BOURNS®

MOV-10DxxxKC Series

Metal Oxide Varistors



*RoHS COMPLIANT

Features

- High voltage and current rating
- Straight and kinked lead styles available
- Bidirectional
- Surge protection
- Fast response time
- RoHS compliant*
- Agency listing: cULus

Applications

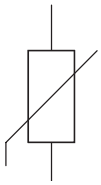
- Power supplies
- Power systems
- Line voltage
- Telecom systems
- White goods / appliances

Sustainability

- Eco-logistics-friendly packing
- Corrosion-resistant for longevity
- ISO 14001, low-impact energy
- Responsibly sourced and produced

Product Overview

The 10 mm radial leaded varistorMOV-10DxxxK Series protects against overvoltage transients such as lightning, power contact and power induction. The metal oxide varistors offer a choice of varistor voltages from 200 V to 820 V and V_{rms} voltages from 130 V to 510 V.



The devices have a high current handling, high energy absorption capability and fast response times to protect against transient faults up to rated limits.

Contact Information

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Industry Standard Compliance

Standard	UL 1449
File Number	E313168
Standard	UL 1449
MOV-10D201KC, MOV-10D361KC, MOV-10D391KC, MOV-10D431KC	Will pass 600 V rms, 600 W, 1 A, 0.2 s, 5 cycles, every 1 min. condition

Absolute Maximum Ratings (@ T_A = 25 °C Unless Otherwise Noted)

Parameter	Symbol	Min.	Typ.	Max.	Unit
Operating Temperature	T_{OPR}	-40	25	+105	°C
Storage Temperature	T_{STG}	-40	25	+125	°C
Rated Wattage	P_w			0.40	Watt
Varistor Voltage Temperature Coefficient	V_{TC}	0		0.05	% / °C
Response Time	T_r		10	25	ns
Varistor Voltage Tolerance	V_{tol}	-10	0	10	%

Electrical Characteristics (@ T_A = 25 °C Unless Otherwise Noted)

Bourns Part No.	Max. Continuous Voltage (V)		Voltage @ 1 mA DC (V)			Voltage @ Class Current (8/20 µs)		Max. Peak Current (8/20 µs)	Max. Energy (J)	Typ. Cap. (pF)
	r.m.s.	d.c.	Min.	Nom.	Max.	Class Current (A)	Max. Clamping Voltage (V)	One Time	8/20 µs	1 kHz
MOV-10D201KC	130	170	185	200	225	25	340	2500	30	600
MOV-10D221KC	140	180	198	220	242	25	360	2500	32	540
MOV-10D241KC	150	200	216	240	264	25	395	2500	35	504
MOV-10D271KC	175	225	243	270	297	25	455	2500	40	444
MOV-10D301KC	190	250	270	300	330	25	500	2500	40	396
MOV-10D331KC	210	275	297	330	363	25	550	2500	43	360
MOV-10D361KC	230	300	324	360	396	25	595	2500	47	336
MOV-10D391KC	250	320	351	390	429	25	650	2500	60	312
MOV-10D431KC	275	350	387	430	473	25	710	2500	65	276
MOV-10D471KC	300	385	423	470	517	25	775	2500	70	252
MOV-10D511KC	320	415	459	510	561	25	845	2500	70	240
MOV-10D561KC	350	460	504	560	616	25	925	2500	70	216
MOV-10D621KC	385	505	558	620	682	25	1025	2500	70	192
MOV-10D681KC	420	560	612	680	748	25	1120	2500	70	180
MOV-10D751KC	460	615	675	750	825	25	1240	2500	75	156
MOV-10D781KC	485	640	702	780	858	25	1290	2500	80	156
MOV-10D821KC	510	670	738	820	902	25	1355	2500	85	132

* RoHS Directive 2015/863, Mar 31, 2015 and Annex.
Specifications are subject to change without notice.
Users should verify actual device performance in their specific applications.

