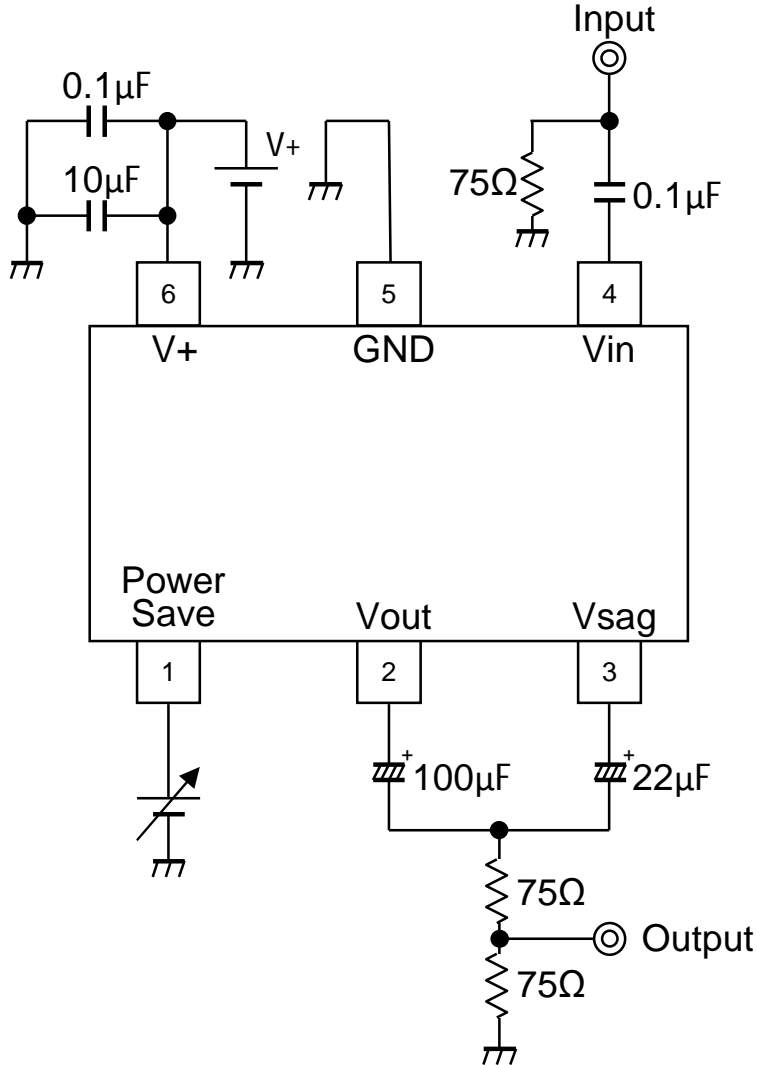
■ELECTRICAL CHARACTERISTICS (Ta=25°C, V+=3.3V, RL=150Ω, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Operating Current	I <sub>cc</sub>	No Signal	-	20.0	28.0	mA
		No Signal, Ta=-40 to 105°C	-	-	28.0	
Operating Current at Power Save Mode	I <sub>save</sub>	No Signal, power save mode	-	30	54	μA
		No Signal, power save mode Ta=-40 to 105°C	-	-	54	
Maximum Output Voltage Swing	V <sub>om</sub>	Vin=100kHz, Sin-Signal Input, THD=1%	2.2	2.4	-	V <sub>p-p</sub>
		Vin=100kHz, Input Sin-Signal, THD=1%, Ta=-40 to 105°C	2.2	-	-	
Voltage Gain	G <sub>v</sub>	Vin=100kHz, 1.0V <sub>p-p</sub> , Input Sine Signal	5.6	6.0	6.4	dB
		Vin=100kHz, 1.0V <sub>p-p</sub> , Input Sine Signal, Ta=-40 to 105°C	5.6	-	6.4	
Frequency Characteristic	G <sub>f70M</sub>	Vin=70MHz/100kHz, 1.0V <sub>p-p</sub> , Input Sine Signal	-	-3	-	dB
Differential Gain	DG	Vin=1.0V <sub>p-p</sub> , 10step Video Signal	-	0.5	-	%
Differential Phase	DP	Vin=1.0V <sub>p-p</sub> , 10step Video Signal	-	0.5	-	deg
Switch Change High Voltage	V <sub>thPH</sub>	Power save: OFF(Active)	1.8	-	V+	V
		Power save: OFF(Active) Ta=-40 to 105°C	1.8	-	V+	
Switch Change Low Voltage	V <sub>thPL</sub>	Power save: ON(Non-Active)	0	-	0.3	V
		Power save: ON(Non-Active) Ta=-40 to 105°C	0	-	0.3	

