

# 3-Phase Hybrid Stepping Motor

1.2°

# KT35 series TRISYN

HIGH TORQUE, SILENT ROTATION

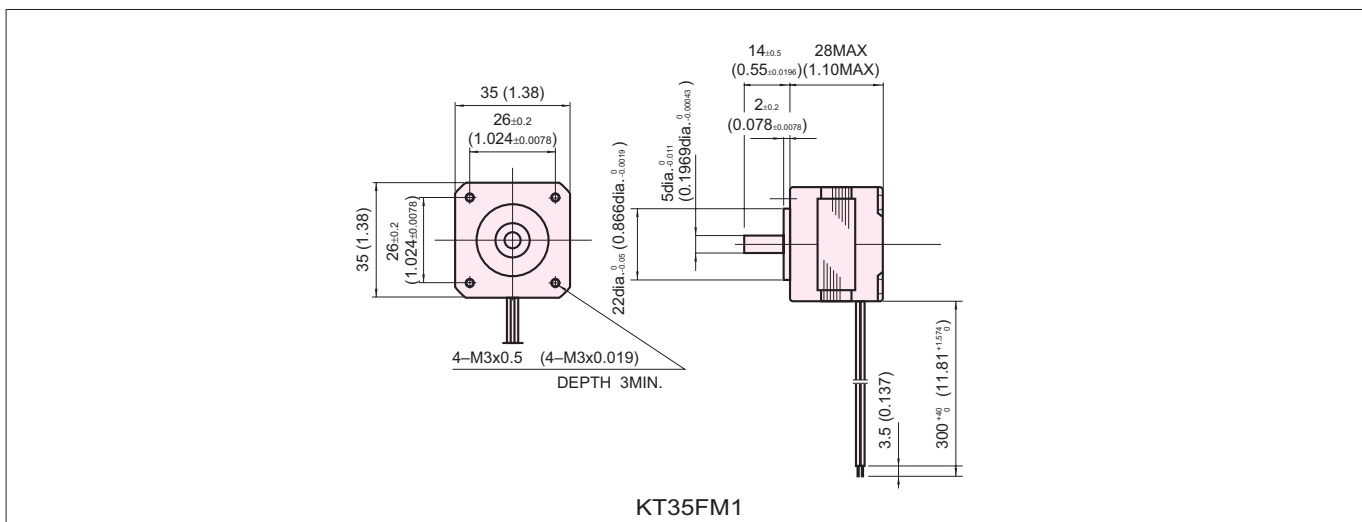
## STANDARD SPECIFICATIONS

MODEL	UNIT	KT35FM1
		-552
DRIVE METHOD	————	BI-POLAR
NUMBER OF PHASES	————	3
STEP ANGLE	deg./step	1.2
VOLTAGE	V	11.7
CURRENT	A/2-PHASE	0.3
WINDING RESISTANCE	Ω/2-PHASE	39
INDUCTANCE	mH/2-PHASE	26
HOLDING TORQUE	mN • m	5.9
	oz • in	8.3
DETENT TORQUE	mN • m	9.8
	oz • in	1.4
ROTOR INERTIA	g • cm <sup>2</sup>	8
	oz • in <sup>2</sup>	0.044
WEIGHTS	g	110
	lb	0.24
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)
INSULATION RESISTANCE	————	500VDC 100MΩmin.
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.
OPERATING TEMP. RANGE	°C	0 to 50
ALLOWABLE TEMP. RISE	deg.	70



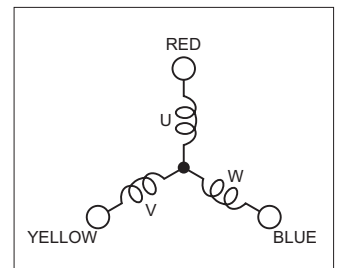
KT35FM1

## DIMENSIONS unit = mm (inch)



<p>TORQUE CHARACTERISTICS vs. PULSE RATE (FULL STEP) 24V 2 PHASE</p>	
<p>TORQUE CHARACTERISTICS vs. PULSE RATE (MICRO-STEP) 24V 1/8 DIVISIONS</p>	
<p>VIBRATION CHARACTERISTICS (MICRO-STEP DRIVEN)</p>	<p>DRIV = FTD3S3P11    EXIT = 1 / 8 [PHASE]  CURR = 0.35 [A]    VOLT = 24 [V]</p>

■ Connection Diagram



# 3-Phase Hybrid Stepping Motor

0.6°

# KT42 series TRISYN

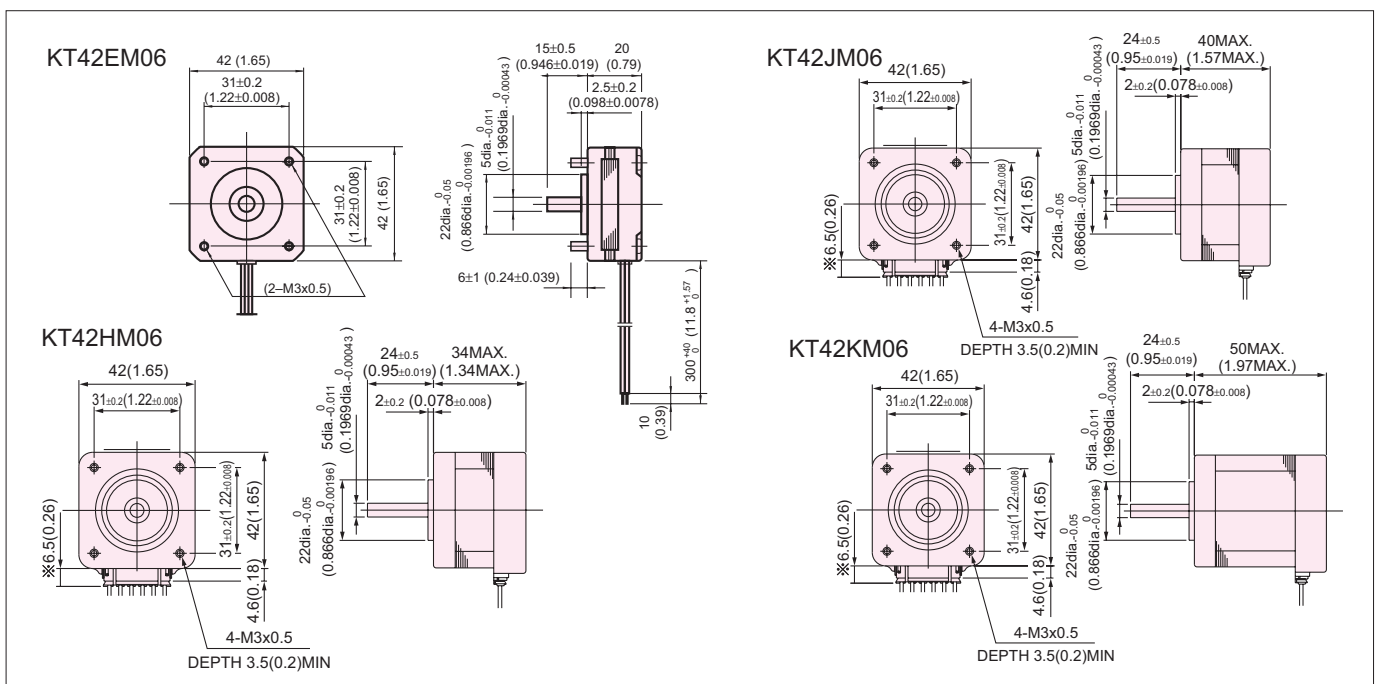
HIGH TORQUE, SILENT ROTATION

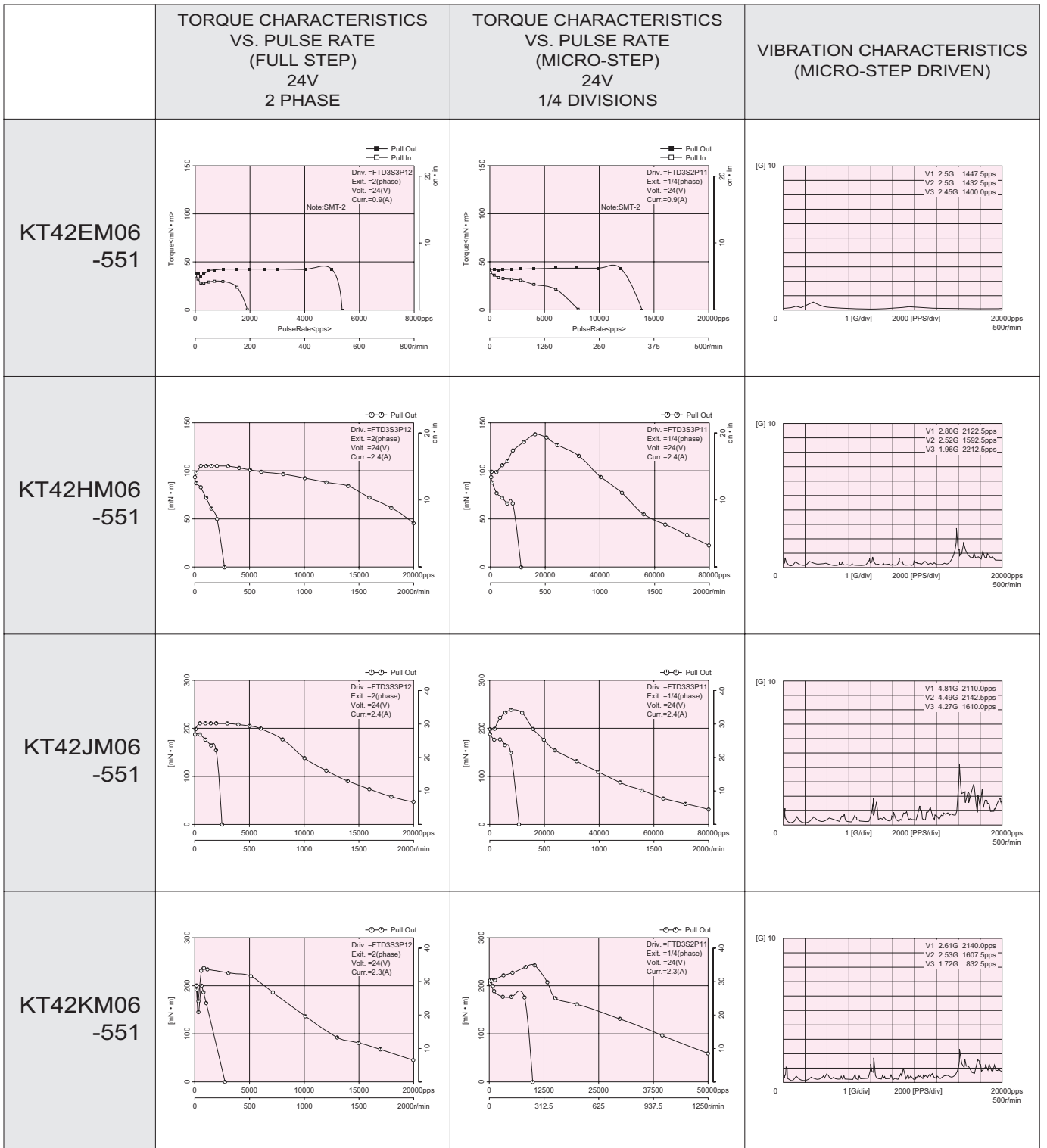
## STANDARD SPECIFICATIONS

MODEL	UNIT	KT42EM06	KT42HM06	KT42JM06	KT42KM06
		-551	-551	-551	-551
DRIVE METHOD	————	BI-POLAR			
NUMBER OF PHASES	————	3			
STEP ANGLE	deg./step	0.6			
VOLTAGE	V	5.3	2.88	3.12	4.6
CURRENT	A/2-PHASE	0.9	2.4	2.4	2.3
WINDING RESISTANCE	Ω/2-PHASE	5.9	1.2	1.3	2.0
INDUCTANCE	mH/2-PHASE	3.1	0.8	1.3	1.4
HOLDING TORQUE	mN • m	45	90	180	200
	oz • in	6.4	12.7	25.5	28.3
DETENT TORQUE	mN • m	10	6	8	9
	oz • in	1.4	0.8	1.1	1.3
ROTOR INERTIA	g • cm <sup>2</sup>	20	42	60	85
	oz • in <sup>2</sup>	0.11	0.23	0.33	0.46
WEIGHTS	g	140	210	310	360
	lb	0.31	0.46	0.68	0.79
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)			
INSULATION RESISTANCE	————	500VDC 100MΩmin.			
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.			
OPERATING TEMP. RANGE	°C	-10 to 50			
ALLOWABLE TEMP. RISE	deg.	70			