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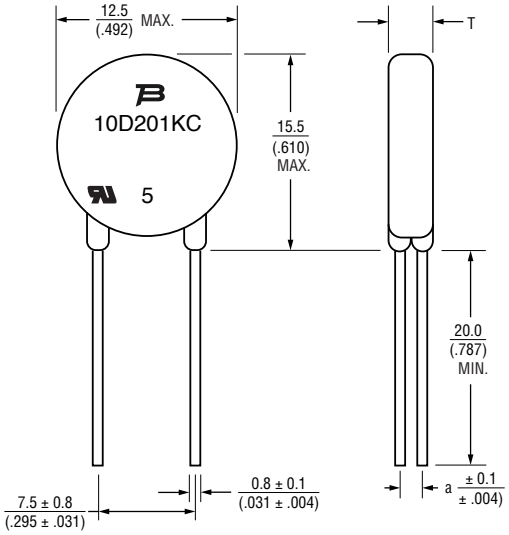


*RoHS COMPLIANT

Product Dimensions

This is an RoHS compliant molded radial package with 100 % Sn plating on the terminations.

Straight Leads

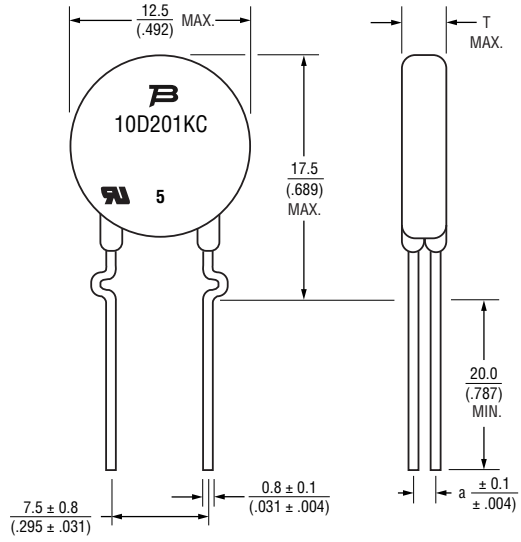


Bourns Part Number	Dim T (Max.)	Dim a (Typ.)
MOV-10D201KC	3.8 (.150)	1.9 (.075)
MOV-10D221KC	3.9 (.154)	2.0 (.079)
MOV-10D241KC	4.0 (.157)	2.1 (.083)
MOV-10D271KC	4.2 (.165)	2.3 (.091)
MOV-10D301KC	4.4 (.173)	2.6 (.102)
MOV-10D331KC	4.6 (.181)	2.7 (.106)
MOV-10D361KC	4.8 (.189)	2.8 (.110)
MOV-10D391KC	5.0 (.197)	2.9 (.114)
MOV-10D431KC	5.2 (.205)	3.1 (.122)

Bourns Part Number	Dim T (Max.)	Dim a (Typ.)
MOV-10D471KC	5.4 (.213)	3.3 (.130)
MOV-10D511KC	5.5 (.217)	3.5 (.138)
MOV-10D561KC	5.9 (.232)	3.8 (.150)
MOV-10D621KC	6.2 (.244)	4.0 (.157)
MOV-10D681KC	6.4 (.252)	4.0 (.157)
MOV-10D751KC	6.6 (.260)	4.1 (.161)
MOV-10D781KC	6.8 (.268)	4.1 (.161)
MOV-10D821KC	7.2 (.283)	4.2 (.165)

DIMENSIONS: MM / (INCHES)

Kinked Leads (Outward)



Bourns Part Number	Dim T (Max.)	Dim a (Typ.)
MOV-10D201KKC	3.8 (.150)	1.9 (.075)
MOV-10D221KKC	3.9 (.154)	2.0 (.079)
MOV-10D241KKC	4.0 (.157)	2.1 (.083)
MOV-10D271KKC	4.2 (.165)	2.3 (.091)
MOV-10D301KKC	4.4 (.173)	2.6 (.102)
MOV-10D331KKC	4.6 (.181)	2.7 (.106)
MOV-10D361KKC	4.8 (.189)	2.8 (.110)
MOV-10D391KKC	5.0 (.197)	2.9 (.114)
MOV-10D431KKC	5.2 (.205)	3.1 (.122)

Bourns Part Number	Dim T (Max.)	Dim a (Typ.)
MOV-10D471KKC	5.4 (.213)	3.3 (.130)
MOV-10D511KKC	5.5 (.217)	3.5 (.138)
MOV-10D561KKC	5.9 (.232)	3.8 (.150)
MOV-10D621KKC	6.2 (.244)	4.0 (.157)
MOV-10D681KKC	6.4 (.252)	4.0 (.157)
MOV-10D751KKC	6.6 (.260)	4.1 (.161)
MOV-10D781KKC	6.8 (.268)	4.1 (.161)
MOV-10D821KKC	N/A See Kinked Leads (In-line) Configuration	

