



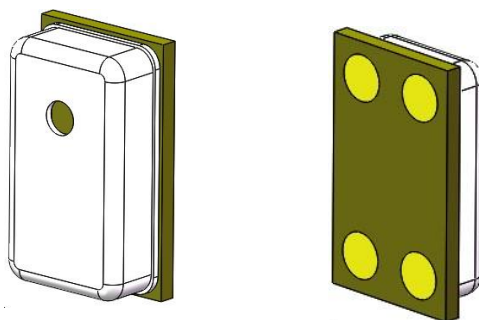
Specification of Analog MEMS Microphone

RoHS Compliance & Halogen Free

YG Model: SA3722T421-WT01

Customer:

Customer Model :



YG

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MEMS Microphone

1. Introduction

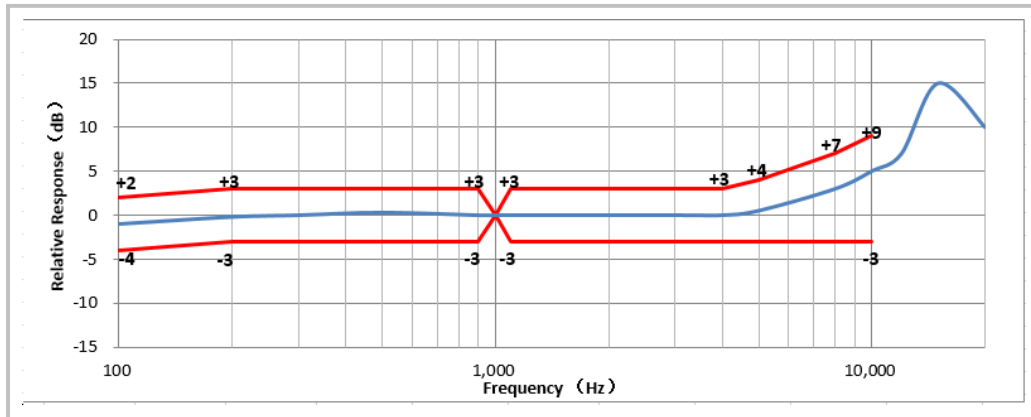
The SA3722T MEMS Microphones are integrated with specialized Pre-amplification ASIC to provide high sensitivity, high SNR output from a capacitive audio sensor. It's packaged for surface mounting and high temperature reflow assembly.

2. Electrical Characteristics

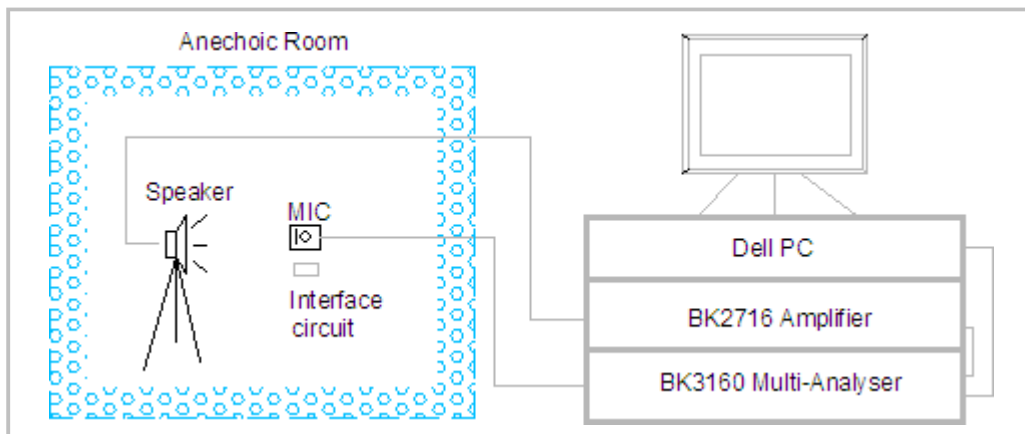
Test Condition: $V_{DD}=2.0V$, $23\pm 2^{\circ}C$, $55\pm 10\%R.H.$, unless otherwise specified.

