

# Metal Oxide Varistors



MVR Series  
Description

MERITEK

## FEATURES

- Fast response to rapidly rising surge voltage
- High performance clamping voltage characteristics
- Operating / storage temperature: -40 ~ +85°C / -40 ~ +125°C
- Varistor voltage: 18V to 1800 V

## APPLICATIONS

- Transistor, diode, IC, thyristor and triac semiconductor protection
- Surge protection in consumer electronics, industrial electronics, communication, home appliances
- Electrostatic discharge and noise spike suppression
- Relay and electromagnetic valve surge absorption



UL1414 E197475  
CSA 225125  
VDE 40013638  
UL1449 3rd Edition E326004

## PART NUMBERING SYSTEM

**MVR**    **05**    **D**    **471**    **K**    **Y**    **-S**

Meritek Series

Element Dia

CODE	05	07	10	14	18	20	25	32	40	53	34
mm	Ø5.0	Ø7.0	Ø10.0	Ø14.0	Ø18.0	Ø20.0	Ø25.0	Ø32.0	Ø40.0	Ø53.0	Ø34.0

CODE	D	S	A	X
	Disk or dual square	Single square	Bare	Special

Varistor Voltage

The first two digits are significant figures and the third one denotes the number of zeros following.

Decimal point is represented by R:

CODE	330	471	102
	$33 \times 10^0 = 33V$	$47 \times 10^1 = 470V$	$10 \times 10^2 = 1000V$

Tolerance

CODE	K	M	
	±10%	±20%	Customer special requirement

Lead Type

CODE	Blank	Q	G	Y	O	I
	Straight Wire: Less than 25mm Strap: More than 25mm	Strap	Wire	Y kink	Out kink	In kink

... - S High Surge

\* Notes: A suffix may be added to denote custom features.

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## • 05D SPECIFICATION

Part No.	Maximum Allowable Voltage		Varistor Voltage V@1ma (V)	Clamping Voltage (Max.)			Maximum Peak Current (8/20 $\mu$ s)(A)		Maximum Energy (10/1000 s J)		Rated Power (w)	Typical Capacitance @1KHz (pF)
	Acrms (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	standard	high surge	standard	high surge			
05D 180K	11	14	18(15~21)	40	1	100	250	0.4	0.6	0.01	1400	
05D 220K	14	18	22(20~24)	48				0.5	0.7		1150	
05D 270K	17	22	27(24~30)	60				0.6	0.9		930	
05D 330K	20	26	33(30~36)	73				0.8	1.1		760	
05D 390K	25	31	39(35~43)	86				0.9	1.2		640	
05D 470K	30	38	47(42~52)	104				1.1	1.5		530	
05D 560K	35	45	56(50~62)	123				1.3	1.8		450	
05D 680K	40	56	68(61~75)	150				1.6	2.2		370	
05D 820K	50	65	82(74~90)	145	5	400	800	2.5	4.0	0.10	300	
05D 101K	60	85	100(90~110)	175				3.0	4.1		250	
05D 121K	75	100	120(108~132)	210				4.0	4.9		210	
05D 151K	95	125	150(135~165)	260				4.8	6.5		165	
05D 181K	115	150	180(162~198)	320				5.9	7.5		140	
05D 201K	130	170	200(185~225)	355				6.5	8.5		125	
05D 221K	140	180	220(198~242)	380				7.0	9.0		110	
05D 241K	150	200	240(216~264)	415				8.0	10.5		100	
05D 271K	175	225	270(243~297)	475				8.5	11.0		95	
05D 301K	190	250	300(270~330)	520				9.0	12.0		85	
05D 331K	210	275	330(297~363)	570				9.5	13.0		75	
05D 361K	230	300	360(324~396)	620				10.0	16.0		70	
05D 391K	250	320	390(351~429)	675				12.0	17.0		65	
05D 431K	275	350	430(387~473)	745				13.0	20.0		60	
05D 471K	300	385	470(423~517)	810				15.0	21.0		55	
05D 511K	320	415	510(459~561)	845				16.0	22.5		50	
05D 561K	350	460	560(504~616)	920	16.0	24.0	45					