DIMENSIONS: MM / (INCHES)

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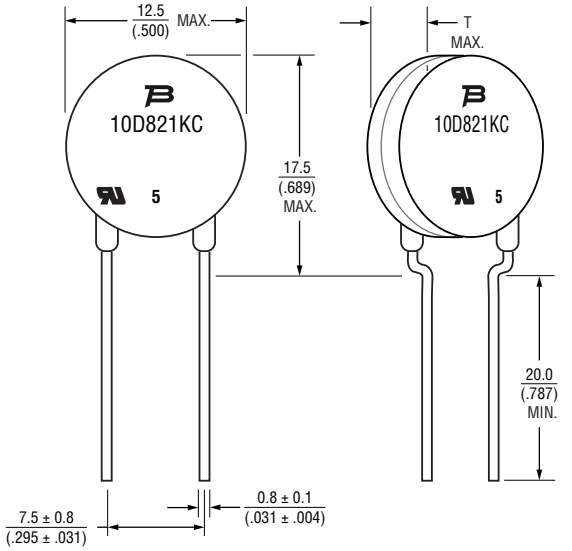


*RoHS COMPLIANT

Product Dimensions (Continued)

This is an RoHS compliant molded radial package with 100 % Sn plating on the terminations.

Kinked Leads (In-line)



Bourns Part Number	Dim T (Max.)
MOV-10D201KKC	N/A See Kinked Leads (Outward) Configuration
MOV-10D221KKC	
MOV-10D241KKC	
MOV-10D271KKC	
MOV-10D301KKC	
MOV-10D331KKC	
MOV-10D361KKC	
MOV-10D391KKC	
MOV-10D431KKC	

Bourns Part Number	Dim T (Max.)
MOV-10D471KKC	N/A See Kinked Leads (Outward) Configuration
MOV-10D511KKC	
MOV-10D561KKC	
MOV-10D621KKC	
MOV-10D681KKC	
MOV-10D751KKC	
MOV-10D781KKC	
MOV-10D821KKC	7.2 (.283)

DIMENSIONS: MM (INCHES)

Typical Part Marking

Bourns Part Number	Bourns Part Marking
MOV-10D201KC	10D201KC
MOV-10D221KC	10D221KC
MOV-10D241KC	10D241KC
MOV-10D271KC	10D271KC
MOV-10D301KC	10D301KC
MOV-10D331KC	10D331KC
MOV-10D361KC	10D361KC
MOV-10D391KC	10D391KC
MOV-10D431KC	10D431KC
MOV-10D471KC	10D471KC
MOV-10D511KC	10D511KC
MOV-10D561KC	10D561KC
MOV-10D621KC	10D621KC
MOV-10D681KC	10D681KC
MOV-10D751KC	10D751KC
MOV-10D781KC	10D781KC
MOV-10D821KC	10D821KC

NOTE: The "5" marking on MOV products is for traceability of production assembly for quality assurance compliance.

How to Order

MOV - 10D nn (n) K __ C (TR)

Model Designator
MOV = Metal Oxide Varistor

Disc Diameter
10D = 10 mm

Nominal Varistor Voltage
See Electrical Characteristics Table

Multiplier of Voltage Digits
0 = No multiplier
1 = nn * 10^1

Varistor Voltage Tolerance
K = 10 %

Lead Style
Blank = Straight Leads
K = Kinked Leads

Electrode
C = Copper-based Electrode

Packaging
Blank = Bulk
TR = Tape & Reel

Examples:
MOV-10D201KC = 200 V, Straight Leads, Bulk Pack
MOV-10D331KKCTR = 330 V, Kinked Leads (Outward),Tape & Reel