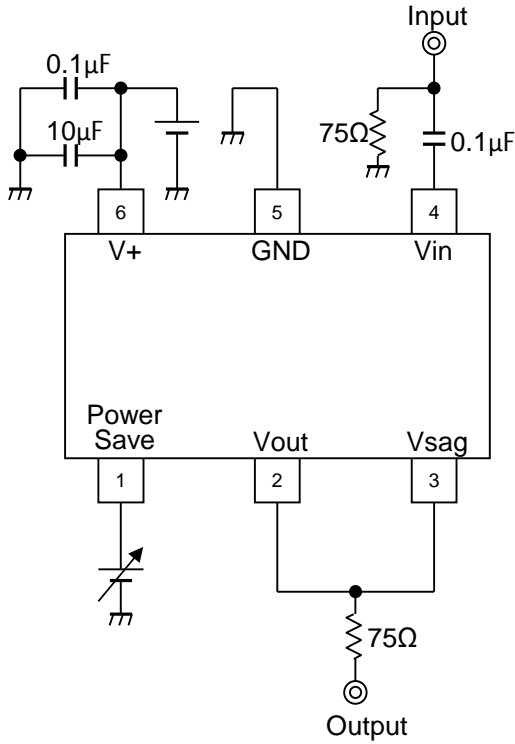
■CONTROL TERMINAL

端子	制御	備考
Power Save	H	Power Save: OFF (Active)
	L	Power Save: ON (Mute)
	OPEN	Power Save: ON (Mute)

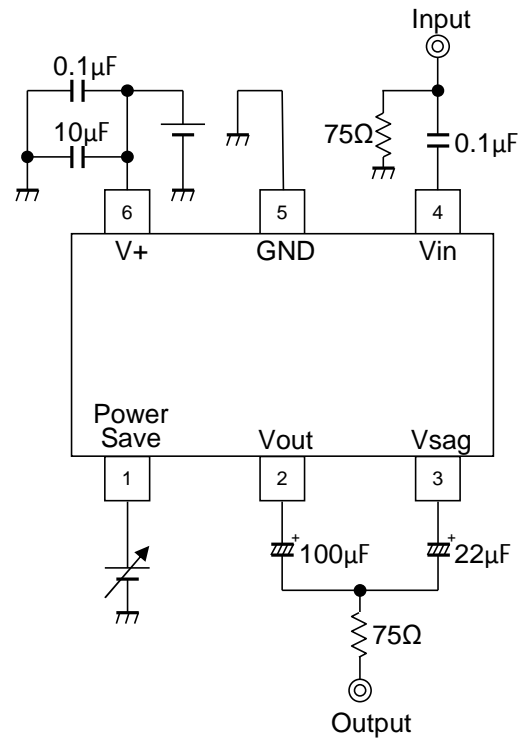
■TEST CIRCUIT



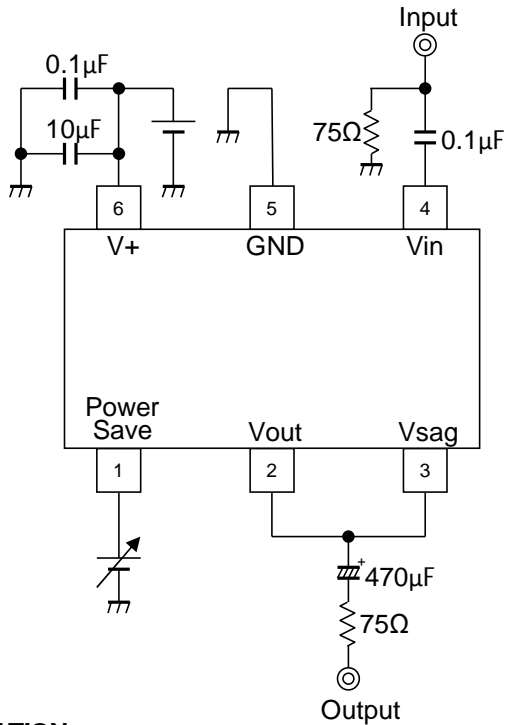
### ■APPLICATION CIRCUIT 1(Output DC Coupling)