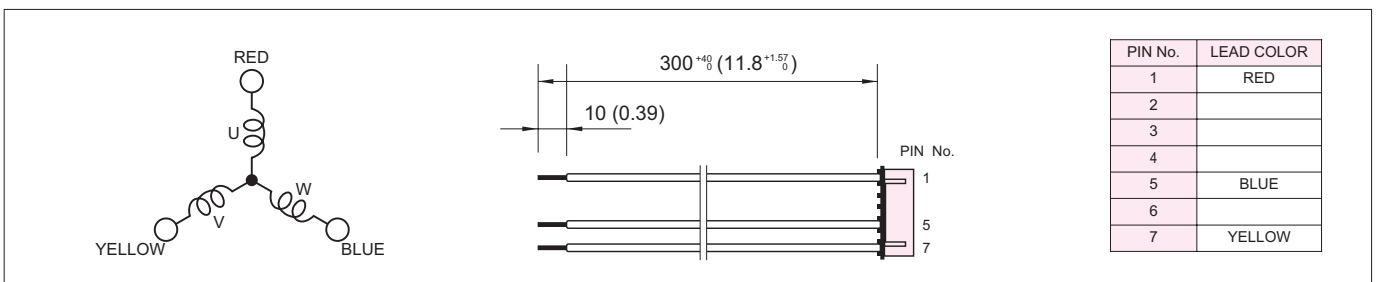


## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM06-551)



# 3-Phase Hybrid Stepping Motor

1.2°

# KT42 series TRISYN

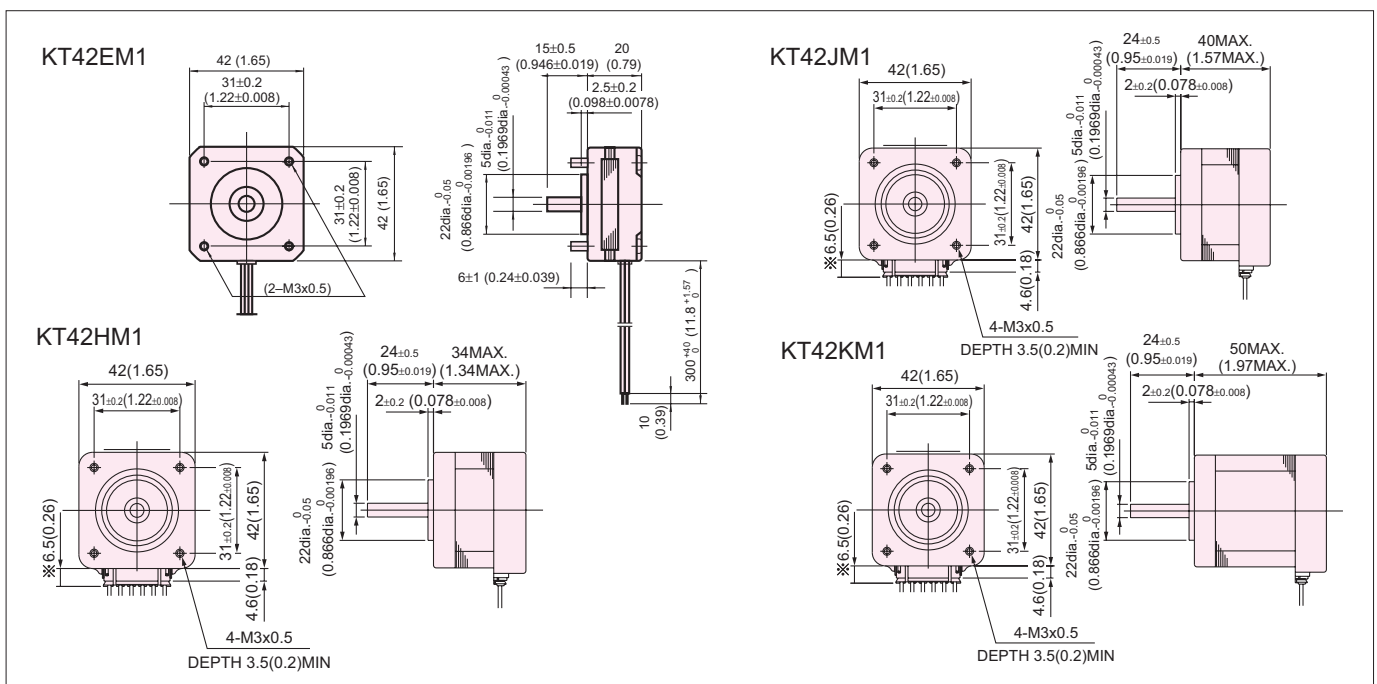
HIGH TORQUE, SILENT ROTATION

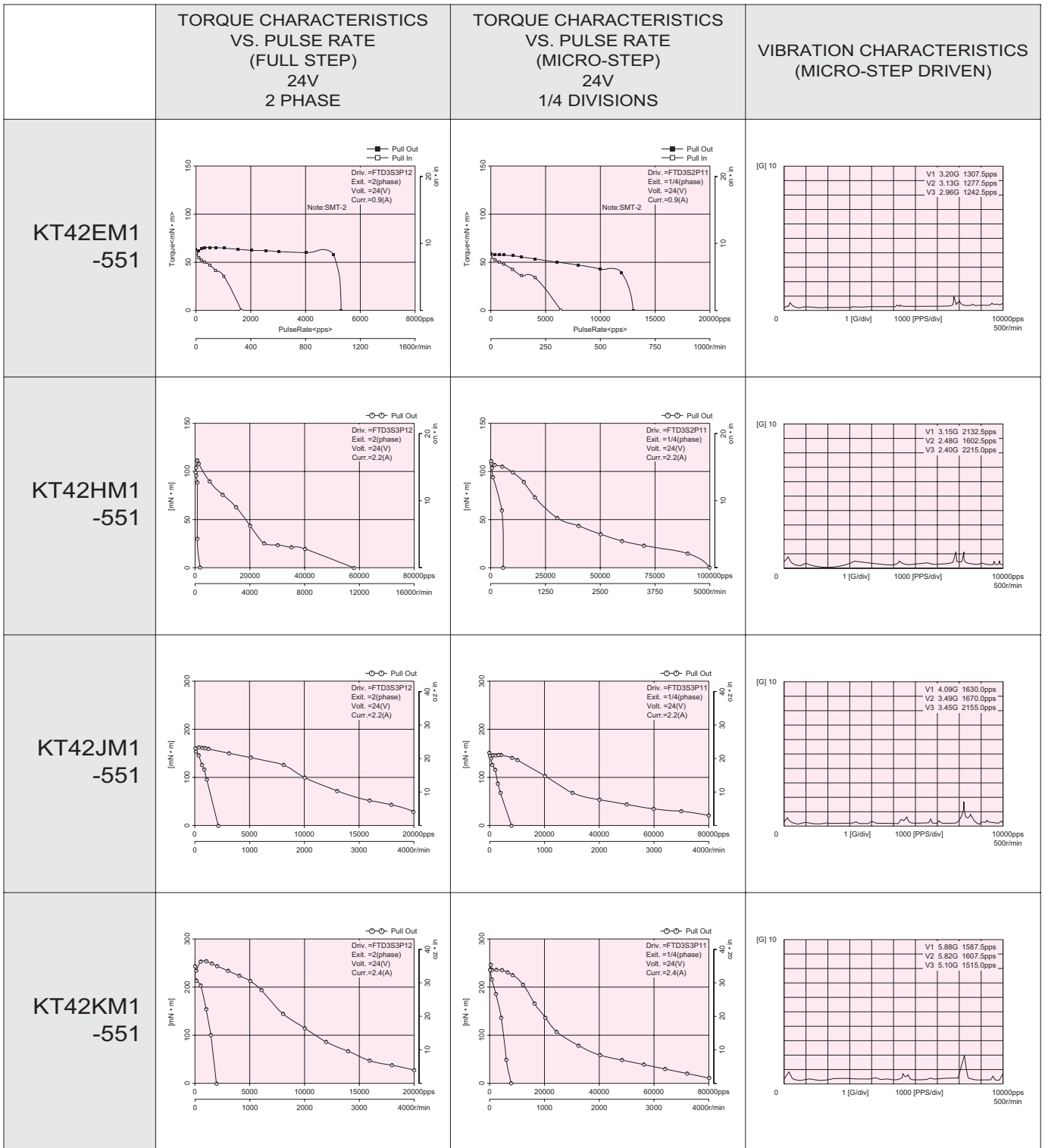
## STANDARD SPECIFICATIONS

MODEL	UNIT	KT42EM1	KT42HM1	KT42JM1	KT42KM1
		-551	-551	-551	-551
DRIVE METHOD	————	BI-POLAR			
NUMBER OF PHASES	————	3			
STEP ANGLE	deg./step	1.2			
VOLTAGE	V	5.3	2.64	2.88	3.6
CURRENT	A/2-PHASE	0.9	2.4	2.4	2.4
WINDING RESISTANCE	Ω/2-PHASE	5.9	1.1	1.2	1.5
INDUCTANCE	mH/2-PHASE	2.6	0.5	0.8	1.0
HOLDING TORQUE	mN • m	70	140	210	280
	oz • in	9.9	19.8	29.7	39.6
DETENT TORQUE	mN • m	10	10	12	16
	oz • in	1.4	1.4	1.7	2.3
ROTOR INERTIA	g • cm <sup>2</sup>	20	42	60	85
	oz • in <sup>2</sup>	0.11	0.23	0.33	0.46
WEIGHTS	g	140	210	310	360
	lb	0.31	0.46	0.68	0.79
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)			
INSULATION RESISTANCE	————	500VDC 100MΩmin.			
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ALLOWABLE TEMP. RISE	deg.	70			