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MOV-10DxxxKC Series

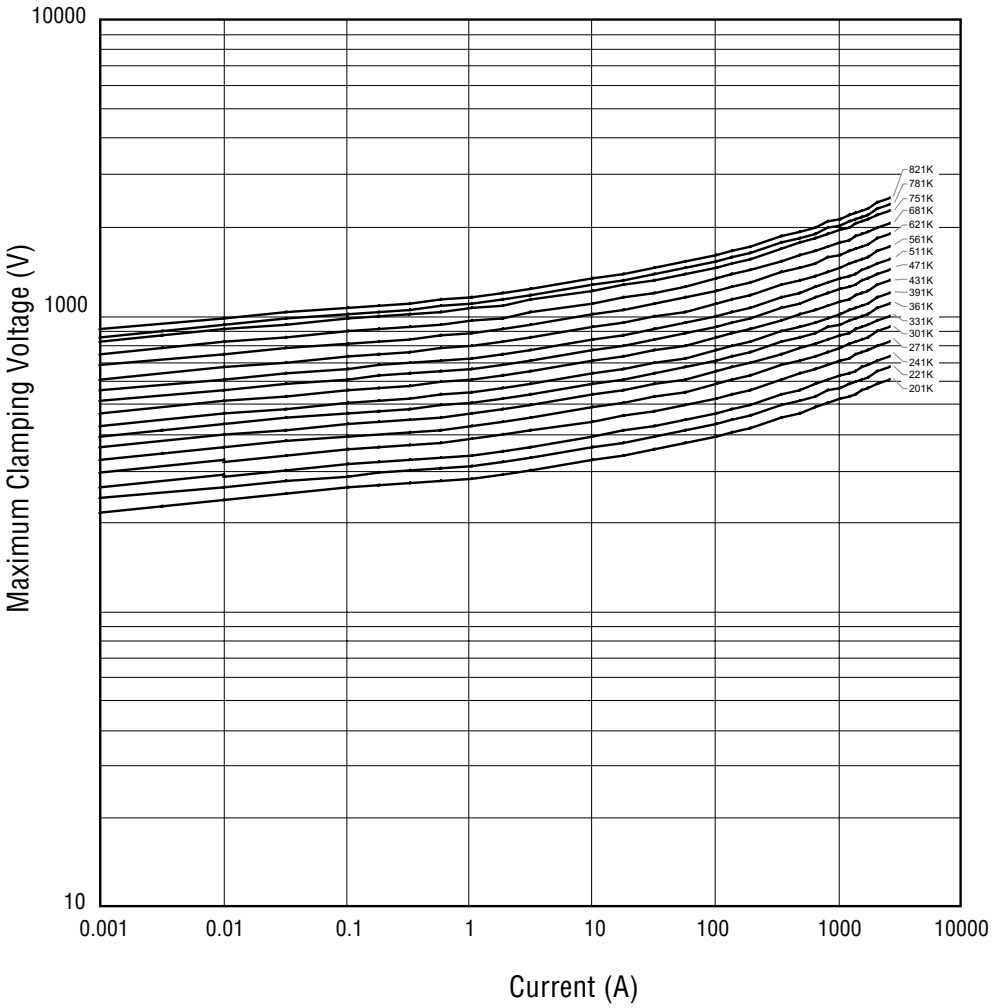
Metal Oxide Varistors



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Performance Graphs

V-I Characteristics



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MOV-10DxxxKC Series

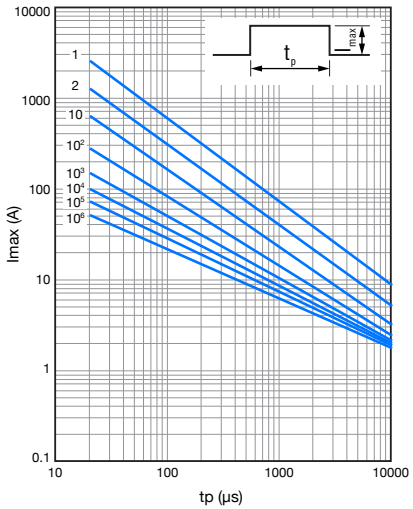
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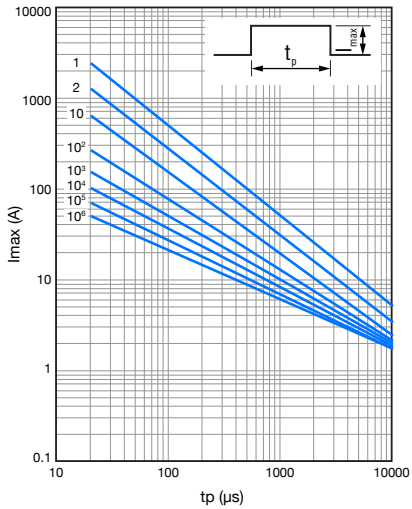
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Pulse Rating Curves