### ■APPLICATION CIRCUIT 2(Output AC Coupling)



### ■APPLICATION CIRCUIT 2(Output AC Coupling, Not use SAG correction)



### ■APPLICATION

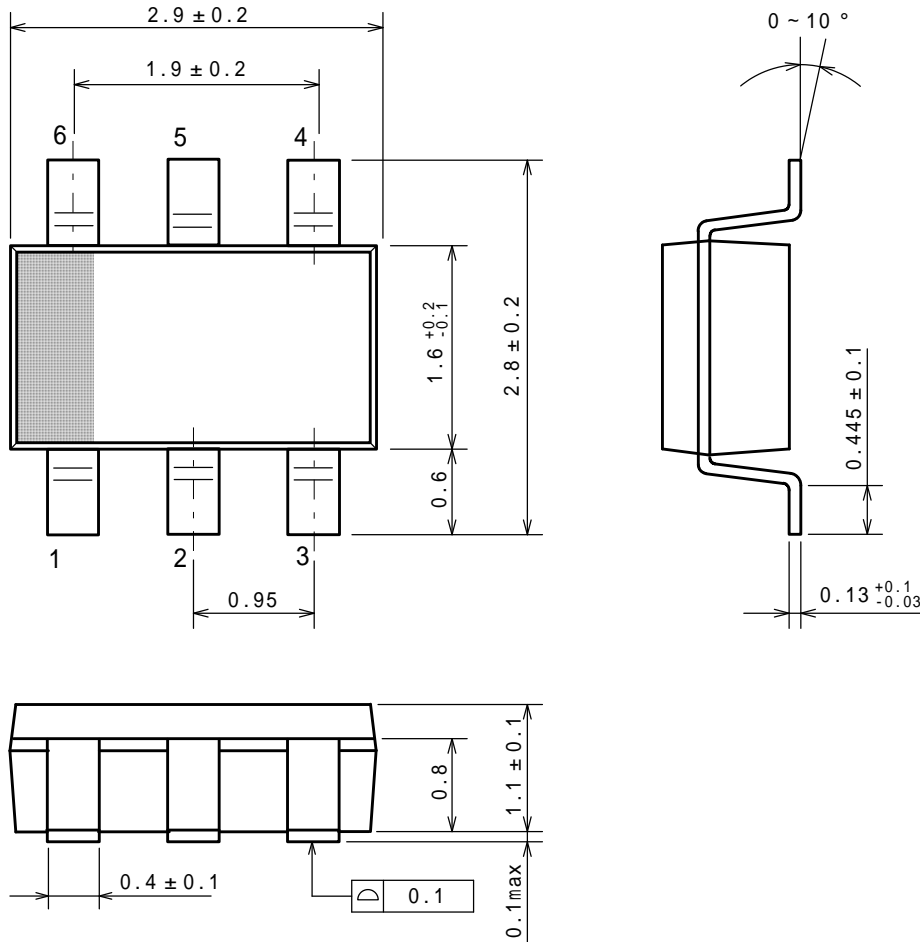
In the case of output DC coupling, 0.3V typ. DC is always output.