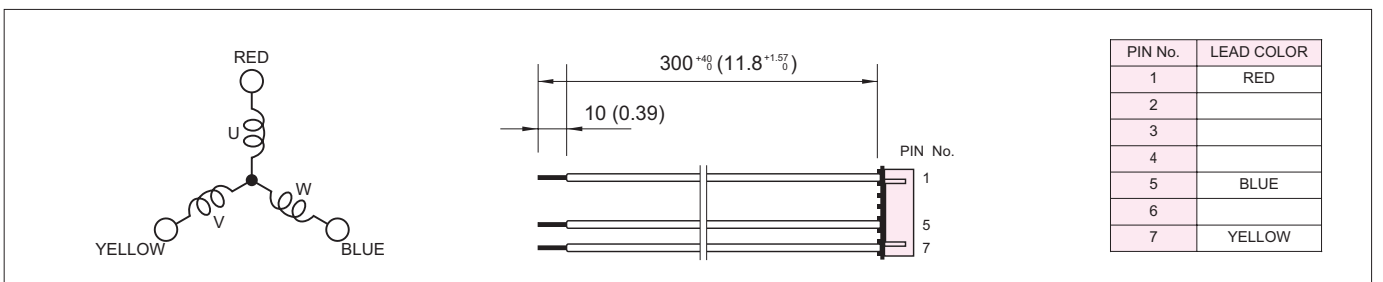


## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM1-551)



# 3-Phase Hybrid Stepping Motor

**3.75°**

# KT42 series TRISYN

**HIGH TORQUE, SILENT ROTATION**

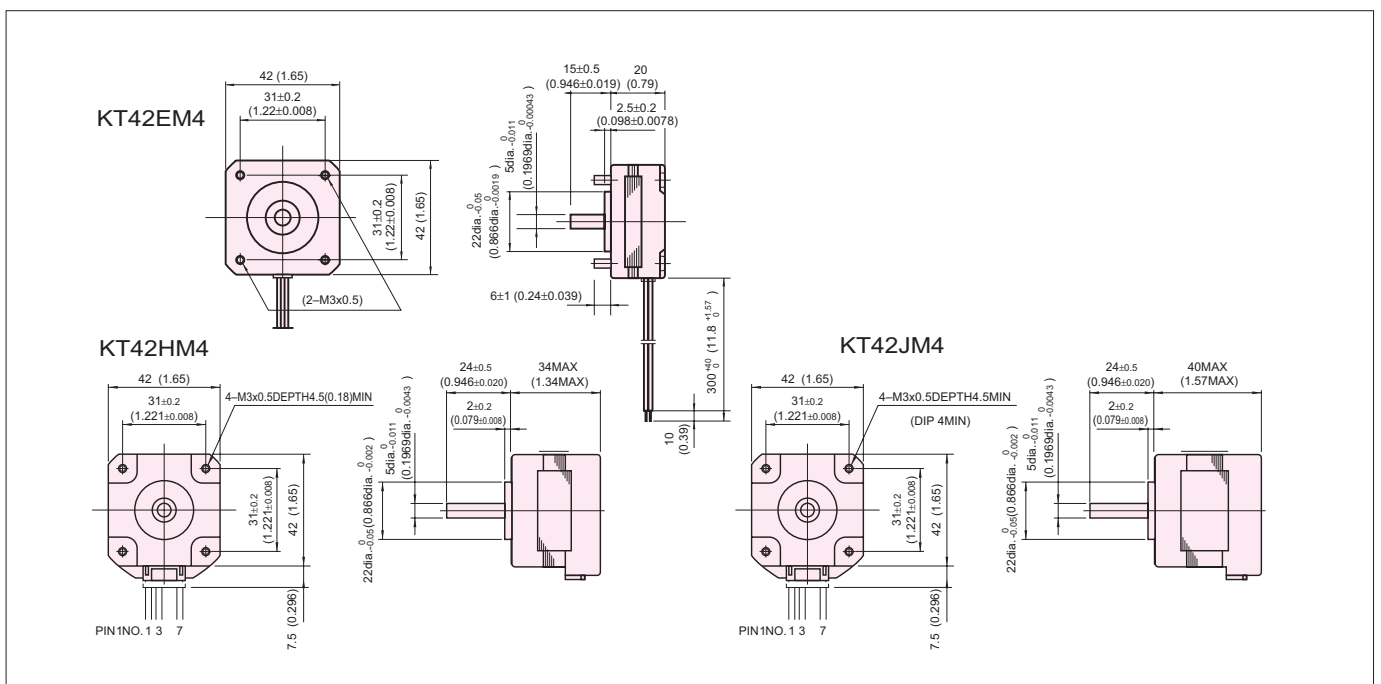
## STANDARD SPECIFICATIONS

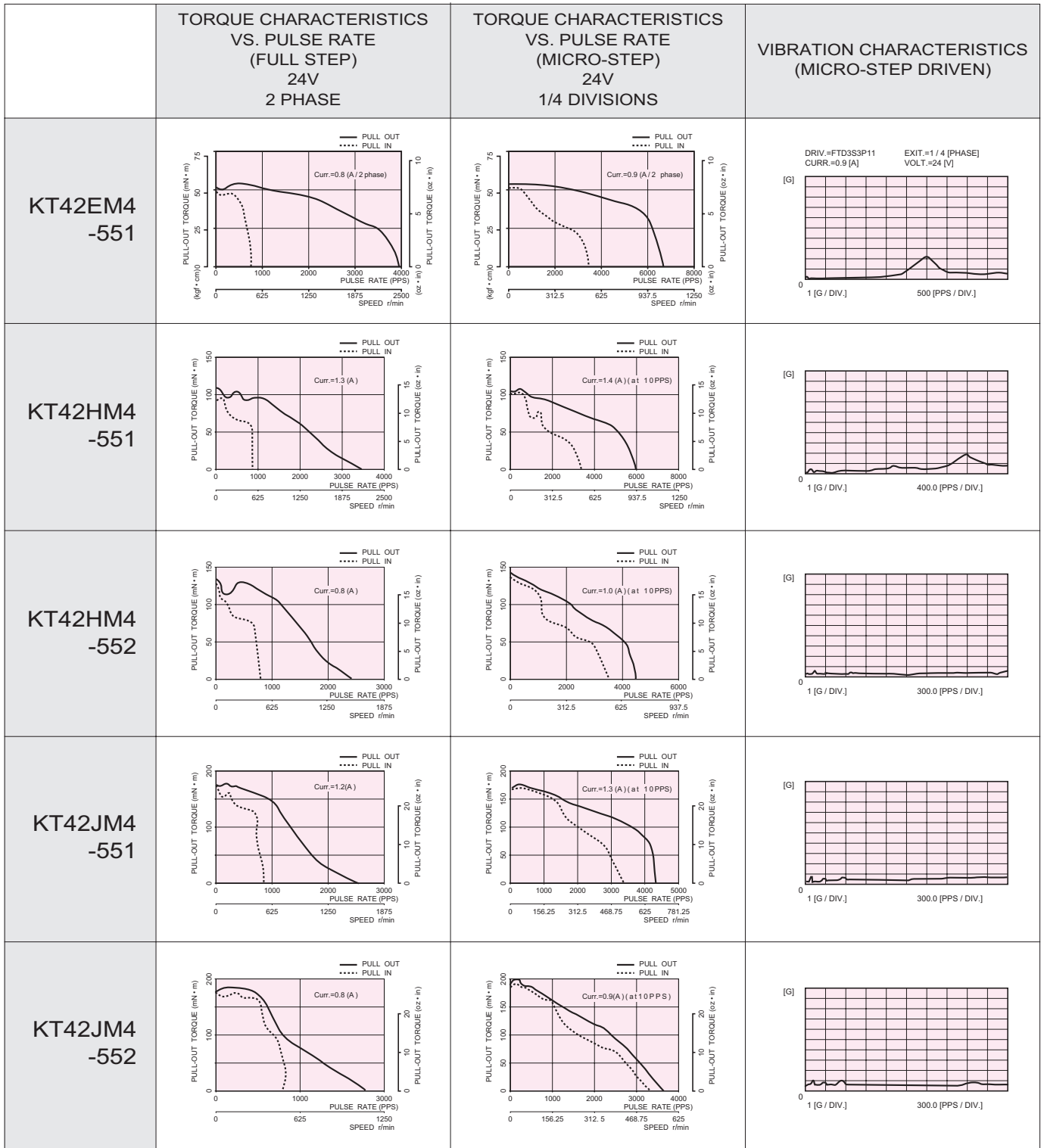
MODEL	UNIT	KT42EM4		KT42HM4		KT42JM4	
		-551	-551	-552	-551	-552	
DRIVE METHOD	————	BI-POLAR					
NUMBER OF PHASES	————	3					
STEP ANGLE	deg./step	3.75					
VOLTAGE	V	5.28	4.42	7.04	5.16	8.8	
CURRENT	A/2-PHASE	0.8	1.3	0.8	1.2	0.8	
WINDING RESISTANCE	$\Omega$ /2-PHASE	6.6	3.4	8.8	4.3	11.0	
INDUCTANCE	mH/2-PHASE	5.7	4.7	12.3	8.7	22.0	
HOLDING TORQUE	mN · m	70	130	130	180	180	
	oz · in	9.7	18	18	25	25	
DETENT TORQUE	mN · m	8.8	14.7	14.7	19.6	19.6	
	oz · in	1.3	2.1	2.1	2.8	2.8	
ROTOR INERTIA	g · cm <sup>2</sup>	20	38	38	60	60	
	oz · in <sup>2</sup>	0.11	0.21	0.21	0.33	0.33	
WEIGHTS	g	140	210	210	240	240	
	lb	0.31	0.46	0.46	0.53	0.53	
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)					
INSULATION RESISTANCE	————	500VDC 100M $\Omega$ min.					
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.					
OPERATING TEMP. RANGE	°C	-10 to 50					
ALLOWABLE TEMP. RISE	deg.	70					



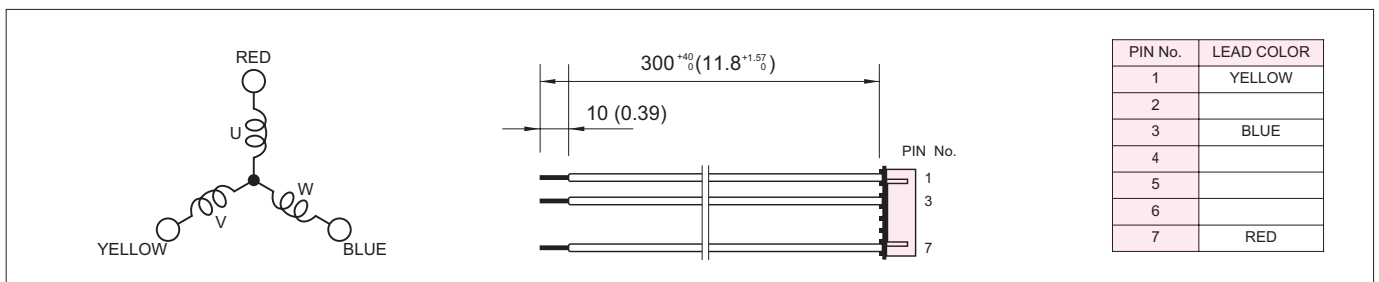
KT42EM4

## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM4-551)