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## • 07D SPECIFICATION

Part No.	Maximum Allowable Voltage		Varistor Voltage V@1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 $\mu$ s)(A)		Maximum Energy (10/1000 s J)		Rated Power (w)	Typical Capacitance @1KHz (pF)
	Acrms (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	standard	high surge	standard	high surge		
07D 180K	11	14	18(15~21)	36	2.5	250	500	0.9	3.0	0.02	2800
07D 220K	14	18	22(20~24)	43				1.1	2.4		2300
07D 270K	17	22	27(24~30)	53				1.4	3.0		1800
07D 330K	20	26	33(30~36)	65				1.7	3.5		1500
07D 390K	25	31	39(35~43)	77				2.1	4.0		1300
07D 470K	30	38	47(42~52)	93				2.5	5.0		1100
07D 560K	35	45	56(50~62)	110				3.1	6.0		890
07D 680K	40	56	68(61~75)	135				3.6	7.0		740
07D 820K	50	65	82(74~90)	135	10	1200	1750	5.5	10.0	0.25	600
07D 101K	60	85	100(90~110)	165				6.5	12.0		500
07D 121K	75	100	120(108~132)	200				7.8	13.0		420
07D 151K	95	125	150(135~165)	250				9.7	13.0		330
07D 181K	115	150	180(162~198)	300				11.7	16.0		280
07D 201K	130	170	200(185~225)	340				13.0	17.0		250
07D 221K	140	180	220(198~242)	360				14.0	19.0		230
07D 241K	150	200	240(216~264)	395				15.0	21.0		210
07D 271K	175	225	270(243~297)	455				18.0	24.0		185
07D 301K	190	250	300(270~330)	500				20.0	26.0		165
07D 331K	210	275	330(297~363)	550				23.0	28.0		150
07D 361K	230	300	360(324~396)	595				25.0	32.0		140
07D 391K	250	320	390(351~429)	650				25.0	35.0		130
07D 431K	275	350	430(387~473)	710				28.0	40.0		115
07D 471K	300	385	470(423~517)	775				30.0	42.0		105
07D 511K	320	415	510(459~561)	845				30.0	45.0		100
07D 561K	350	460	560(504~616)	920	30.0	49.0	90				
07D 621K	385	505	620(558~682)	1025	33.0	55.0	80				
07D 681K	420	560	680(612~748)	1120	33.0	60.0	75				

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## • 10D SPECIFICATION

Part No.	Maximum Allowable Voltage		Varistor Voltage V@1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 $\mu$ s)(A)		Maximum Energy (10/1000 s J)		Rated Power (w)	Typical Capacitance @1KHz (pF)
	Acrms (V)	DC (V)		VC (V)	Ip (A)	standard	high surge	standard	high surge		
10D 180K	11	14	18(15~21)	36	5	500	1000	2.1	3.0	0.05	5600
10D 220K	14	18	22(20~24)	43				4500			
10D 270K	17	22	27(24~30)	53				3700			
10D 330K	20	26	33(30~36)	65				3000			
10D 390K	25	31	39(35~43)	77				2400			
10D 470K	30	38	47(42~52)	93				2100			
10D 560K	35	45	56(50~62)	110				1800			
10D 680K	40	56	68(61~75)	135				1500			
10D 820K	50	65	82(74~90)	135	25	2500	3500	12.0	17.0	0.4	1200
10D 101K	60	85	100(90~110)	165				1000			
10D 121K	75	100	120(108~132)	200				830			
10D 151K	95	125	150(135~165)	250				670			
10D 181K	115	150	180(162~198)	300				560			
10D 201K	130	170	200(185~225)	340				500			
10D 221K	140	180	220(198~242)	360				450			
10D 241K	150	200	240(216~264)	395				420			
10D 271K	175	225	270(243~297)	455				370			
10D 301K	190	250	300(270~330)	500				330			
10D 331K	210	275	330(297~363)	550				300			
10D 361K	230	300	360(324~396)	595				280			
10D 391K	250	320	390(351~429)	650				260			
10D 431K	275	350	430(387~473)	710				230			
10D 471K	300	385	470(423~517)	775				210			
10D 511K	320	415	510(459~561)	845				200			
10D 561K	350	460	560(504~616)	925				180			
10D 621K	385	505	620(558~682)	1025				160			
10D 681K	420	560	680(612~748)	1120				150			
10D 751K	460	615	750(675~825)	1240				130			
10D 781K	485	640	780(702~858)	1290	130						
10D 821K	510	670	820(738~902)	1355	120						
10D 911K	550	745	910(819~1001)	1500	110						
10D 102K	625	825	1000(900~1100)	1650	100						
10D 112K	680	895	1100(990~1210)	1815	90						