## ■ EQUIVALENT CIRCUIT

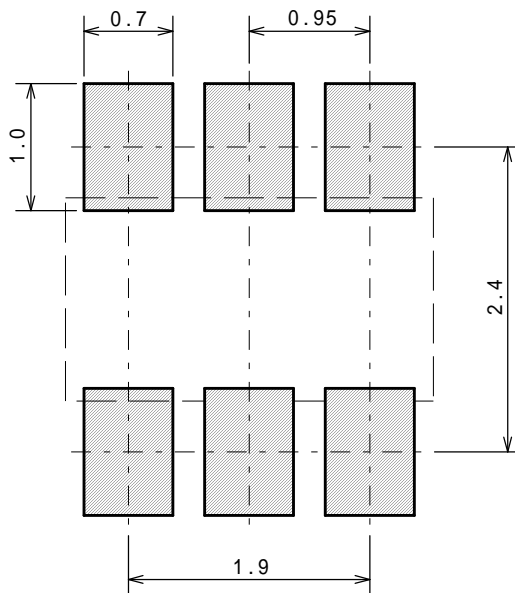
Pin.No.	Symbol	Function	Inside Equivalent Circuit	Voltage
1	Power Save	Power Save		-
2	Vout	Video Signal Output		0.3V
3	Vsag	SAG Correction		-
4	Vin	Video Signal Output		1.5V
5	GND	GND	-	-
6	V+	Supply Voltage	-	-

Unit: mm

## PACKAGE DIMENSIONS



## EXAMPLE OF SOLDER PADS DIMENSIONS

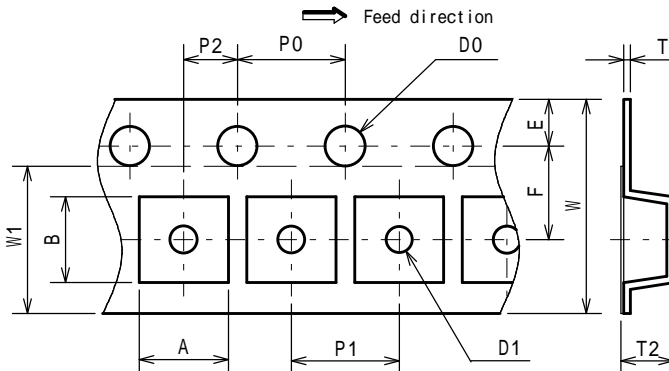




## PACKING SPEC

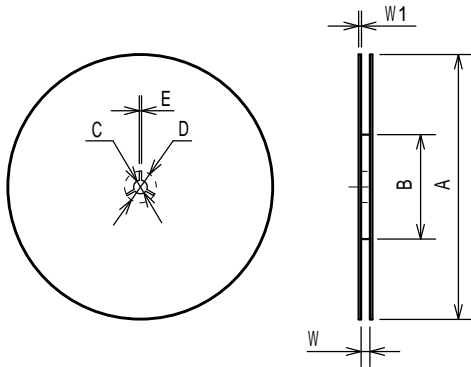
Unit: mm

### TAPING DIMENSIONS



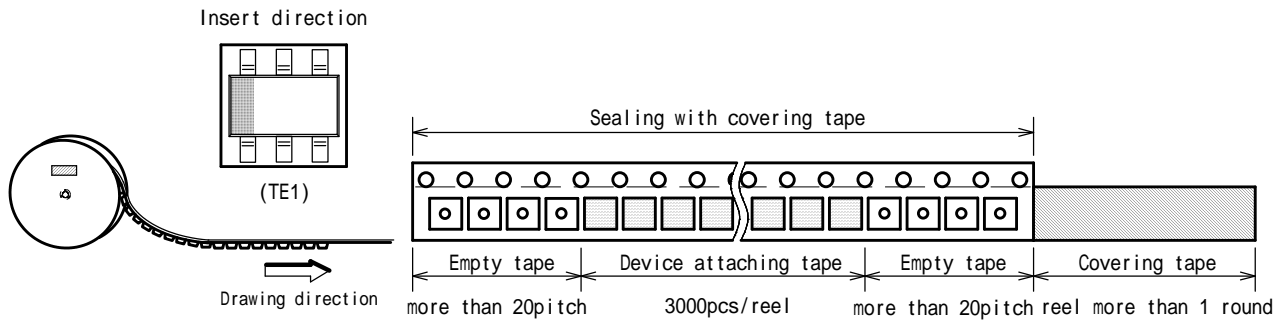
SYMBOL	DIMENSION	REMARKS
A	3.3 ± 0.1	BOTTOM DIMENSION
B	3.2 ± 0.1	BOTTOM DIMENSION
D0	1.55	
D1	1.05	
E	1.75 ± 0.1	
F	3.5 ± 0.05	
P0	4.0 ± 0.1	
P1	4.0 ± 0.1	
P2	2.0 ± 0.05	
T	0.25 ± 0.05	
T2	1.5	
W	8.0 ± 0.3	
W1	5.5	THICKNESS 0.1MAX