# 3-Phase Hybrid Stepping Motor

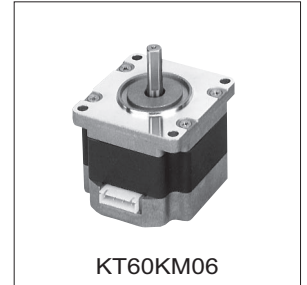
**0.6°**

# KT60 series TRISYN

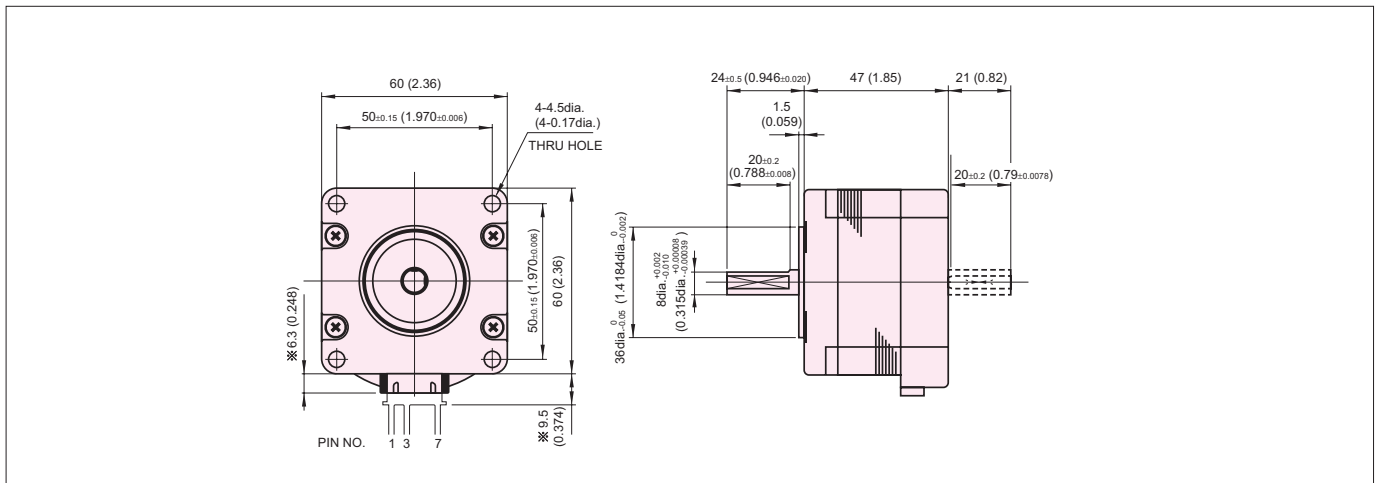
**HIGH TORQUE, SILENT ROTATION**

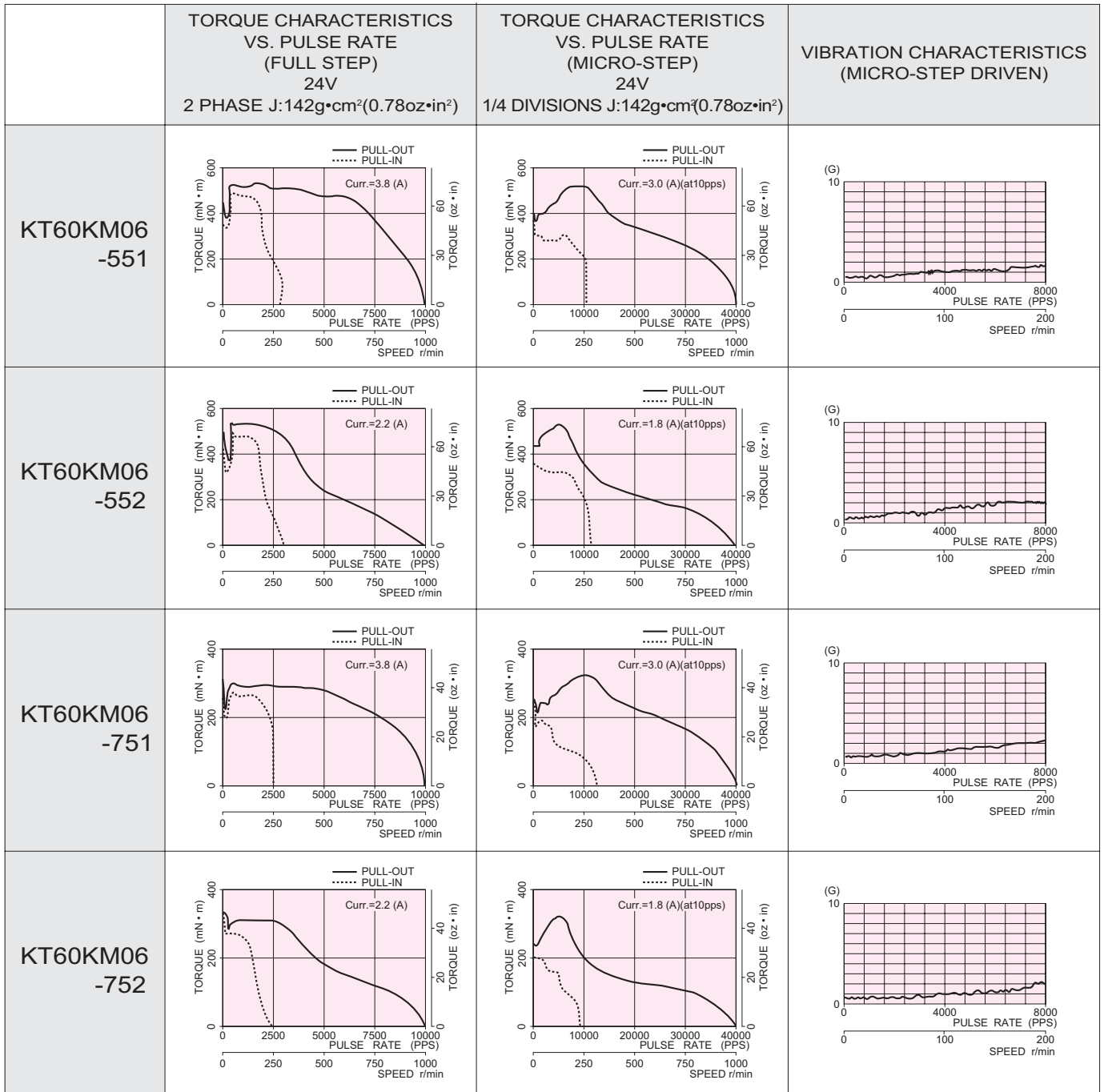
## STANDARD SPECIFICATIONS

MODEL	UNIT	KT60KM06			
		-551	-552	-751	-752
DRIVE METHOD	————	BI-POLAR			
NUMBER OF PHASES	————	3			
STEP ANGLE	deg./step	0.6			
VOLTAGE	V	2.09	3.52	2.09	3.52
CURRENT	A/2-PHASE	3.8	2.2	3.8	2.2
WINDING RESISTANCE	Ω/2-PHASE	0.55	1.6	0.55	1.6
INDUCTANCE	mH/2-PHASE	1.0	3.0	1.0	3.1
HOLDING TORQUE	mN • m	500	500	300	300
	oz • in	69	69	42	42
DETENT TORQUE	mN • m	20	20	10	10
	oz • in	2.8	2.8	1.4	1.4
ROTOR INERTIA	g • cm <sup>2</sup>	170	170	170	170
	oz • in <sup>2</sup>	0.93	0.93	0.93	0.93
WEIGHTS	g	510	510	510	510
	lb	1.1	1.1	1.1	1.1
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)			
INSULATION RESISTANCE	————	500VDC 100MΩmin.			
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.			
OPERATING TEMP. RANGE	°C	-10 to 50			
ALLOWABLE TEMP. RISE	deg.	70			

