

# TWO PIN DIP

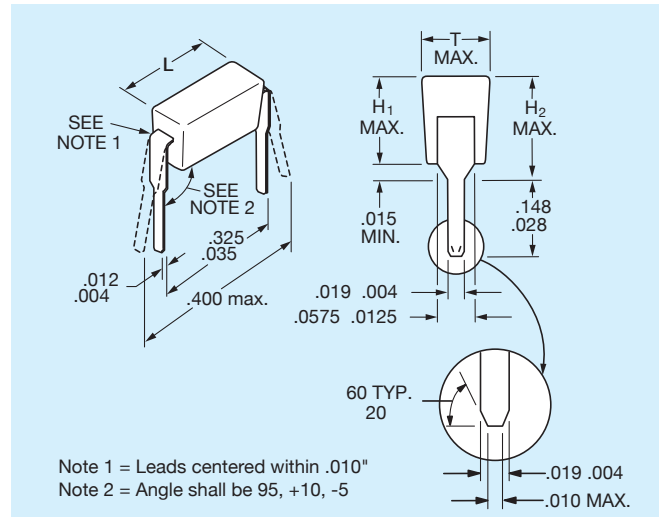
## DIPGuard®

### GENERAL INFORMATION

#### MD Series

**Temperature Coefficients:** COG (NP0), X7R, Z5U, 50, 100 Volts

**For established reliability DIPGuards see MIL-PRF-39014 section on pages 60 to 65.**



### HOW TO ORDER

**MD01**

**5**

**E**

**104**

**M**

**A**

**B**

#### Style

MD01  
CKR22\*  
CKS22\*\*  
MD02  
CKR23\*  
CKS23\*  
MD03  
CKR24\*  
CKS24\*\*

#### Voltage

5 = 50V  
1 = 100V

#### Temperature Coefficient

A = COG (NP0)  
C = X7R  
E = Z5U

#### Capacitance

First two digits are the significant figures of capacitance. Third digit indicates the additional number of zeros. For example, order 100,000 pF as 104.

#### Capacitance Tolerance

COG (NP0): F = ±1% J = ±5% K = ±10%  
X7R: J = ±5% K = ±10% M = ±20%  
Z5U: M = ±20% Z = +80% -20%

#### Failure Rate

A = Not Applicable

#### Assembly Method

A = Hand Assembled  
B = Automated Assembly

\* Reference pages 58 to 63.

\*\* Reference page 79.

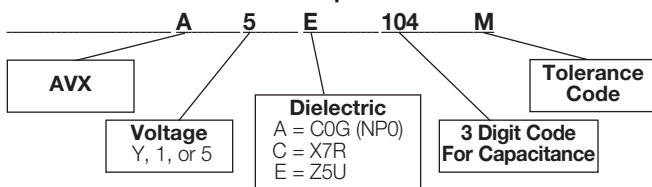
**Not RoHS Compliant**

### MARKING

#### Part Number Example

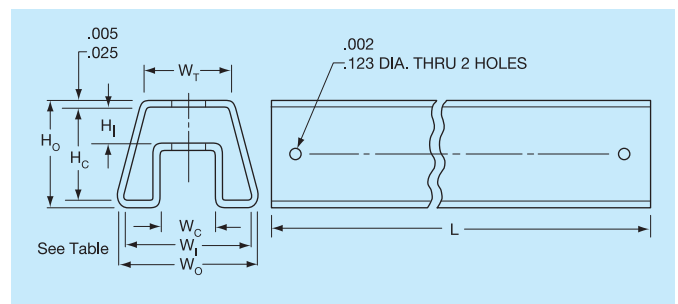
MD015 E 104MAB

Top of Unit:



### PACKAGING REQUIREMENTS

**Standard Packaging:** MD01/MD02: 200 pieces per slide pack.  
MD03: 200 pieces per vial.



#### Slide Package Dimensions

	MD01	MD02	MD03*
(HO) Overall Height	.400 ref.	.430 ref.	.545 ref.
(HC) Channel Height	.141 ± .006	.171 ± .006	.295 ± .010
(HI) Inside Height	.350	.380	.495
(WO) Overall Width	.540 ref.	.540 ref.	.600 ref.
(WI) Inside Width	.490	.490	.550
(WC) Channel Width	.210	.210	.170
(WT) Top Width	.350	.310	.300
(L) Length	20.073 ± .06	20.073 ± .06	20.073 ± .06

\*Optional

# TWO PIN DIP

DIPGuard®



## SIZE SPECIFICATIONS

Dimensions: Millimeters (Inches)

Style	Length (L)	Height (H <sub>1</sub> )	Height (H <sub>2</sub> )	Thickness
<b>MD01</b>	6.60 (.260 ± .020)	3.43 (.135 max.)	4.45 (.175 max.)	2.54 (.098 max.)
<b>MD02</b>	6.60 (.260 ± .020)	4.19 (.162 max.)	5.08 (.195 max.)	2.54 (.098 max.)
<b>MD03</b>	6.60 (.260 ± .020)	7.37 (.290 max.)	8.13 (.320 max.)	2.54 (.098 max.)

## MILITARY CROSS REFERENCE GUIDE

Note: For CKR22/23/24, see MIL-PRF-39014 section in the Military Section pages 58 thru 63.  
For CKS22/23/24 see MIL-PRF-123 section in the Military Section page 79.