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## • 14D SPECIFICATION

Part No.	Maximum Allowable Voltage		Varistor Voltage V@1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 $\mu$ s)(A)		Maximum Energy (10/1000 s J)		Rated Power (w)	Typical Capacitance @1KHz (pF)
	Acrms (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	standard	high surge	standard	high surge		
14D 180K	11	14	18(15~21)	36	10	1000	2000	4.0	7.0	0.1	11100
14D 220K	14	18	22(20~24)	43				5.0	8.0		9100
14D 270K	17	22	27(24~30)	53				6.0	10.0		7400
14D 330K	20	26	33(30~36)	65				7.5	12.0		6100
14D 390K	25	31	39(35~43)	77				8.6	13.0		5100
14D 470K	30	38	47(42~52)	93				10.0	17.0		4300
14D 560K	35	45	56(50~62)	110				11.0	20.0		3600
14D 680K	40	56	68(61~75)	135				14.0	24.0		2900
14D 820K	50	65	82(74~90)	135	50	4500	6000	22.0	27.0	0.6	2400
14D 101K	60	85	100(90~110)	165				28.0	33.0		2000
14D 121K	75	100	120(108~132)	200				32.0	40.0		1700
14D 151K	95	125	150(135~165)	250				40.0	53.0		1300
14D 181K	115	150	180(162~198)	300				50.0	60.0		1100
14D 201K	130	170	200(185~225)	340				57.0	70.0		1000
14D 221K	140	180	220(198~242)	360				60.0	78.0		900
14D 241K	150	200	240(216~264)	395				63.0	84.0		830
14D 271K	175	225	270(243~297)	455				70.0	99.0		740
14D 301K	190	250	300(270~330)	500				77.0	108.0		670
14D 331K	210	275	330(297~363)	550				85.0	115.0		610
14D 361K	230	300	360(324~396)	595				93.0	130.0		560
14D 391K	250	320	390(351~429)	650				100.0	140.0		510
14D 431K	275	350	430(387~473)	710				115.0	155.0		460
14D 471K	300	385	470(423~517)	775				125.0	175.0		430
14D511K	320	415	510(459~561)	845				125.0	180.0		390
14D 561K	350	460	560(504~616)	925				125.0	185.0		360
14D 621K	385	505	620(558~682)	1025				125.0	190.0		320
14D 681K	420	560	680(612~748)	1120				130.0	200.0		290
14D 751K	460	615	750(675~825)	1240				143.0	210.0		270
14D 781K	485	640	780(702~858)	1290	148.0	220.0	260				
14D 821K	510	670	820(738~902)	1355	157.0	235.0	240				
14D 911K	550	745	910(819~1001)	1500	175.0	255.0	220				
14D 102K	625	825	1000(900~1100)	1650	190.0	280.0	200				
14D 112K	680	895	1100(990~1210)	1815	213.0	310.0	180				