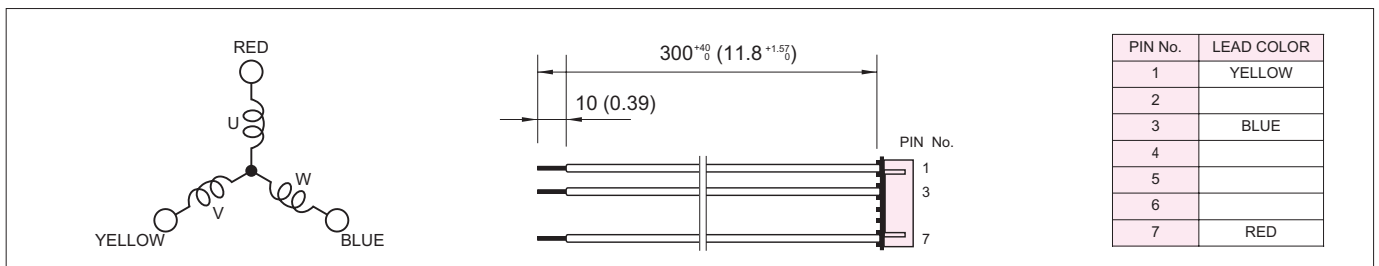


## DIMENSIONS unit = mm (inch)

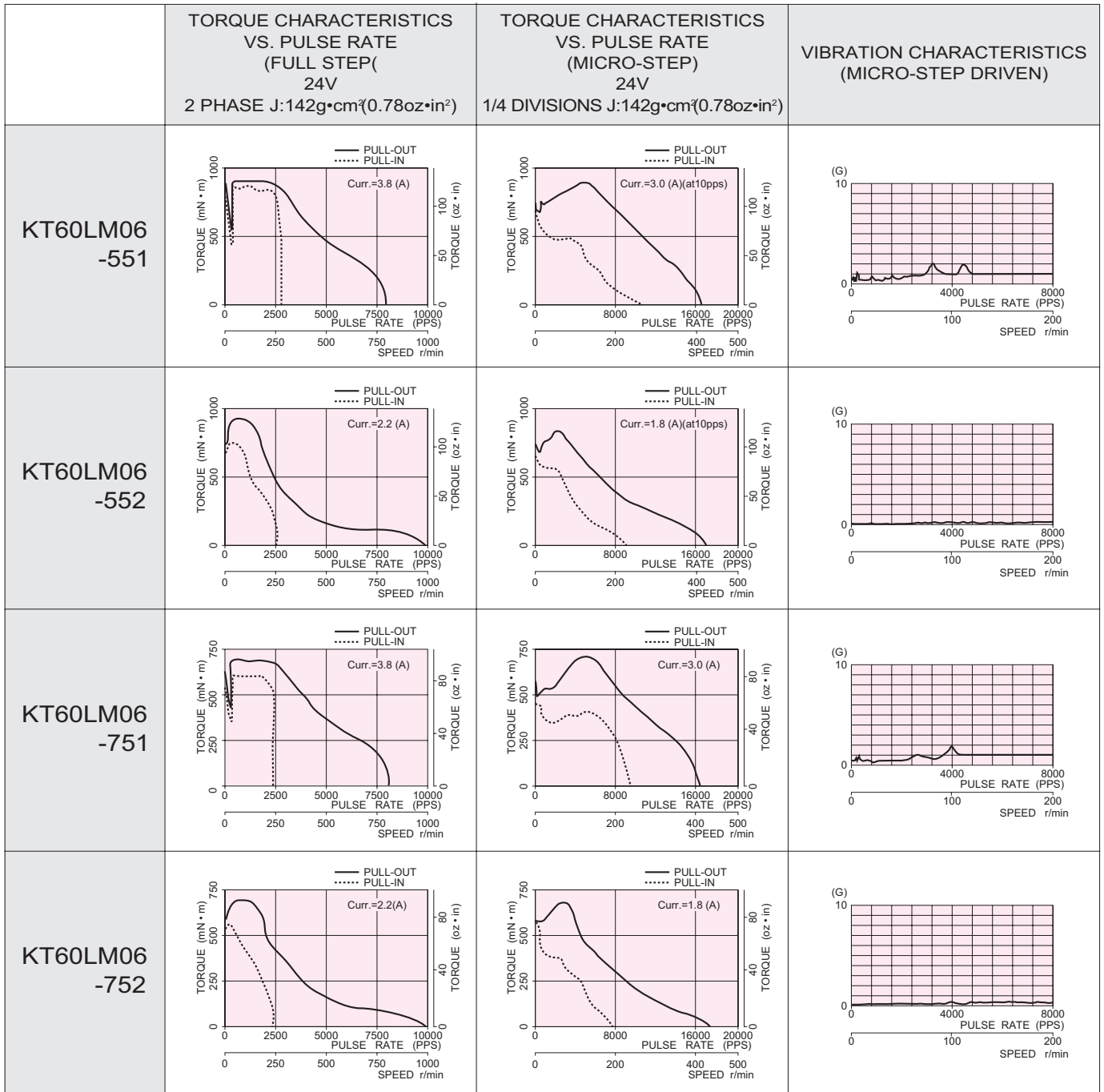




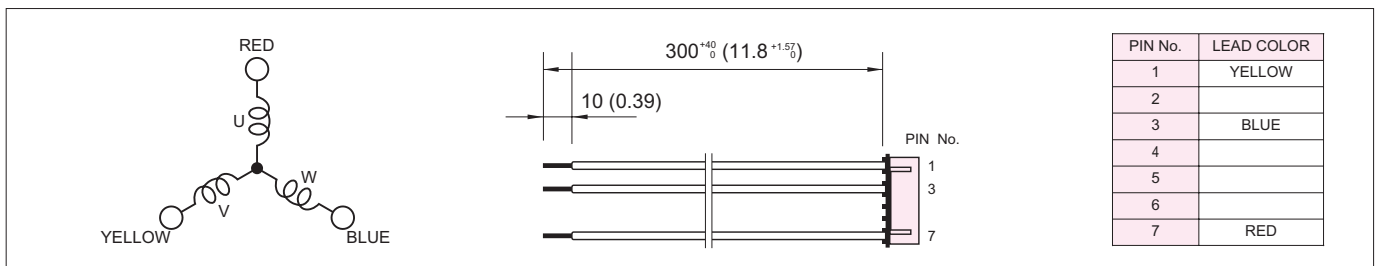
■ CONNECTION CABLE TO MOTOR unit = mm (inch)



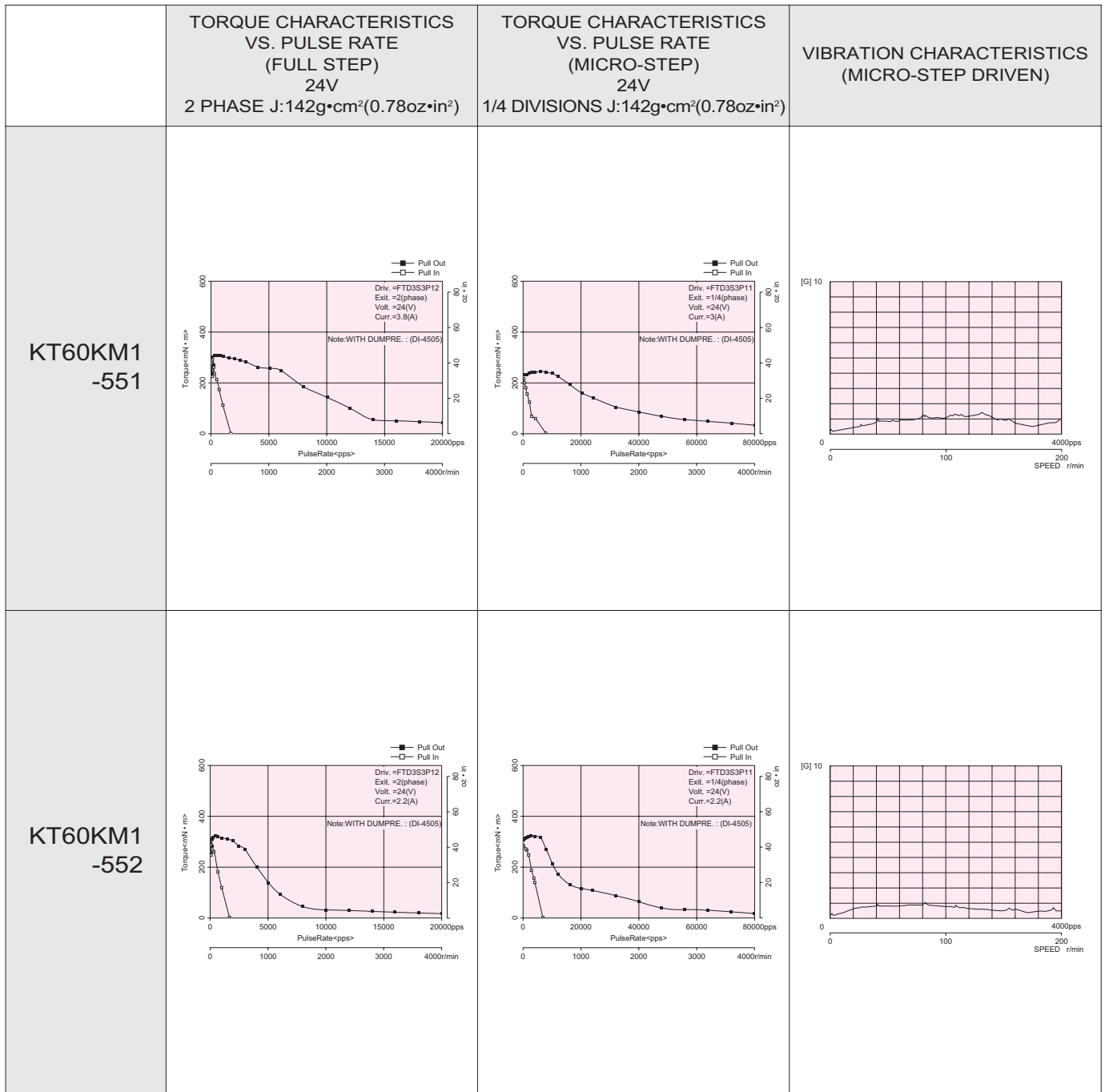




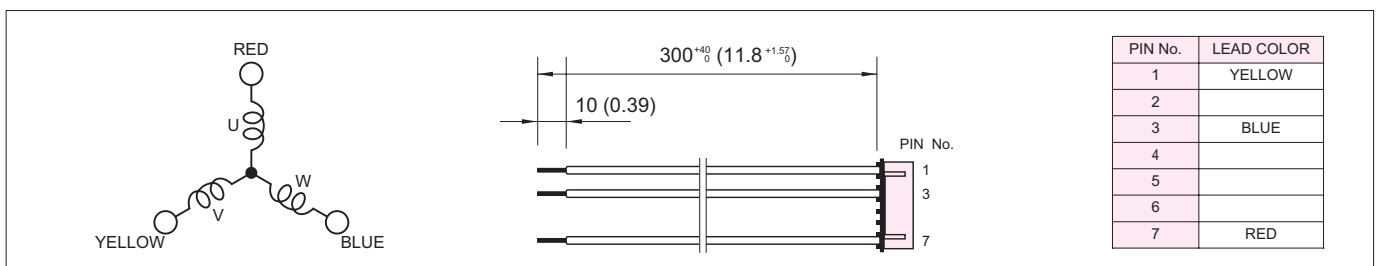
■ CONNECTION CABLE TO MOTOR unit = mm (inch)







■ CONNECTION CABLE TO MOTOR unit = mm (inch)