Dimensions: Millimeters (Inches)

Style	MIL-PRF-39014	MIL-PRF-123	Length (L)	Height (H <sub>1</sub> )	Height (H <sub>2</sub> )	Thickness
MD01	CKR22	CKS22	6.60 (.260 ± .020)	3.43 (.135 max.)	4.45 (.175 max.)	2.54 (.092 ± .006)
MD02	CKR23	CKS23	6.60 (.260 ± .020)	4.19 (.162 max.)	5.08 (.195 max.)	2.54 (.092 ± .006)
MD03	CKR24	CKS24	6.60 (.260 ± .020)	7.37 (.290 max.)	8.13 (.320 max.)	2.54 (.092 ± .006)

## CAPACITANCE SPECIFICATIONS

### COG (NP0)

EIA Characteristic		COG (NP0)	
Style		MD01	
Cap. in. pF		WVDC	
		100	50
10	MD015A100KAB		
15	MD015A150KAB		
22	MD015A220KAB		
33	MD015A330KAB		
47	MD015A470KAB		
68	MD015A680KAB		
100	MD015A101KAB		
150	MD015A151KAB		
220	MD015A221KAB		
330	MD015A331KAB		
470	MD015A471KAB		
680	MD015A681KAB		
1000	MD015A102KAB		
1500	MD015A152KAB		
2200	MD015A222KAB		
3300	MD015A332KAB		
Style		MD02	
Cap. in. pF		WVDC	
		100	50
4700	MD025A472KAB		
6800	MD025A682KAB		
10000	MD025A103KAB		

For other voltages and tolerances see Part No. Codes.

### X7R

EIA Characteristic		X7R	
Style		MD01	
Cap. in. pF		WVDC	
		100	50
220	MD015C221KAB		
330	MD015C331KAB		
470	MD015C471KAB		
680	MD015C681KAB		
1000	MD015C102KAB		
1500	MD015C152KAB		
2200	MD015C222KAB		
3300	MD015C332KAB		
4700	MD015C472KAB		
6800	MD015C682KAB		
<b>10,000</b>	<b>MD011C103KAB</b>		
15,000	MD015C153KAB		
22,000	MD015C223KAB		
33,000	MD015C333KAB		
47,000	MD015C473KAB		
68,000	MD015C683KAB		
<b>100,000</b>	<b>MD015C104KAB</b>		
Style		MD02	
Cap. in. pF		WVDC	
		100	50
150,000	MD025C154KAB		
220,000	MD025C224KAB		
Style		MD03	
Cap. in. pF		WVDC	
		100	50
330,000	MD035C334KAA		
470,000	MD035C474KAA		
680,000	MD035C684KAA		
<b>1,000,000</b>	<b>MD035C105KAA</b>		
1,500,000	MD035C155KAA		
<b>2,000,000</b>	<b>MD035C205KAA</b>		

For other voltages and tolerances see Part No. Codes.

### Z5U

EIA Characteristic		X5U	
Style		MD01	
Cap. in. pF		WVDC	
		100	50
<b>10,000</b>	<b>MD015E103ZAB</b>		
15,000	MD015E153ZAB		
22,000	MD015E223ZAB		
33,000	MD015E333ZAB		
47,000	MD015E473ZAB		
68,000	MD015E683ZAB		
<b>100,000</b>	<b>MD015E104ZAB</b>		
150,000	MD015E154ZAB		
220,000	MD015E224ZAB		
<b>330,000</b>	<b>MD015E334ZAB</b>		
Style		MD02	
Cap. in. pF		WVDC	
		100	50
470,000	MD025E474ZAB		
Style		MD03	
Cap. in. pF		WVDC	
		100	50
680,000	MD035E684ZAA		
<b>1,000,000</b>	<b>MD035E105ZAA</b>		

For other voltages and tolerances see Part No. Codes.

\*Other capacitance values available upon special request.

= Industry preferred values

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## KYOCERA AVX:

[MD035C334KAA](#) [MD015C332KAB](#) [MD025C224KAB](#) [MD015C152KAB](#) [MD025C154KAB](#) [MD015A101KAB](#)  
[MD025A103KAB](#) [MD015A222KAB](#) [MD015A100KAB](#) [MD015C221KAB](#) [MD015C223KAB](#) [MD015E154ZAB](#)  
[MD035C474KAA](#) [MD015C472KAB](#) [MD015C471KAB](#) [MD011C103KAB](#) [MD015C103KAB](#) [MD015E224MAB](#)  
[MD015E224ZAB](#) [MD015E223MAB](#) [MD015C152MAB](#) [MD035E105MAA](#) [MD015E334ZAB](#) [MD015E333MAB](#)  
[MD015A102KAB](#) [MD011C332KAB](#) [MD015E473ZAB](#) [MD015E473MAB](#) [MD015A220JAB](#) [MD015A151KAB](#)  
[MD015A330KAB](#) [MD015A332KAB](#) [MD015C333KAB](#) [MD015C331KAB](#) [MD011A471KAB](#) [MD011C103JAB](#)  
[MD025A103FAB](#) [MD015A560KAB](#) [MD015A100JAB](#) [MD015A331JAB](#) [MD011A100KAB](#) [MD011A101JAB](#)  
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[MD015E223ZAB](#) [MD021C104KAB](#) [MD025G105ZAB](#) [MD015A680JAB](#) [MD015E154MAB](#) [MD011A151JAB](#)  
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