Specification	Symbol	Test Conditions	Min.	Typ.	Max.	Unit
Directivity			Omni-directional			
Sensitivity Range	S	94dB SPL @1kHz,	-43	-42	-41	dB
Output Impedance	Z_{out}	94dB SPL @1kHz,			300	Ω
Current Consumption	I				200	μA
S/N Ratio	SNR	94dB SPL @1kHz, A-Weighted		59		dB(A)
Operating Voltage	V_{DD}		1.6		3.6	V
Total Harmonic Distortion	THD	94dB SPL @1kHz,			0.5	%
Sensitivity Drop	ΔS	94dB SPL @1kHz, $V_{DD}=3.6V--1.6V$			0.5	dB
Acoustic Overload Point	AOP	10% THD @1kHz		130		dB
Power Supply Rejection	PSR	100mVpp Square wave @217Hz, A-weighted		-100		dB

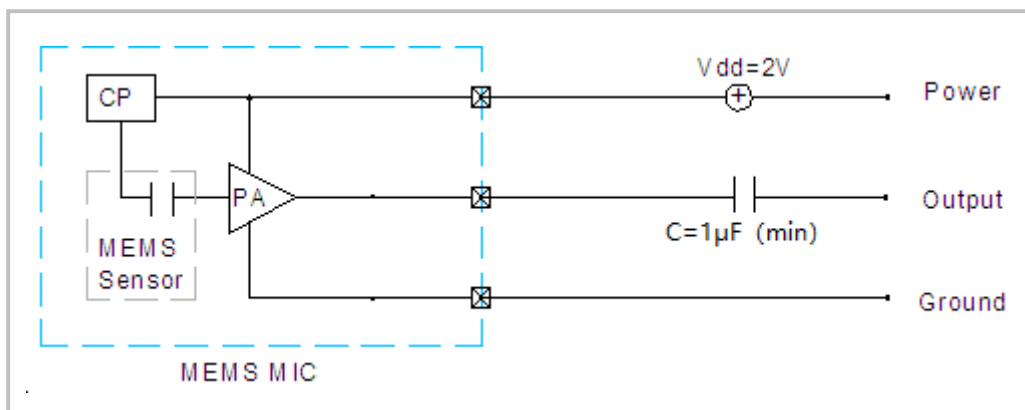
3. Frequency Response Curve



4. Test Setup (Sensitivity Test in Anechoic Room)



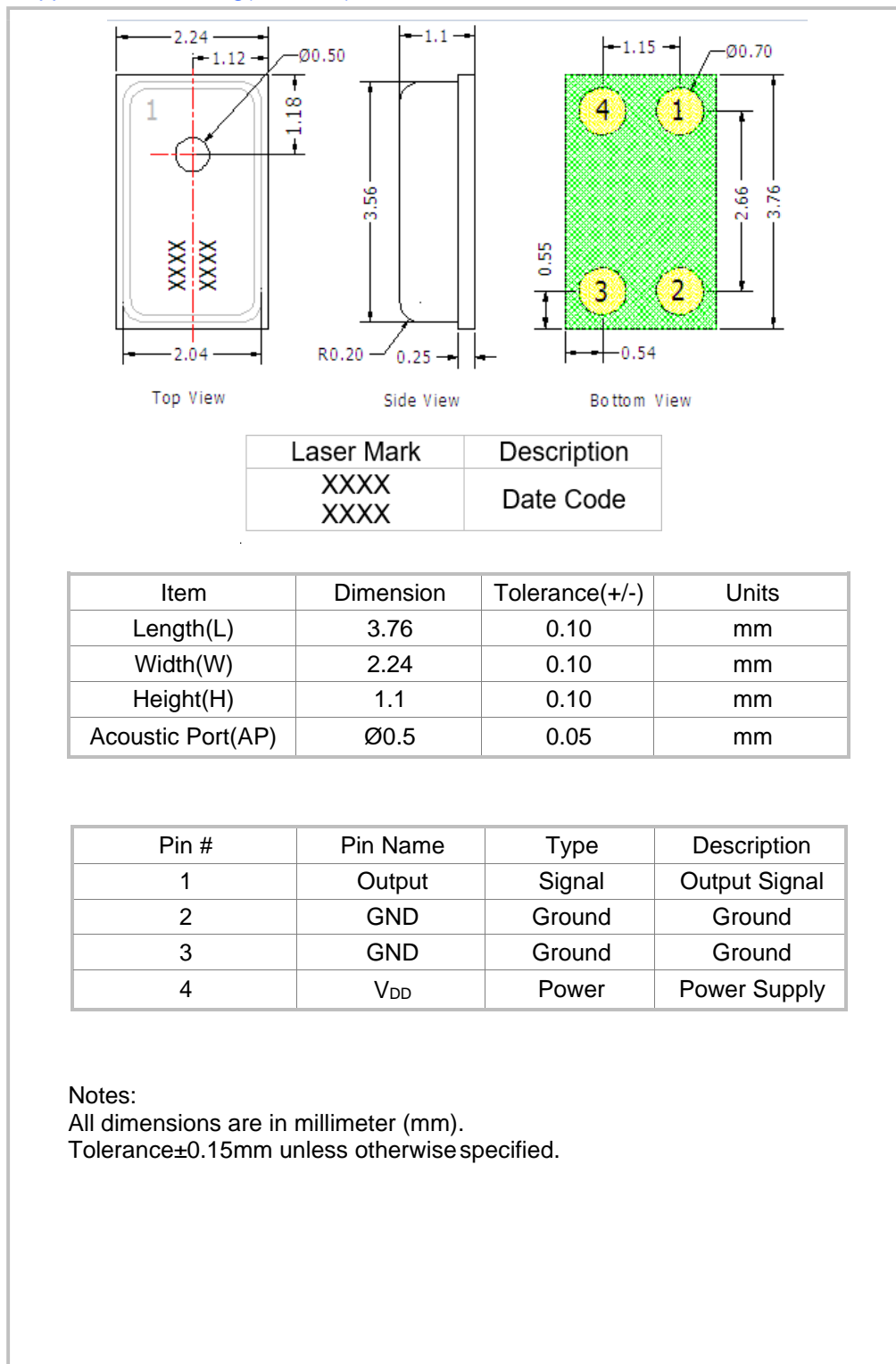
5. Measurement Circuit



6. Mechanical Characteristics

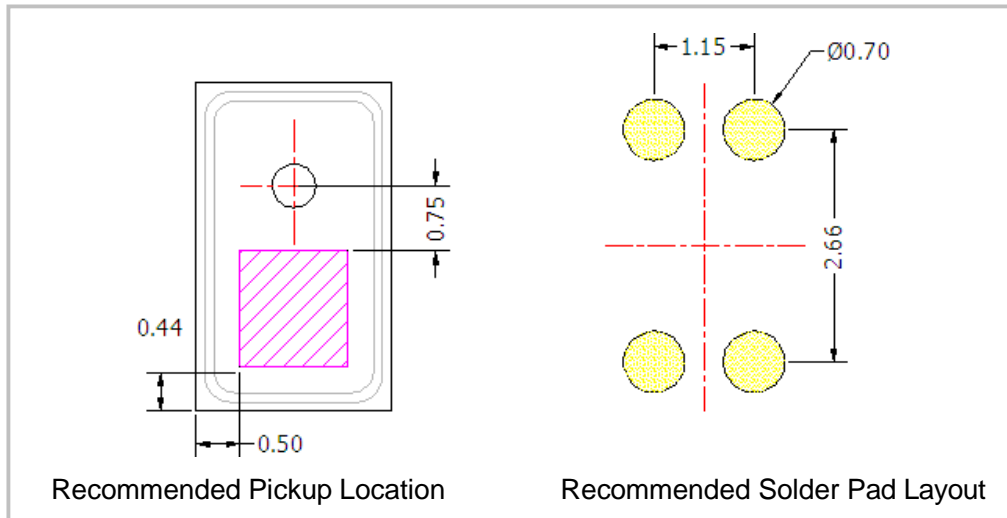
6.1 Weight : Less than 0.3g

6.2 Appearance Drawing(unit: mm)



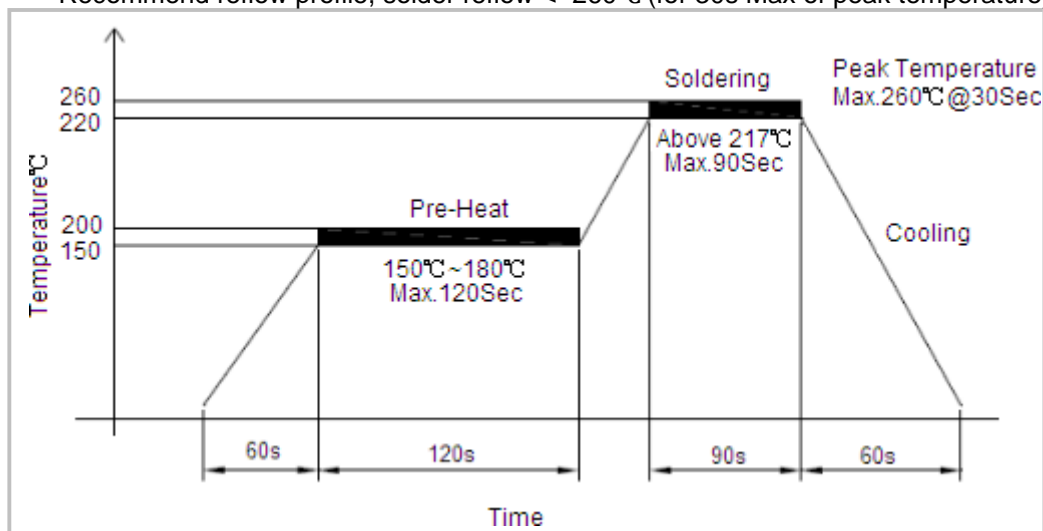
7. Application

7.1 Pickup Tool Pick Location & PCB Solder Pad Layout



7.2 Recommended Reflow Process Condition

Recommend reflow profile, solder reflow $\leq 260^{\circ}\text{C}$ (for 30s Max of peak temperature).



Important Notes

In order to minimize device damage:

1. Do not boards wash or clean after the reflow process.
2. Do not apply the airflow which pressure over 0.3MPa blow into the port hole within a distance of less than 5 cm.
3. Do not expose to ultrasonic processing or cleaning.
4. Do not pull a vacuum over port hole of the microphone