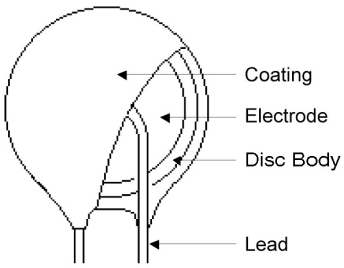
10D201KC~751KC



10D781KC~821KC



Internal Construction



Environmental Specifications

Moisture Sensitivity Level 1
ESD Classification (HBM) ..... N/A

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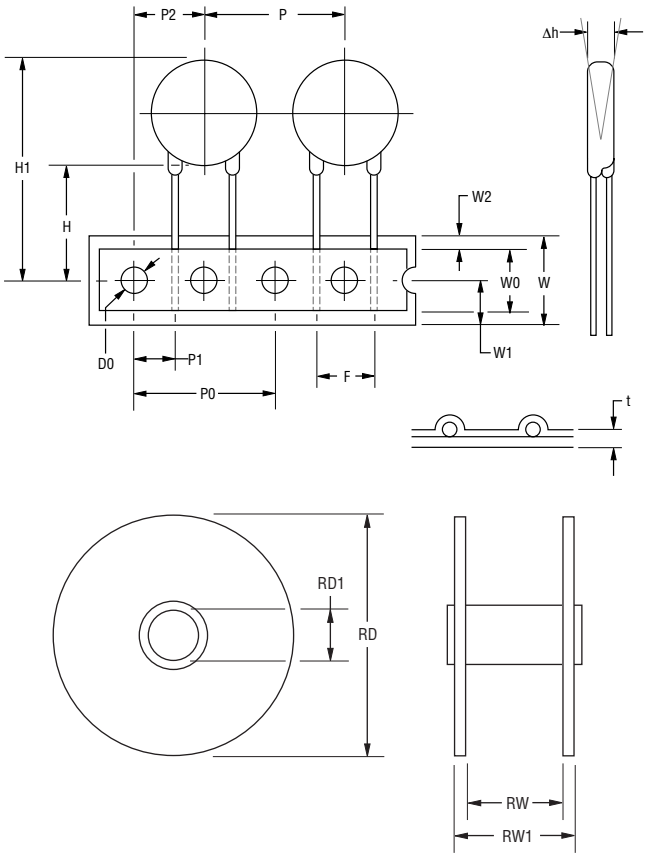
Metal Oxide Varistors



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Packaging Specifications

TAPE & REEL - Straight Leads



Item	Symbol	10 mm Disc
Reel Outside Diameter	RD	355 (13.98)
Reel Inner Diameter	RD1	30 (1.181)
Tape Width	RW	55 (2.16)
Reel Width	RW1	63 (2.48) max.
Pitch of Component	P	25.4 ± 1.0 (1.00 ± 0.04)
Feed Hole Pitch	P0	12.7 ± 0.2 (0.50 ± 0.008)
Feed Hole Center to Pitch	P1	8.95 ± 0.7 (0.352 ± 0.03)
Feed Hole Center to Component Center	P2	12.7 ± 0.7 (0.50 ± 0.03)
Lead to Lead Distance	F	7.50 ± 0.8 (0.30 ± 0.03)
Component Alignment	Dh	2.0 (0.79) max.
Tape Width	W	18.0 ± 0.5 (0.71 ± 0.02)
Hole Down Tape Width	W0	12.0 ± 0.8 (0.47 ± 0.03)
Hole Position	W1	9.0 ± 0.5 (0.35 ± 0.02)
Hole Down Tape Position	W2	3.0 (0.12) max.
Height From Center to Component Base	H	19.0 ± 1.0 (0.75 ± 0.04)
Component Height	H1	36.0 (1.42) max.
Feed Hole Diameter	D0	4.0 ± 0.2 (0.16 ± 0.08)
Total Tape Thickness	t	0.6 ± 0.3 (0.02 ± 0.01)
Quantity per Reel (10D201KC – 10D361KC)	-	1000
Quantity per Reel (10D391KC – 10D821KC)	-	500

DIMENSIONS: MM (INCHES)