# 3-Phase Hybrid Stepping Motor

1.2°

# KT60 series TRISYN

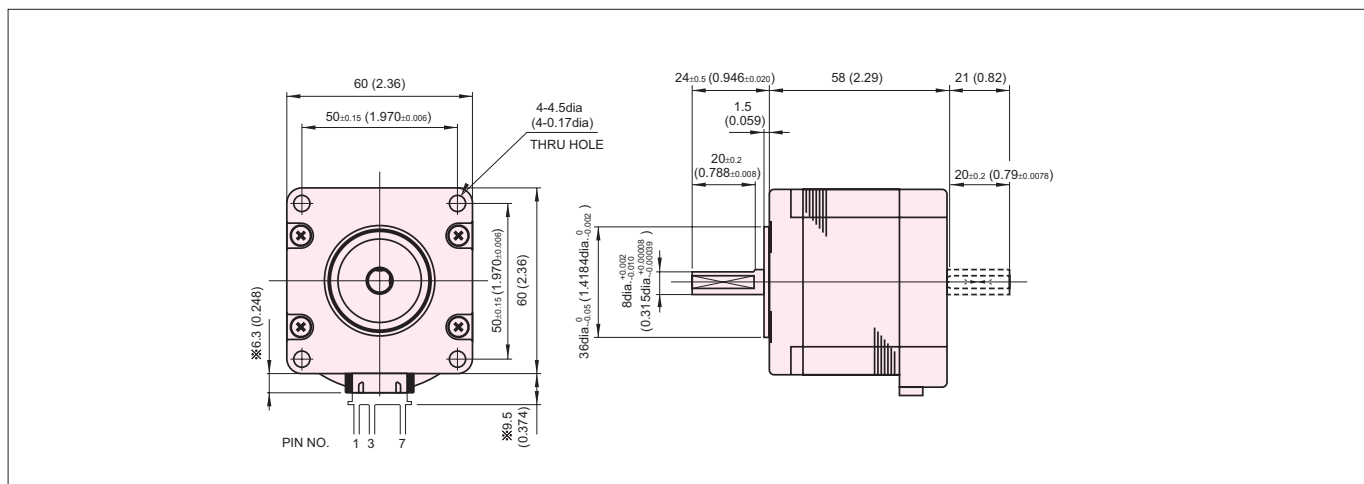
HIGH TORQUE, SILENT ROTATION

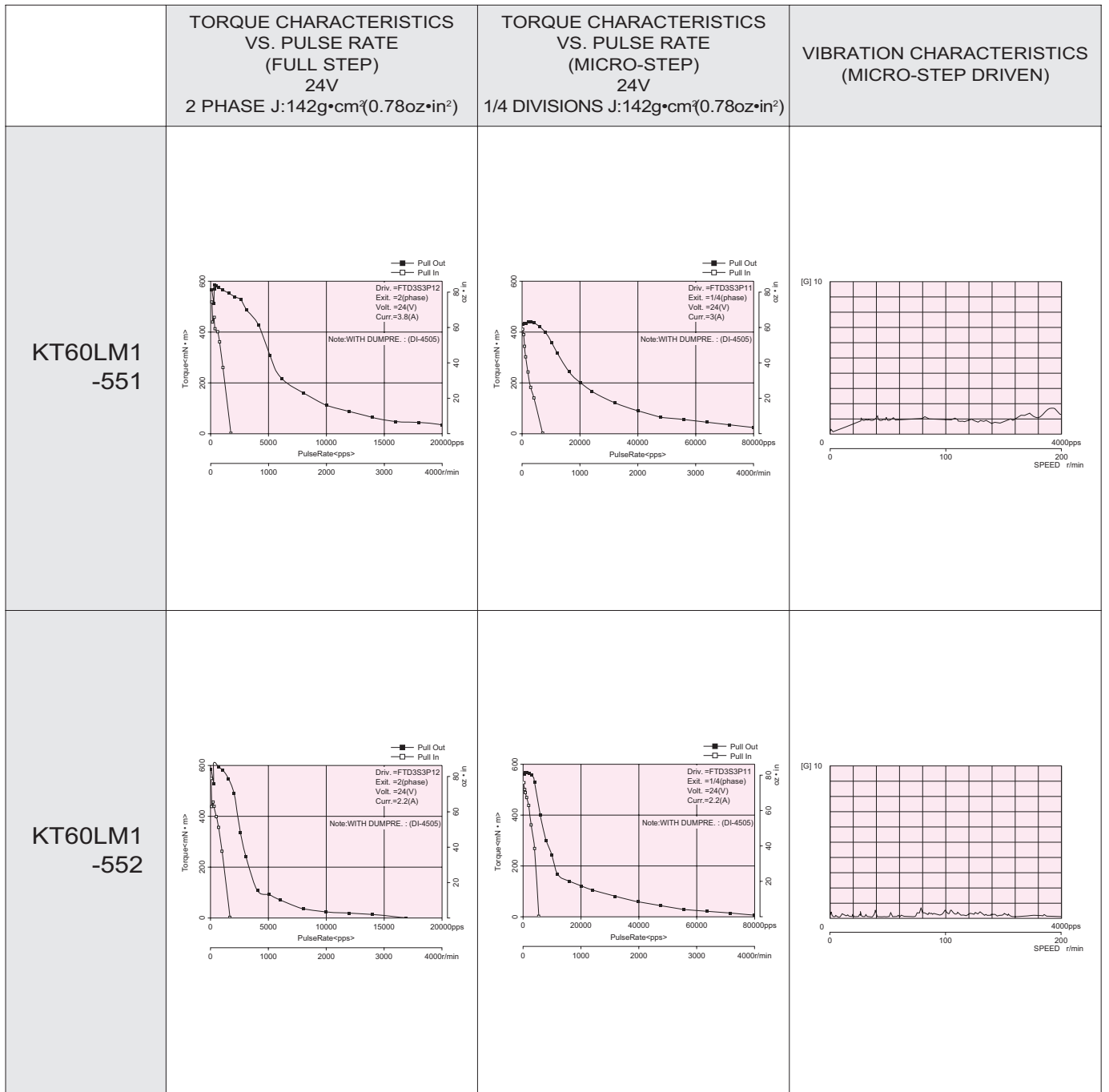
## STANDARD SPECIFICATIONS

MODEL	UNIT	KT60LM1	
		-551	-552
DRIVE METHOD	————	BI-POLAR	
NUMBER OF PHASES	————	3	
STEP ANGLE	deg./step	1.2	
VOLTAGE	V	2.77	4.84
CURRENT	A/2-PHASE	3.8	2.2
WINDING RESISTANCE	Ω/2-PHASE	0.73	2.2
INDUCTANCE	mH/2-PHASE	1.0	3.3
HOLDING TORQUE	mN • m	600	600
	oz • in	85	85
DETENT TORQUE	mN • m	25	25
	oz • in	3.5	3.5
ROTOR INERTIA	g • cm <sup>2</sup>	265	265
	oz • in <sup>2</sup>	1.45	1.45
WEIGHTS	g	720	720
	lb	1.6	1.6
INSULATION CLASS	————	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)	
INSULATION RESISTANCE	————	500VDC 100MΩmin.	
DIELECTRIC STRENGTH	————	500VAC 50HZ 1min.	
OPERATING TEMP. RANGE	°C	-10 to 50	
ALLOWABLE TEMP. RISE	deg.	70	

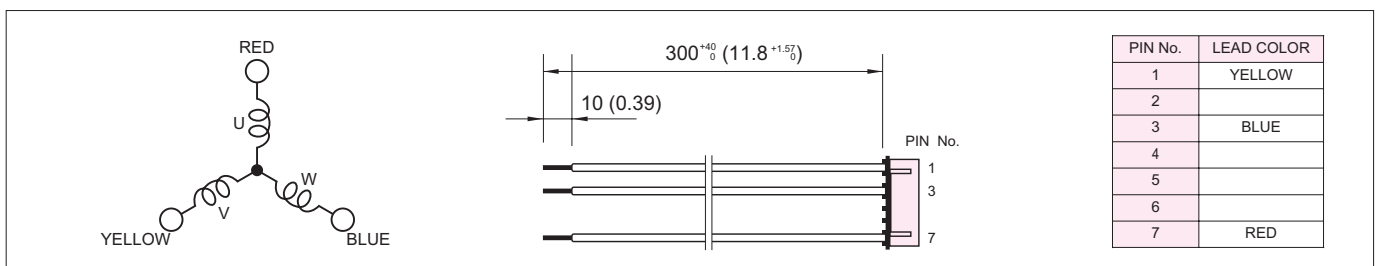


## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch)





# 3-Phase Hybrid Stepping Motor

**3.75°**

# KR42 series *TRISYN*

HIGH TORQUE, LOW VIBRATION AND LOW OPERATING NOISE

## STANDARD SPECIFICATIONS

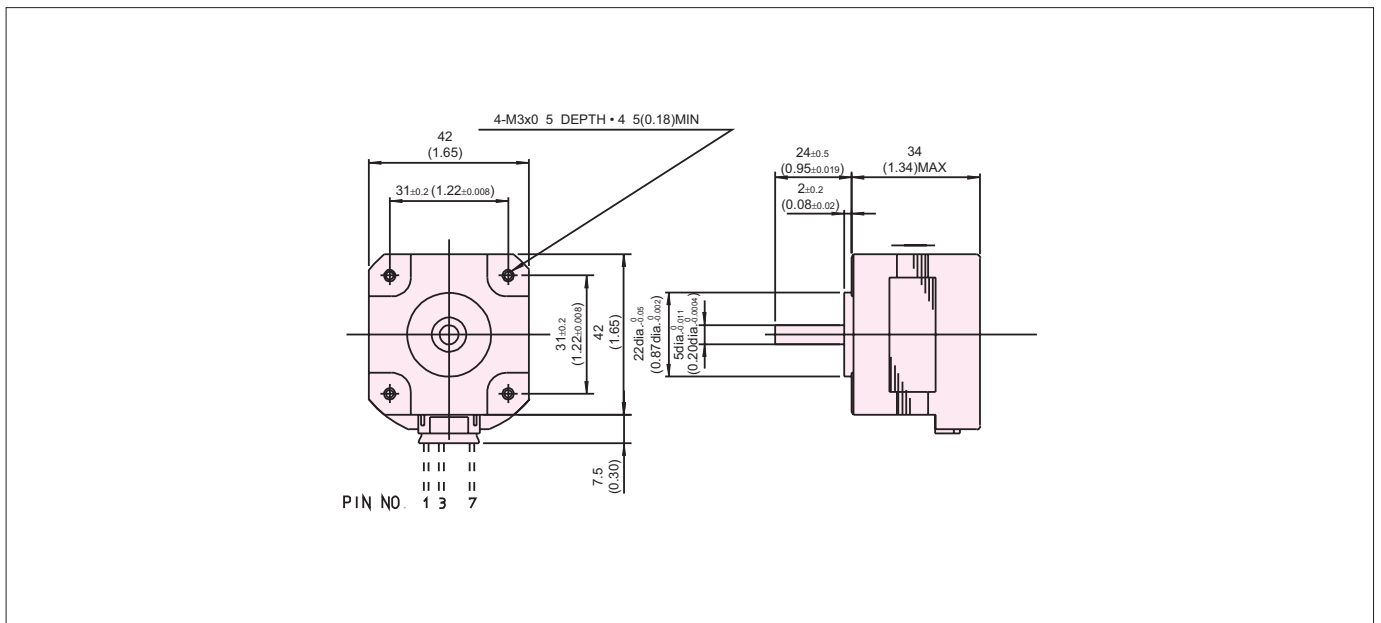
MODEL	UNIT	KR42HM4	
		-551	-552
NUMBER OF PHASES	—	3	
STEP ANGLE	deg./step	3.75	
VOLTAGE	V	2.8	4.42
CURRENT	A/2-PHASE	2	1.3
WINDING RESISTANCE	$\Omega$ /2-PHASE	1.4	3.4
INDUCTANCE	mH/2-PHASE	1.7	4.0
HOLDING TORQUE	mN · m	<sup>*1</sup> 49	<sup>*2</sup> 49
	oz · in	6.9	6.9
DETENT TORQUE	mN · m	9.8	9.8
	oz · in	1.4	1.4
ROTOR INERTIA	g · cm <sup>2</sup>	31	31
	oz · in <sup>2</sup>	0.17	0.17
WEIGHTS	kg	0.19	0.19
	lb	0.42	0.42
INSULATION CLASS	—	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130° 266°F)	
INSULATION RESISTANCE	—	500VDC 100M $\Omega$ min.	
DIELECTRIC STRENGTH	—	500VAC 50HZ 1min.	
OPERATING TEMP. RANGE	°C	-10 to 50	
ALLOWABLE TEMP. RISE	deg.	70	

