



High Speed · High Reliability Thermal Printheads  
3D Head STPH series



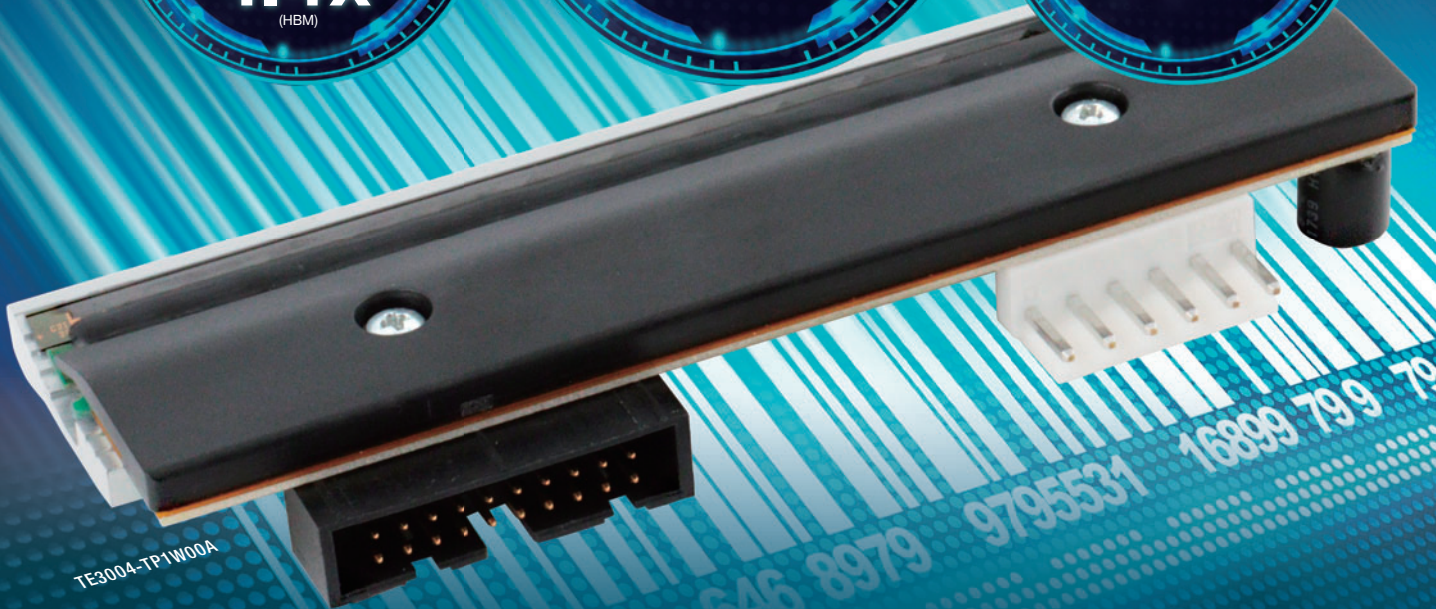
# Revolutionizing high-speed barcode printing

## Industry-leading\* printing speed: 500mm/s

Electrostatic  
Withstand  
Voltage  
(vs Conventional)  
**1.4x**  
(HBM)

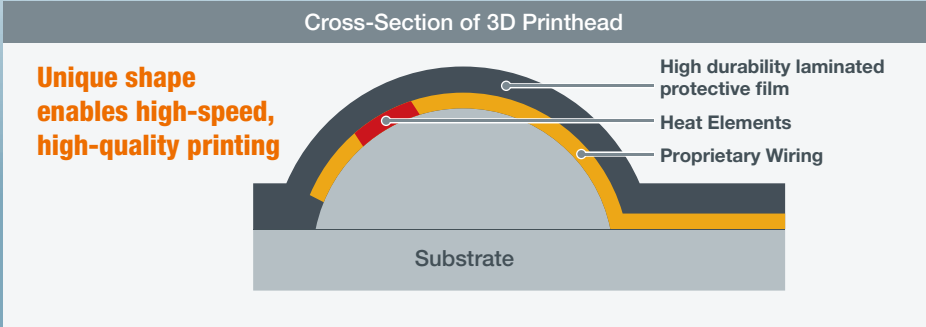
Industry's  
Fastest  
Print Speed  
500mm per second  
(Twice as fast as  
conventional products)