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MOV-10DxxxKC Series

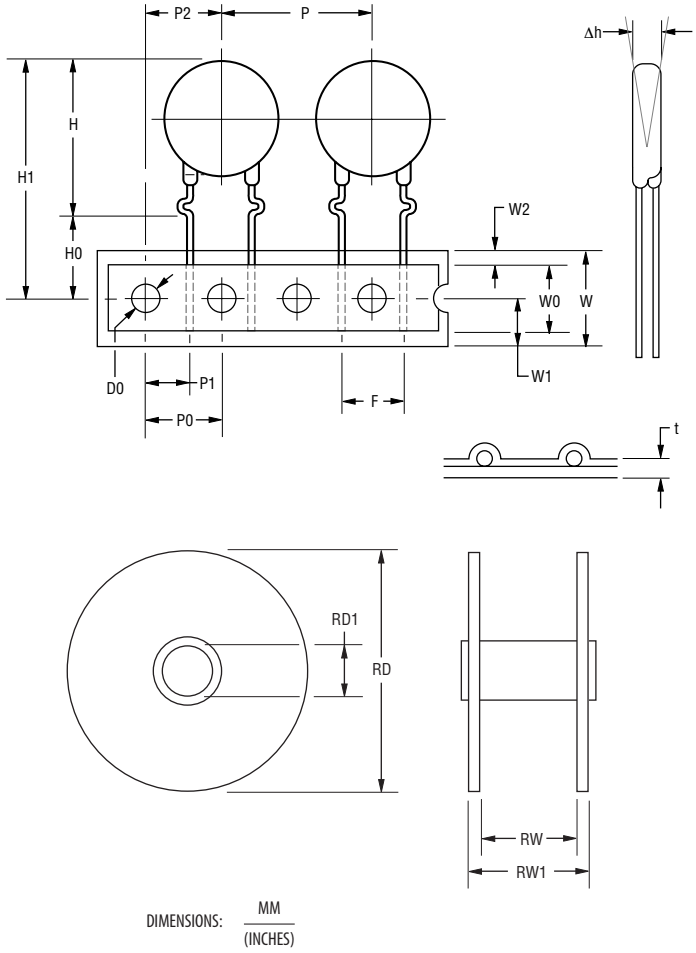
Metal Oxide Varistors



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Packaging Specifications (Continued)

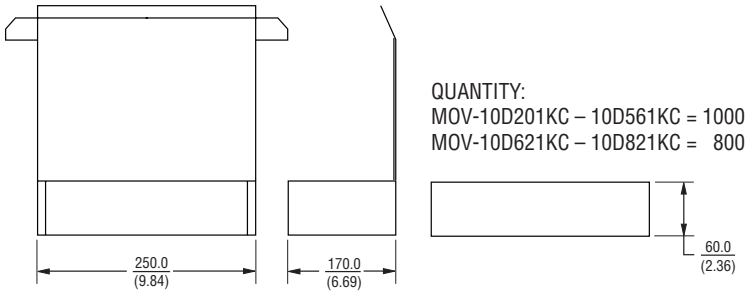
TAPE & REEL - Kinked Leads



DIMENSIONS: MM / (INCHES)

Item	Symbol	10 mm Disc
Reel Outside Diameter	RD	355 (13.98)
Reel Inner Diameter	RD1	30 (1.181)
Tape Width	RW	55 (2.16)
Reel Width	RW1	63 (2.48) max.
Pitch of Component	P	25.4 ± 1.0 (1.00 ± 0.04)
Feed Hole Pitch	P0	12.7 ± 0.2 (0.50 ± 0.008)
Feed Hole Center to Pitch	P1	8.95 ± 0.7 (0.352 ± 0.03)
Feed Hole Center to Component Center	P2	12.7 ± 0.7 (0.50 ± 0.03)
Lead to Lead Distance	F	7.50 ± 0.8 (0.30 ± 0.03)
Component Alignment	Dh	2.0 (0.79) max.
Tape Width	W	18.0 ± 0.5 (0.71 ± 0.02)
Hole Down Tape Width	W0	12.0 ± 0.8 (0.47 ± 0.03)
Hole Position	W1	9.0 ± 0.5 (0.35 ± 0.02)
Hole Down Tape Position	W2	3.0 (0.12) max.
Height From Component Top to Kinked Base	H	17.5 (0.69) max.
Seating Plane Height	H0	16.0 ± 0.5 (0.63 ± 0.02)
Component Height	H1	36.0 (1.42) max.
Feed Hole Diameter	D0	4.0 ± 0.2 (0.16 ± 0.08)
Total Tape Thickness	t	0.6 ± 0.3 (0.02 ± 0.01)
Quantity per Reel (10D201KKC – 10D361KKC)	-	1000
Quantity per Reel (10D391KKC – 10D821KKC)	-	500

BULK



QUANTITY:
MOV-10D201KC – 10D561KC = 1000 PCS. PER BOX
MOV-10D621KC – 10D821KC = 800 PCS. PER BOX

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