7.3 Storage Condition

7.3.1 Storage temperature range:-40~+70 $^{\circ}\text{C}$, and humidity is less than 75%.

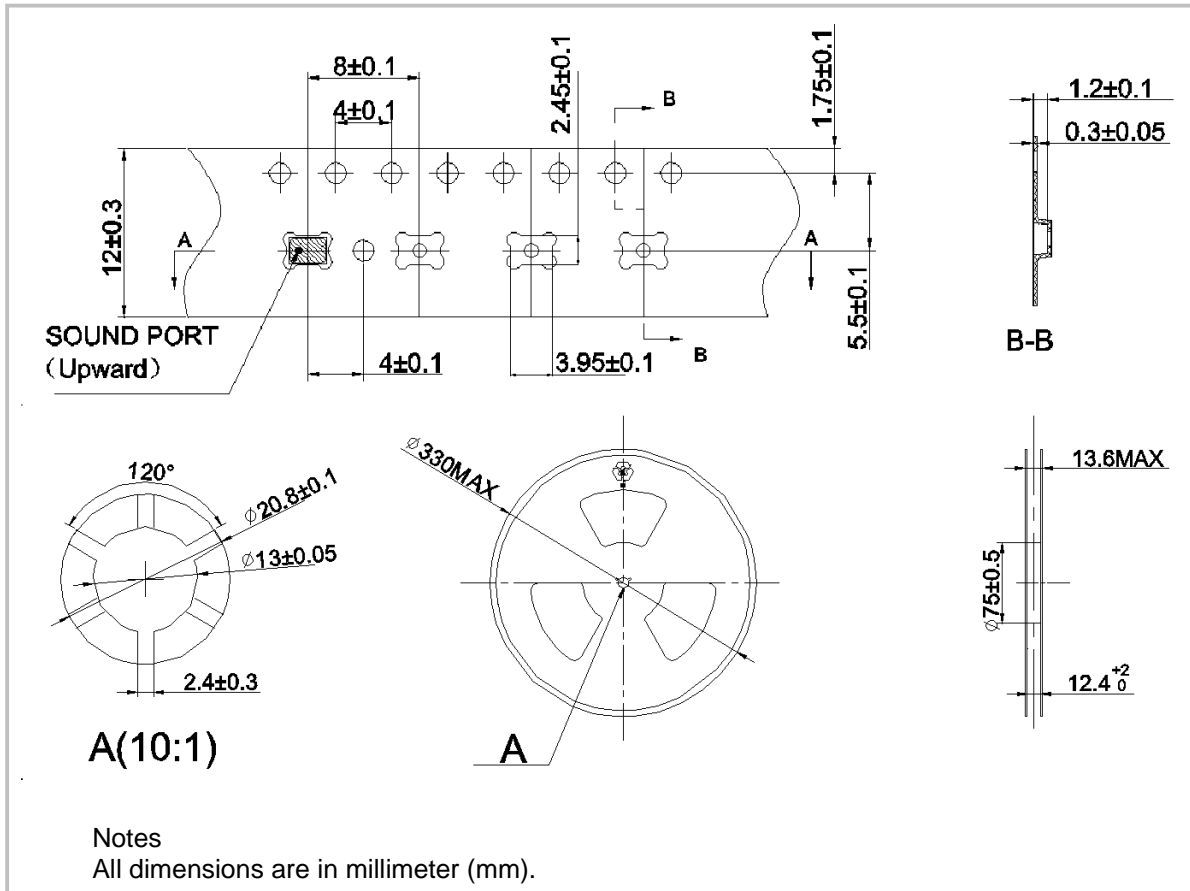
7.3.2 Operating temperature range:-40~+100 $^{\circ}\text{C}$.