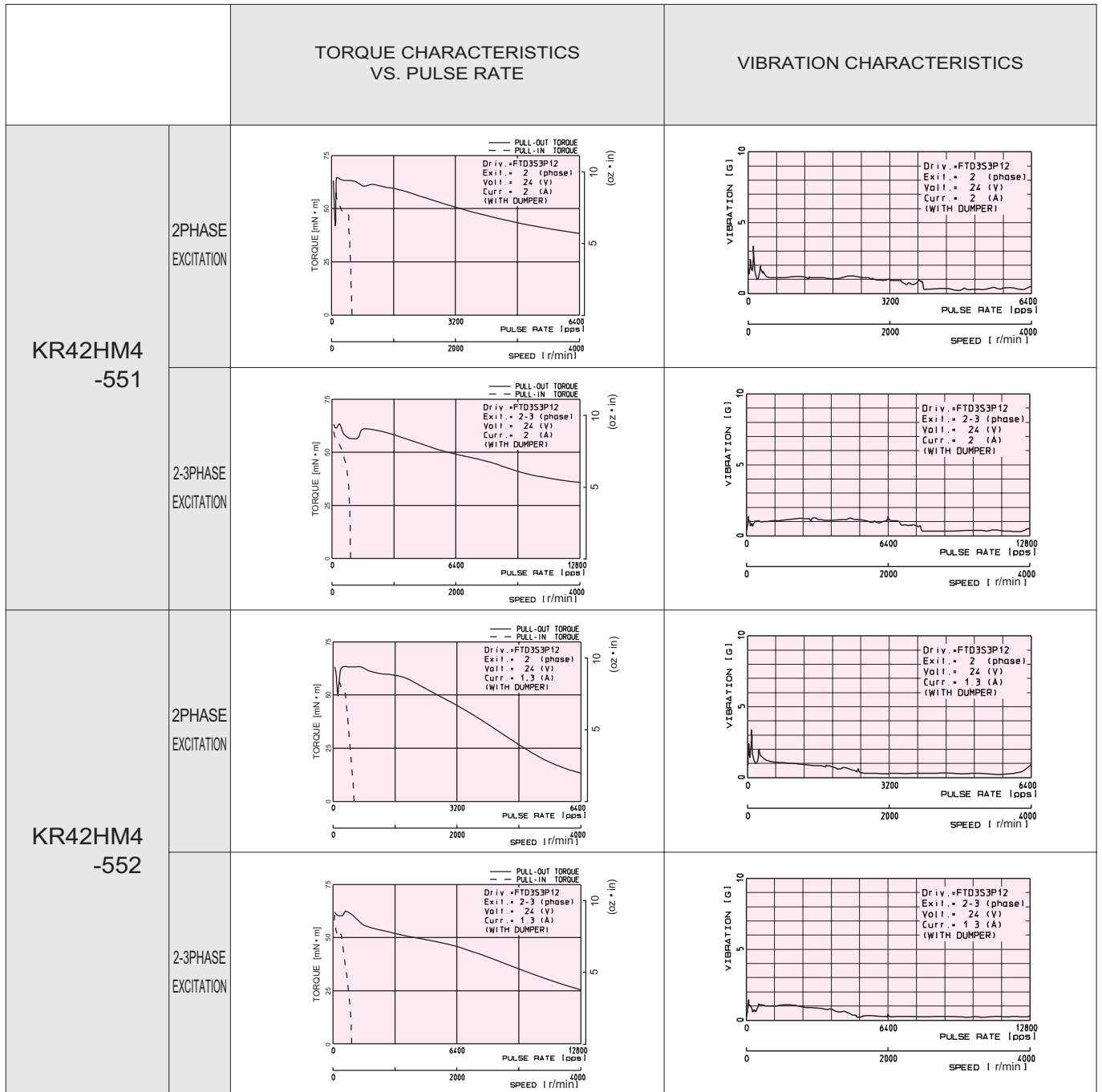
\*1 : 2A/2-Phase

\*2 : 1.3A/2-Phase

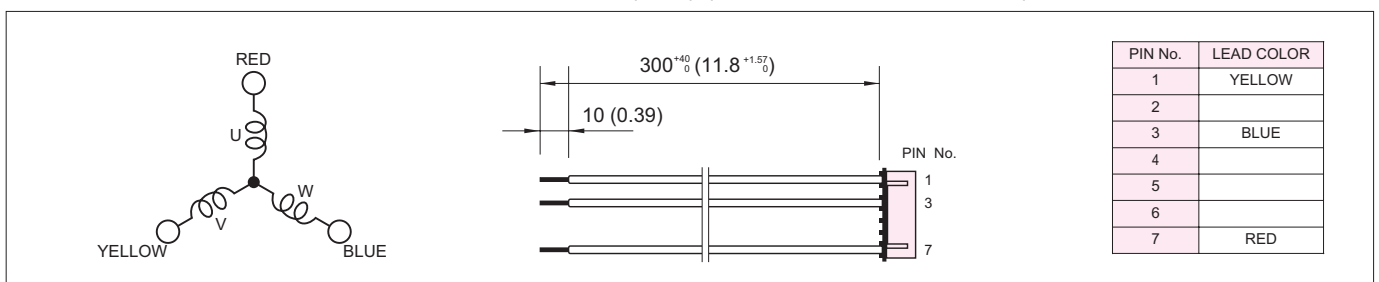


## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM4-551)



# 3-Phase Hybrid Stepping Motor

**3.75°**

# KR42 series TRISYN

HIGH TORQUE, LOW VIBRATION AND LOW OPERATING NOISE

## STANDARD SPECIFICATIONS

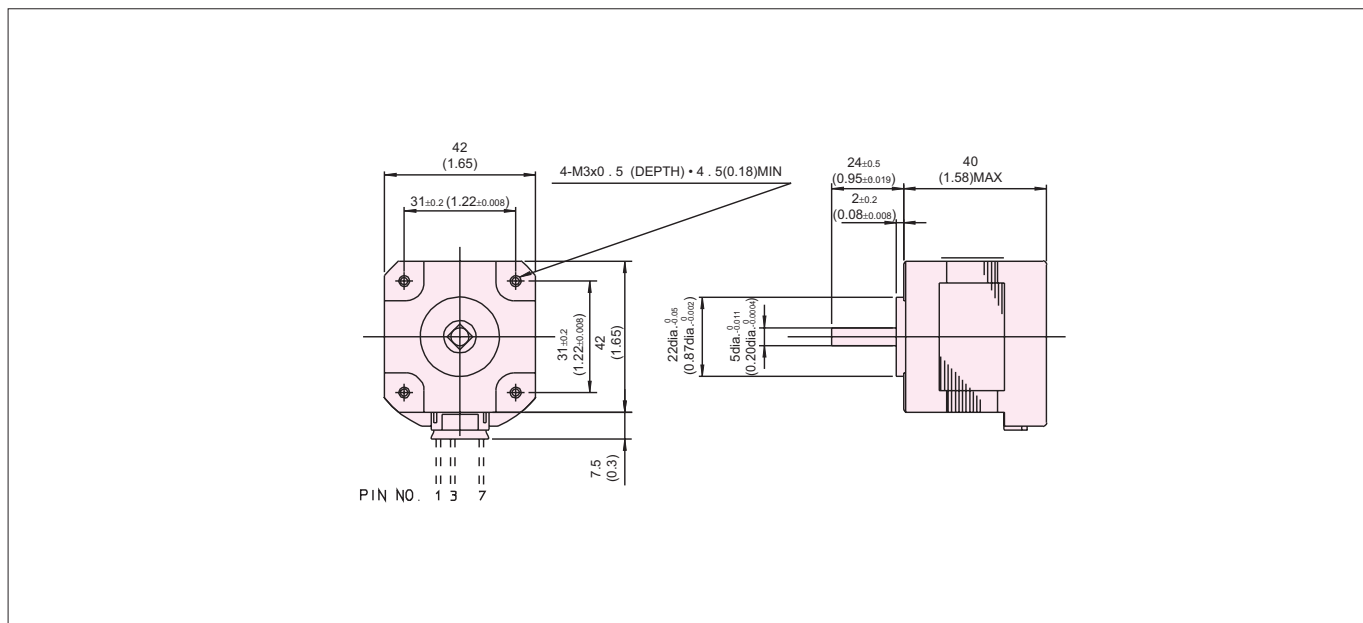
MODEL	UNIT	KR42JM4	
		-551	-552
NUMBER OF PHASES	—	3	
STEP ANGLE	deg./step	3.75	
VOLTAGE	V	3.5	5.16
CURRENT	A/2-PHASE	2	1.2
WINDING RESISTANCE	$\Omega$ /2-PHASE	1.75	4.3
INDUCTANCE	mH/2-PHASE	2.1	8.7
HOLDING TORQUE	mN · m	<sup>*1</sup> 88	<sup>*2</sup> 88
	oz · in	12.5	12.5
DETENT TORQUE	mN · m	9.8	9.8
	oz · in	1.4	1.4
ROTOR INERTIA	g · cm <sup>2</sup>	45	45
	oz · in <sup>2</sup>	0.25	0.25
WEIGHTS	kg	0.24	0.24
	lb	0.53	0.53
INSULATION CLASS	—	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 26°F)	
INSULATION RESISTANCE	—	500VDC 100M $\Omega$ min.	
DIELECTRIC STRENGTH	—	500VAC 50HZ 1min.	
OPERATING TEMP. RANGE	°C	-10 to 50	
ALLOWABLE TEMP. RISE	deg.	70	