Wide Nip  
Characteristics



The 3D Head STPH series utilizes an innovative structure and materials for the heat element substrate

High-speed high-resolution printing is achieved using an ultra-high accuracy heat element configuration that leverages original 3D processing technology



\* ROHM August 2023 study

# 3D Head STPH series Features

## Industry-leading\* 500mm/s at 300dpi resolution doubles the conventional printing speed for increased productivity

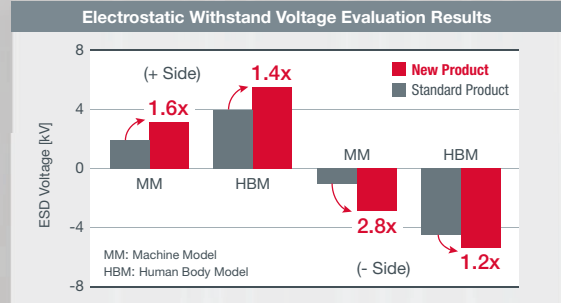
Achieves high 500mm/s print speed at 300dpi resolution (TE3004-TP1W00A) by combining high thermal conductivity materials with original 3D processes. High-speed printing significantly contributes to improved label printing efficiency.

Print Speed	200mm/s	500mm/s
<b>New Product</b>		
Standard Product		Not printable

\* ROHM August 2023 study

## Newly developed high durability multilayer protective film improves electrostatic breakdown voltage

The protective heat element film is comprised of a unique multilayer structure that takes advantage of ROHM's strength in film formation technology to significantly improve electrostatic breakdown voltage. At the same time, enhanced abrasion and corrosion resistance reduces the frequency of head replacement by end users.



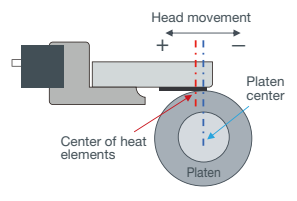
## Superior nip characteristics enable high quality printing over a wide range

The unique heat element structure based on 3D modeling technology ensures high-quality, high precision printing even when the mounting position fluctuates.

### Symbol Grade Evaluation Overview

(ISO/IEC 15416:2000)

#### Evaluation Diagram



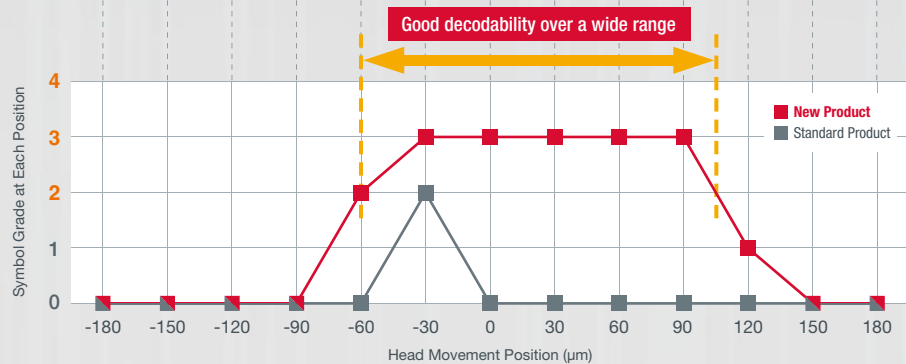
Print quality is measured by moving the head

#### Concept for Each Level of Symbol Grade

Grade	Decodability
4	Superior
3	Excellent
2	Good
1	Possible
0	Failed

### Symbol Grade Evaluation Results

	Position (μm)	-180	-150	-120	-90	-60	-30	0	30	60	90	120	150	180
<b>New Product STPH series</b>	Printing Results													
	Grade	0	0	0	0	2	3	3	3	3	3	1	0	0
Standard Product	Printing Results													
	Grade	0	0	0	0	0	2	0	0	0	-	-	-	-



## 3D Head Structure STPH series

Part No.	Resolution/Density [dpi]	Print Width [mm]	No. of Dots [dots]	Print Speed [mm/s]	Resistance Variation [Ω]	Print Supply Voltage [VH]	Circuit Supply Voltage [Vcc]	Size[mm]	
								Width	Height
<b>New</b> TE2004-QP1W00A	203	104.00	832	500	570	24	3.13 to 5.25	118	45
<b>New</b> TE3004-TP1W00A	300	105.71	1,248						

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