7.3.3 MSL (moisture sensitivity Level) is Class 1.

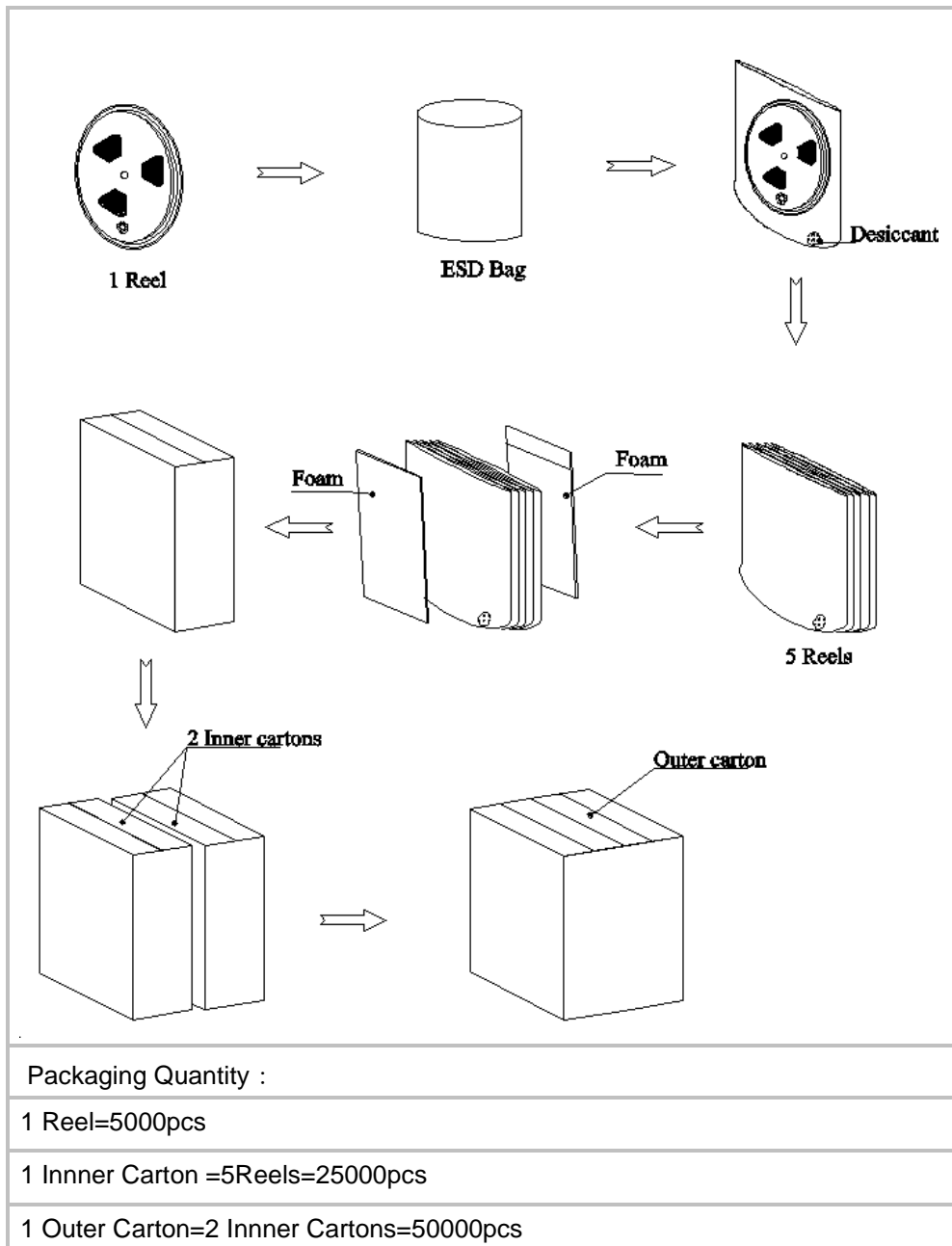


8. Packaging

8.1 Tape & Reel Specification



8.2 Packaging Information



9. Reliability Test

The samples should be placed in the room with 23+/-2°C, 55+/-10%R.H. for 2 hours at least



before final measurement, unless otherwise specified.

Item	Detail	Standard
Simulated Reflow (Without Solder)	Samples for qualification testing require 3 Times 260 ± 5 °C reflow solder profiles. 2 hours of setting time is required between each reflow profile test.	± 3 dB
Static Humidity	Precondition at $+25^{\circ}\text{C}$ for 1 hour. Then expose to $+85^{\circ}\text{C}$ with 85% relative humidity for 1000 hours.	± 3 dB
Temperature Shock	Each cycle shall consist of 30 minutes at -40°C , 30 minutes at $+125^{\circ}\text{C}$ with 5 minutes transition time. Test duration is for 30 cycles, starting from cold to hot temperature.	± 3 dB
ESD Sensitivity	Perform ESD sensitivity threshold measurements for each contact according to MIL-STD-883G, Method 3015.7 for Human Body Model. Identify the ESD threshold levels indicating passage of 3000V Human Body Model.	± 3 dB
Random Vibrations	Vibrate randomly along three perpendicular directions for 30 minutes in each direction, 4cycles from 20Hz~2000Hz with a peak acceleration 20g.	± 3 dB
Mechanical Shock	Subject samples to half sine shock pulses ($3000\text{g}\pm 15\%$ for 0.3ms) in each direction, totally 18 shocks.	± 3 dB
Operation Life	Subject samples to $+125^{\circ}\text{C}$ for 168 hours under full maximum rated voltage.	± 3 dB
Drop Test	The test was repeated in six directions for three times, Dropped from 1.5m height on to a steel surface, total 18 times and inspected for mechanical damage. Note: Sensitivity should vary within $\pm 3\text{dB}$ from initial sensitivity after test conditions are performed.	± 3 dB