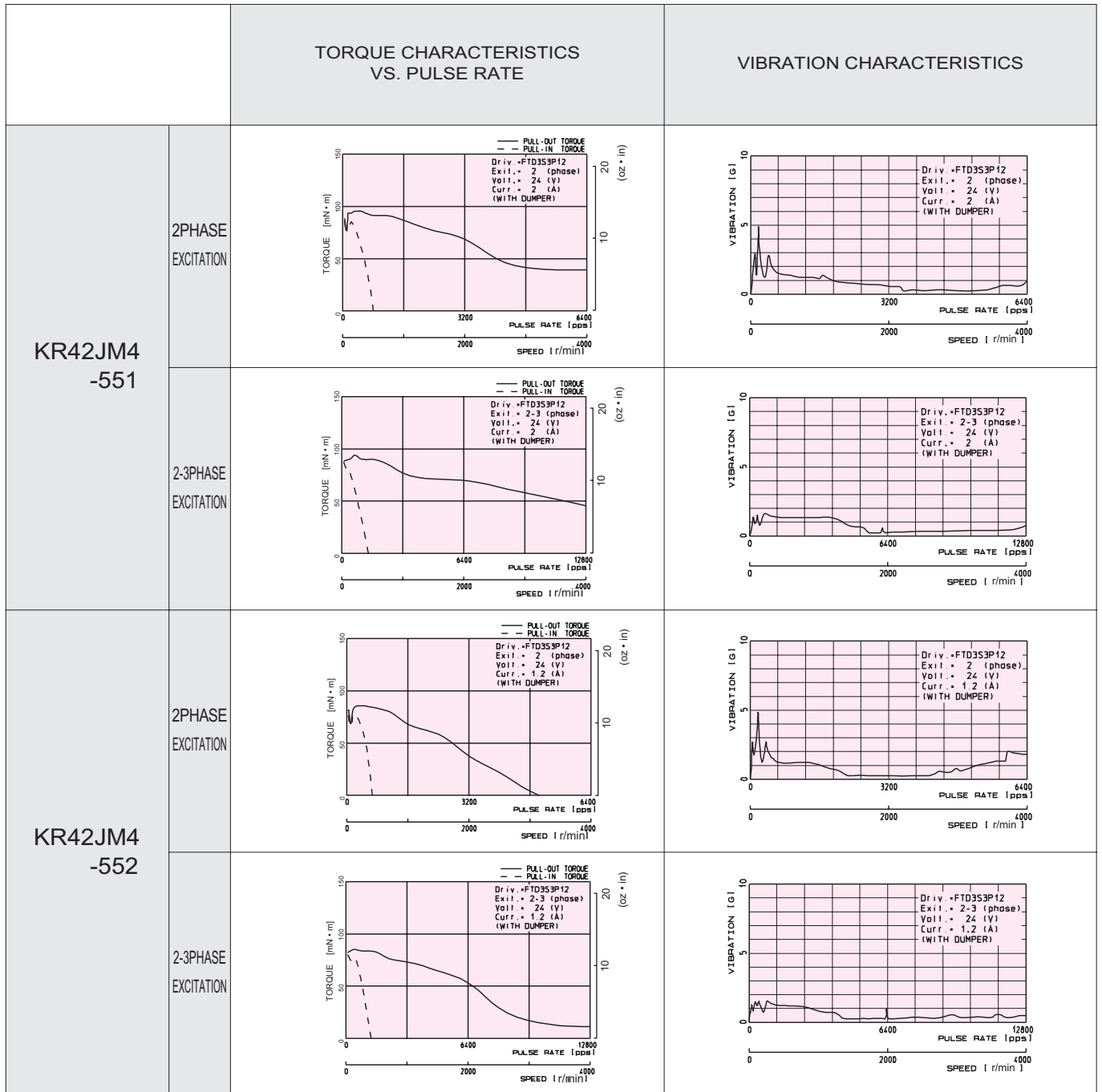
\*1 : 2A/2-Phase

\*2 : 1.3A/2-Phase

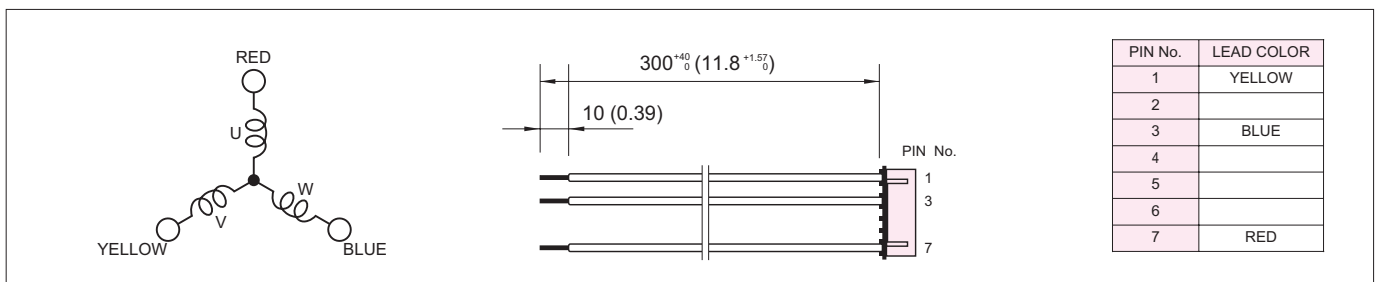


## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM4-551)



# 3-Phase Hybrid Stepping Motor

**3.75°**

# KR42 series TRISYN

HIGH TORQUE, LOW VIBRATION AND LOW OPERATING NOISE

## STANDARD SPECIFICATIONS

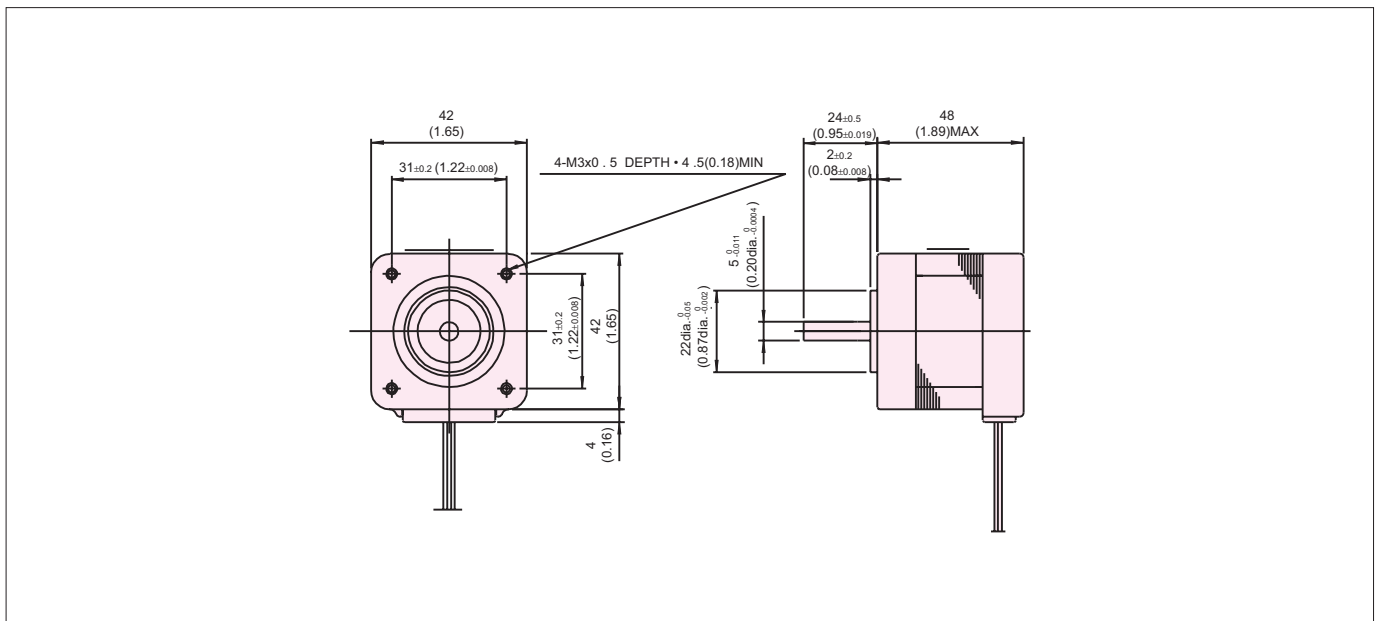
MODEL	UNIT	KR42KM4	
		-551	-552
NUMBER OF PHASES	—	3	
STEP ANGLE	deg./step	3.75	
VOLTAGE	V	3.5	6.5
CURRENT	A/2-PHASE	2.5	1.3
WINDING RESISTANCE	$\Omega$ /2-PHASE	1.40	5.0
INDUCTANCE	mH/2-PHASE	1.7	7.7
HOLDING TORQUE	mN · m	*1 118	*2 118
	oz · in	16.7	16.7
DETENT TORQUE	mN · m	9.8	9.8
	oz · in	1.4	1.4
ROTOR INERTIA	g · cm <sup>2</sup>	57	57
	oz · in <sup>2</sup>	0.31	0.31
WEIGHTS	kg	0.32	
	lb	0.70	
INSULATION CLASS	—	JIS Class E (120°C 248°F)(UL VALUE:CLASS B 130°C 266°F)	
INSULATION RESISTANCE	—	500VDC 100M $\Omega$ min.	
DIELECTRIC STRENGTH	—	500VAC 50HZ 1min.	
OPERATING TEMP. RANGE	°C	-10 to 50	
ALLOWABLE TEMP. RISE	deg.	70	

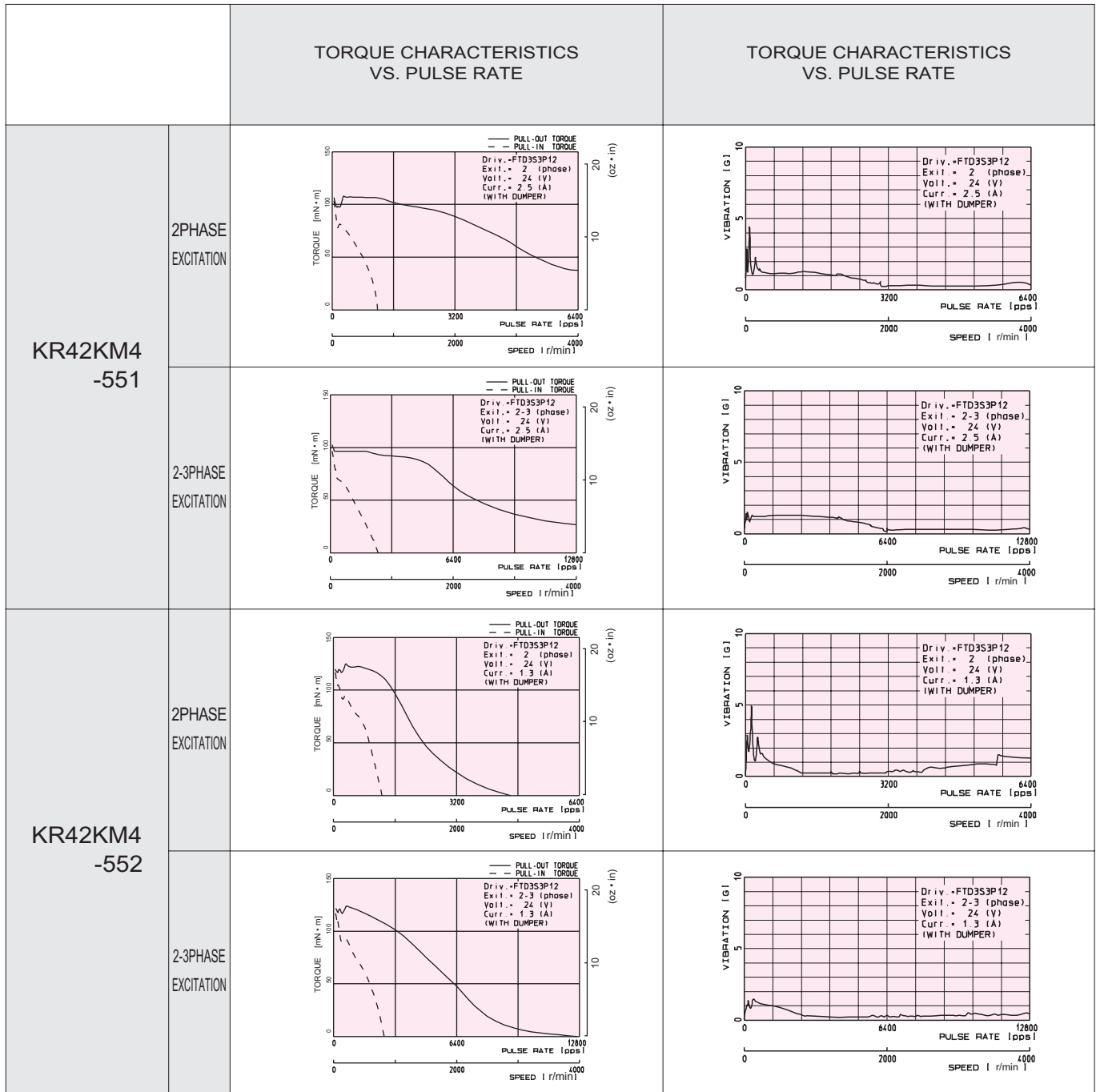


\*1 : 2A/2-Phase

\*2 : 1.3A/2-Phase

## DIMENSIONS unit = mm (inch)





■ CONNECTION CABLE TO MOTOR unit = mm (inch) (Except for KT42EM4-551)

