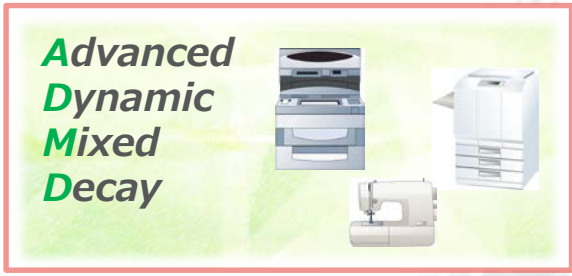


Motor Drivers



> **ADMD technology (Advanced Dynamic Mixed Decay)**

Conventional Mixed decay is a constant current control technology for stepping motors that automatically switches between slow decay mode and fast decay mode in accordance with specified timing. With Mixed decay, though the benefits of both decay modes can be gained, current following capability gets worse and step out occurs as motor rotation accelerates since Mixed decay technology is controlled according to the timing.

We developed ADMD technology to solve this problem. ADMD optimizes switching control between fast decay mode and slow decay mode automatically by monitoring the state of current decay in the IC.

With ADMD, current following capability is improved and higher-speed, efficient motor drive with low noise is realized.

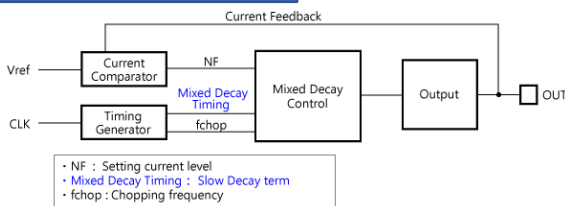
> **APPLICATIONS**

MFPs/mini printers/3D printers/banking terminals/ industrial sewing machines/amusement machines/ POS terminals/surveillance cameras

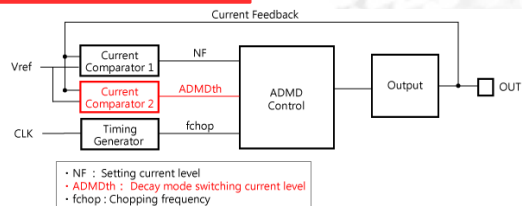
ADMD Block Diagram

※ It is the system image showing only the configurations necessary for explaining.

Conventional Mixed Decay



New technology ADMD



> **FEATURES**

- Anti-stall during high-speed rotation
- Improvement of waveform quality

> **ADVANTAGES**

- Increasing rotational speed: 30% UP compared to conventional method
- Enlarging high-speed rotation region: 1000Hz ⇒ 1300Hz

> **BENEFITS**

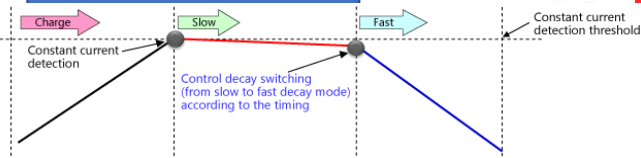
- Higher rotation speed
- Less noise and vibration

> **ADVANTAGE : Improvement of high-speed rotation**

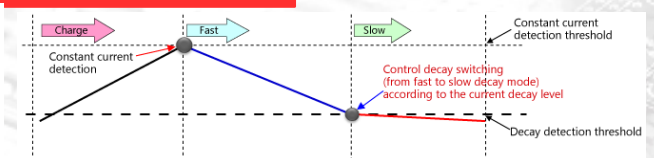
Conventional Mixed decay is a constant current control technology for stepping motors that automatically switches between slow decay mode and fast decay mode in accordance with specified timing. With Mixed decay, though the benefits of both decay modes can be gained, current following capability gets worse and step out occurs as motor rotation accelerates since Mixed decay technology is controlled according to the timing.

Our original ADMD optimizes switching control between fast decay mode and slow decay mode automatically by monitoring the state of current decay in the IC, supporting further high-speed rotation.

Conventional Mixed Decay



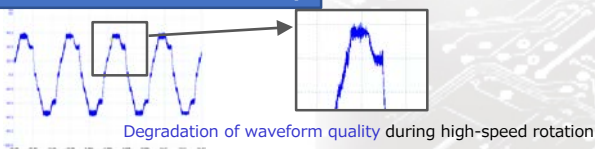
New technology ADMD



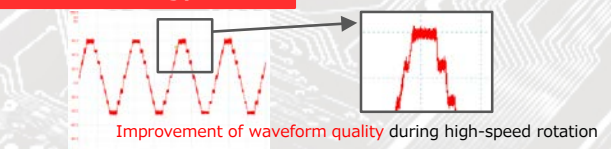
> **ADVANTAGE : Improvement of waveform quality during high-speed rotation**

In comparing each waveform in high-speed rotation, though the conventional Mixed decay has a step-out, ADMD controls the stepping motor normally. With ADMD, current following capability is improved and high-speed, efficient motor drive with low noise is realized.

Conventional Mixed Decay



New technology ADMD



> ACDS technology (Advanced Current Detection System)

In operating motors with driver ICs, large-size external resistors are used. Thus, necessary resistor for each output channel limits room for mounting space and wiring. Meanwhile, space restrictions for mounting boards are becoming strict to realize affordable solutions in terms of space and cost.

Our original ACDS technology (Advanced Current Detection System) can solve this problem. ACDS detects current from the voltage drop of the internal transistor, allowing reduction of external resistors for constant current detection, which have been conventionally required for every channel.



> APPLICATIONS

MFPs/mini printers/3D printers/banking terminals/
industrial sewing machines/amusement machines/
POS terminals/surveillance cameras

> FEATURES

Reduction of number of parts
Reduction of wiring
Improvement of constant current accuracy

> ADVANTAGES

Number of constant current detection resistors: 2pcs \Rightarrow 0pcs
Improvement of wiring layout flexibility
Operation is improved by reducing variations (trimming in IC)

> BENEFITS

Cost reduction
Board downsizing
Stabilization for operation

> ADVANTAGE : Reduction of constant current detection resistor

Conventionally, the constant current is detected from the voltage drop of the external resistor. ACDS detects current from the voltage drop of the internal transistor, allowing reduction of external resistors for constant current detection. With ACDS, the flexibility of wiring layout is improved, BOM cost can be reduced, and stable constant current control can be realized.



> PRODUCT LINEUP

Part number	ADMD	ACDS	Supply voltage (V)	Output current (A)	Driving method	Features	Package
TB67S101A	✓						HTSSOP48/WQFN48/SDIP24
TB67S102A	✓						
TB67S103A	✓	-	50	4			HTSSOP48/WQFN48
TB67S109A	✓						
TB67S141		✓				Thermal shutdown (TSD)	WQFN48/HZIP25/SDIP24
TB67S142		✓	45	3		Over current detection (ISD)	WQFN48
TB67S145	-	✓				Power ON reset (POR)	WQFN48/HSOP28/HZIP25
TB67S149		✓	80	1.5	PWM constant current drive		
TB67S179		✓					WQFN48
TB67S261	✓						
TB67S265	✓	-	50	2			WQFN48
TB67S269	✓						
TB67S508	✓	✓	40	3			VQFN36
TB67S249		✓		4.5		TSD, ISD, POR, and load open detection (OPD)	
TB67S279	-	✓	50	2			VQFN48
TB67S289		✓		3			

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