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## • 20D SPECIFICATION

Part No.	Maximum Allowable Voltage		Varistor Voltage V@1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 $\mu$ s)(A)		Maximum Energy (10/1000 s J)		Rated Power (w)	Typical Capacitance @1KHz (pF)
	Acrms (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	standard	high surge	standard	high surge		
20D 180K	11	14	18(16~20)	36	20	2000	3000	11.0	13.0	0.2	28500
20D 220K	14	18	22(20~24)	43				14.0	16.0		18500
20D 270K	17	22	27(24~30)	53				16.0	19.0		13000
20D 330K	20	26	33(30~36)	65				23.0	24.0		11500
20D 390K	25	31	39(35~43)	77				26.0	28.0		8500
20D 470K	30	38	47(42~52)	93				30.0	34.0		7400
20D 560K	35	45	56(50~62)	110				41.0	41.0		6500
20D 680K	40	56	68(61~75)	135				46.0	49.0		5800
20D 820K	50	65	82(74~90)	135	100	6500	10000	38.0	56.0	1.0	4900
20D 101K	60	85	100(90~110)	165				45.0	70.0		4000
20D 121K	75	100	120(108~132)	200				55.0	85.0		3300
20D 151K	95	125	150(135~165)	250				70.0	106.0		2700
20D 181K	115	150	180(162~198)	300				85.0	130.0		2200
20D 201K	130	170	200(185~225)	340				95.0	140.0		2000
20D 221K	140	180	220(198~242)	360				100.0	155.0		1800
20D 241K	150	200	240(216~264)	395				108.0	168.0		1650
20D 271K	175	225	270(243~297)	455				127.0	190.0		1500
20D 301K	190	250	300(270~330)	500				136.0	210.0		1300
20D 331K	210	275	330(297~363)	550				150.0	228.0		1200
20D 361K	230	300	360(324~396)	595				163.0	255.0		1100
20D 391K	250	320	390(351~429)	650				180.0	275.0		1000
20D 431K	275	350	430(387~473)	710				190.0	305.0		930
20D 471K	300	385	470(423~517)	775				220.0	350.0		850
20D 511K	320	415	510(459~561)	845				220.0	360.0		780
20D 561K	350	460	560(504~616)	925				220.0	380.0		710
20D 621K	385	505	620(558~682)	1025				220.0	390.0		650
20D 681K	420	560	680(612~748)	1120				230.0	400.0		600
20D 751K	460	615	750(675~825)	1240				255.0	420.0		530
20D 781K	485	640	780(702~858)	1290				265.0	440.0		510
20D 821K	510	670	820(738~902)	1355				282.0	460.0		500
20D 911K	550	745	910(819~1001)	1500				310.0	510.0		440
20D 102K	625	825	1000(900~1100)	1650				342.0	565.0		400
20D 112K	680	895	1100(990~1210)	1815	383.0	620.0	360				

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	AC (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	I <sub>n</sub> .	I max.			
25D 201K	130	170	200(185~225)	340	150	10000	18000	190	1.2	3200
25D 221K	140	180	220(198~242)	360				200		2900
25D 241K	150	200	240(216~264)	395				220		2650
25D 271K	175	225	270(243~297)	455				255		2400
25D 301K	190	250	300(270~330)	500				275		2100
25D 331K	210	275	330(297~363)	550				300		1900
25D 361K	230	300	360(324~396)	595				330		1750
25D 391K	250	320	390(351~429)	650				360		1600
25D 431K	275	350	430(387~473)	710				380		1500
25D 471K	300	385	470(423~517)	775				400		1400
25D 511K	320	415	510(459~561)	845				420		1250
25D 561K	350	460	560(504~616)	925				440		1150
25D 621K	385	505	620(558~682)	1025				450		1050
25D 681K	420	560	680(612~748)	1120				460		950
25D 751K	460	615	750(675~825)	1240				510		850
25D 781K	485	640	780(702~858)	1290				530		800
25D 821K	510	670	820(738~902)	1355				570		750
25D 911K	550	745	910(819~1001)	1500				62		700
25D 102K	625	825	1000(900~1100)	1650				685		650
25D 112K	680	895	1100(990~1210)	1815				770		600

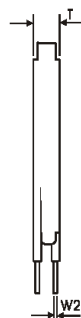
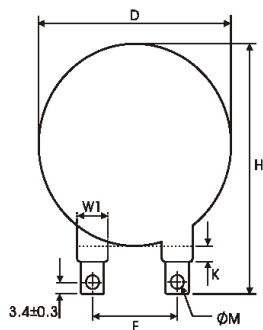