### REEL DIMENSIONS

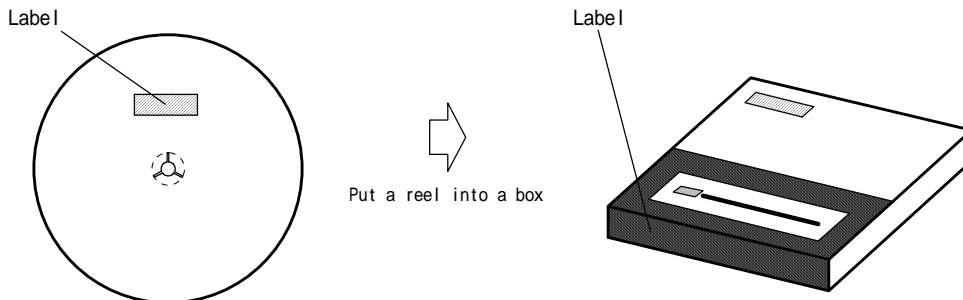


SYMBOL	DIMENSION
A	180 ± 1
B	60 ± 1
C	13 ± 0.2
D	21 ± 0.8
E	2 ± 0.5
W	9 ± 0.5
W1	1.2 ± 0.2

### TAPING STATE



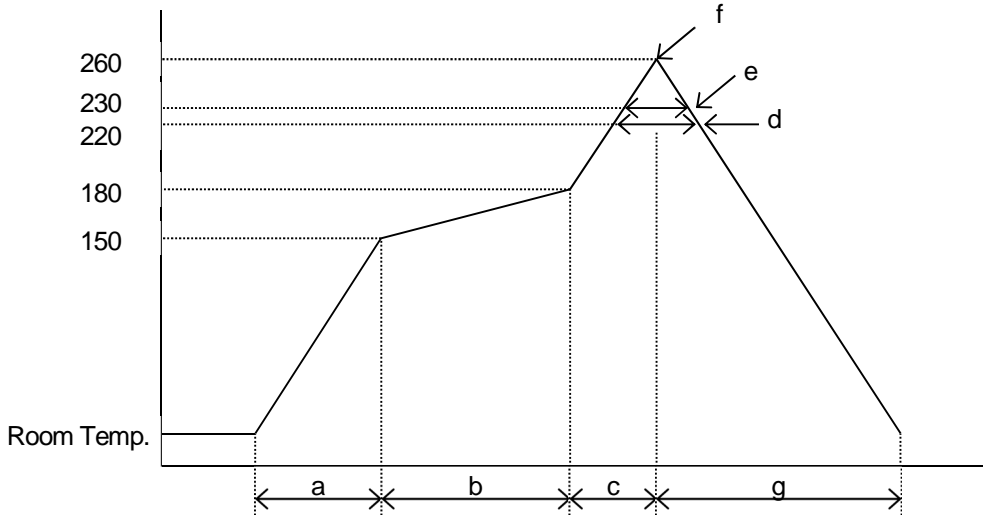
### PACKING STATE



## INFRARED REFLOW SOLDERING METHOD

EAE-D1006-000-02

\* Recommended reflow soldering procedure



- |                                 |                           |
|---------------------------------|---------------------------|
| a: Temperature ramping rate     | : 1 to 4 /s               |
| b: Pre-heating temperature time | : 150 to 180 : 60 to 120s |
| c: Temperature ramp rate        | : 1 to 4 /s               |
| d: 220 or higher time           | : Shorter than 60s        |
| e: 230 or higher time           | : Shorter than 40s        |
| f: Peak temperature             | : Lower than 260          |
| g: Temperature ramping rate     | : 1 to 6 /s               |

The temperature indicates at the surface of mold package.

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