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Part No.	Maximum Allowable Voltage		Varistor Voltage V @1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 s)(A)		Max. Energy (10/1000 s J)	Rated Power (w)	Typical Capacitance (Reference) (pF) @1KHz
	AC (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	I <sub>n</sub>	I max.			
32D 201K	130	170	200(185~225)	340	200	15000	25000	250	1.4	5200
32D 221K	140	180	220(198~242)	360				270		5150
32D 241K	150	200	240(216~264)	395				290		5100
32D 271K	175	225	270(243~297)	455				300		4800
32D 301K	190	250	300(270~330)	500				330		4500
32D 331K	210	275	330(297~363)	550				360		4300
32D 361K	230	300	360(324~396)	595				380		3900
32D 391K	250	320	390(351~429)	650				400		3200
32D 431K	275	350	430(387~473)	710				430		3100
32D 471K	300	385	470(423~517)	775				460		2800
32D 511K	320	415	510(459~561)	845				510		2700
32D 561K	350	460	560(504~616)	920				570		2400
32D 621K	385	505	620(558~682)	1025				600		2200
32D 681K	420	560	680(612~748)	1120				620		2000
32D 751K	460	615	750(675~825)	1240				660		1900
32D 781K	485	640	780(702~858)	1290				700		1800
32D 821K	510	670	820(738~902)	1355				750		1300
32D 911K	550	745	910(819~1001)	1500				780		1200
32D 102K	625	825	1000(900~1100)	1650				810		1100
32D 112K	680	895	1100(990~1210)	1815				910		1000
32D 122K	750	990	1200(1080~1320)	1980	960	920				



	(mm)
D Max.	38.0
H Max.	56.3
W1±0.5	7.0
W2±0.1	0.5
M±0.2	3.8
F±1.0	25.4
T Max	Please check dimensions chart
K	≤ 5.0

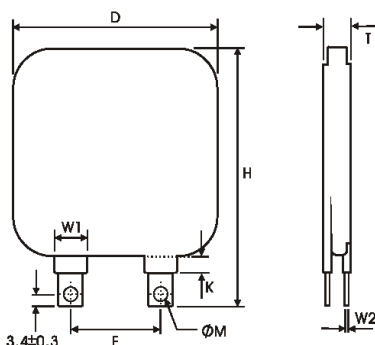


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Part No.	Maximum Allowable Voltage		Varistor Voltage V @1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 s)(A)		Max. Energy (10/1000 s J)	Rated Power (w)	Typical Capacitance (Reference) (pF) @1KHz
	AC (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	I <sub>n</sub>	I max.			
34S 201K	130	170	200(185~225)	340	300	20000	40000	400	1.4	6750
34S 221K	140	180	220(198~242)	360				6400		
34S 241K	150	200	240(216~264)	395				5650		
34S 271K	175	225	270(243~297)	455				5100		
34S 301K	190	250	300(270~330)	500				4510		
34S 331K	210	275	330(297~363)	550				4150		
34S 361K	230	300	360(324~396)	595				3750		
34S 391K	250	320	390(351~429)	650				3500		
34S 431K	275	350	430(387~473)	710				2950		
34S 471K	300	385	470(423~517)	775				2880		
34S 511K	320	415	510(459~561)	845				2650		
34S 561K	350	460	560(504~616)	925				2450		
34S 621K	385	505	620(558~682)	1025				2200		
34S 681K	420	560	680(612~748)	1120				2000		
34S 751K	460	615	750(675~825)	1240				1820		
34S 781K	485	640	780(702~858)	1290				1750		
34S 821K	510	670	820(738~902)	1355				1650		
34S 911K	550	745	910(819~1001)	1500				1500		
34S 951K	575	760	950(855~1045)	1500				1430		
34S 102K	625	825	1000(900~1100)	1650				1350		
34S 112K	680	895	1100(990~1210)	1815	1230					
34S 122K	750	990	1200(1150~1320)	1980	1135					



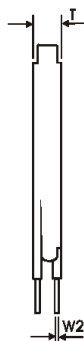
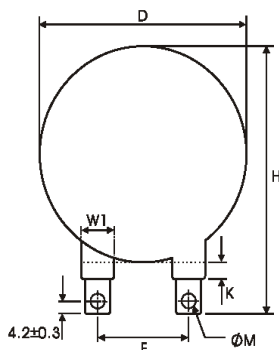
(mm)	
D Max.	36
H Max.	41
W1±0.5	7.0
W2±0.1	0.5
M±0.2	3.8
F±1.0	25.4
T Max	Please check dimensions chart
K	≤ 5.0

# Metal Oxide Varistors

MVR Series

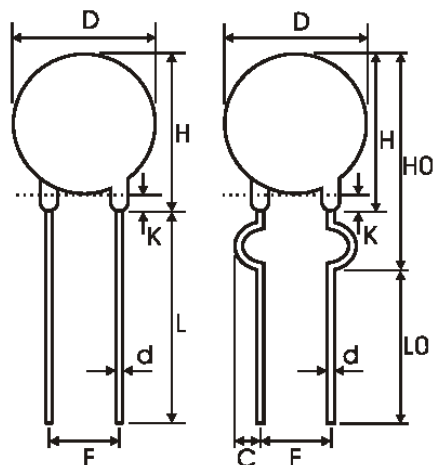
MERITEK

Part No.	Maximum Allowable Voltage		Varistor Voltage V @1ma (V)	Clamping Voltage (Max.)		Maximum Peak Current (8/20 s)(A)		Max. Energy (10/1000 s J)	Rated Power (w)	Typical Capacitance (Reference) (pF) @1KHz
	AC (V)	DC (V)		VC (V)	I <sub>p</sub> (A)	I <sub>n</sub>	I max.			
53D 201K	130	170	200(185~225)	340	500	30000	60000	550	1.6	15000
53D 221K	140	180	220(198~242)	360				600		13750
53D 241K	150	200	240(216~264)	395				650		12500
53D 271K	175	225	270(243~297)	455				700		11000
53D 301K	190	250	300(270~330)	500				760		10000
53D 331K	210	275	330(297~363)	550		35000	70000	825		9000
53D 361K	230	300	360(324~396)	595				850		8500
53D 391K	250	320	390(351~429)	650				885		7500
53D 431K	275	350	430(387~473)	710				990		7000
53D 471K	300	385	470(423~517)	775				1080		6500
53D511K	320	415	510(459~561)	845				1150		6000
53D 561K	350	460	560(504~616)	925				1230		5500
53D 621K	385	505	620(558~682)	1025				1300		5000
53D 681K	420	560	680(612~748)	1120				1350		4500
53D 751K	460	615	750(675~825)	1240				1400		4000
53D 781K	485	640	780(702~858)	1290				1450		3900
53D 821K	510	670	820(738~902)	1355				1600		3700
53D 911K	550	745	910(819~1001)	1500				1700		3300
53D 102K	625	825	1000(900~1100)	1650				1890		3000
53D 112K	680	895	1100(990~1210)	1815				2050		2700
53D 122K	750	990	1200(1080~1320)	1980	2050	2500				



	(mm)
D Max.	60
H Max.	78.2
W1±0.5	9.7
W2±0.1	0.7
M±0.2	4.15
F±1.0	25.4
T Max	Please check dimensions chart
K	≤ 5.0

## Dimensions:



K: 3.0 max. L0: 15.0 min. L: 20.0 min.

T Thickness (max)

(Unit:mm)

Part Code	05D	07D	10D	14D	20D	25D	32D	34S	53D
180K	4.5	4.5	4.6	4.6	4.8				
220K	4.6	4.6	4.7	4.7	4.9				
270K	4.7	4.7	4.8	4.8	5.3				
330K	4.9	4.9	5.0	5.0	5.5				
390K	4.8	4.8	5.3	5.3	5.5				
470K	4.9	4.9	5.4	5.4	5.6				
560K	5.0	5.0	5.5	5.5	5.7				
680K	5.2	5.2	5.6	5.6	5.8				
820K	4.1	4.1	4.7	4.7	4.9				
101K	4.3	4.3	4.9	4.9	5.1				
121K	4.5	4.5	5.1	5.1	5.3				
151K	4.8	4.8	5.4	5.4	5.6				
181K	4.3	4.3	4.8	4.8	5.0				
201K	4.4	4.4	5.0	5.0	5.2	5.4	6.2	6.4	6.3
221K	4.5	4.5	5.1	5.1	5.3	5.5	6.3	6.6	6.4
241K	4.6	4.6	5.2	5.2	5.4	5.6	6.4	6.7	6.5
271K	4.9	4.9	5.4	5.4	5.6	5.8	6.6	6.9	6.7
301K	5.0	5.0	5.5	5.5	5.7	5.9	6.8	7.1	6.8
331K	5.1	5.1	5.8	5.8	6.0	6.1	6.9	7.3	7.0
361K	5.2	5.2	6.0	6.0	6.2	6.6	7.3	7.6	7.2
391K	5.4	5.4	6.2	6.2	6.4	6.8	7.5	7.8	7.4
431K	5.7	5.7	6.5	6.5	6.7	7.0	7.5	8.0	7.6
471K	6.0	6.0	6.7	6.7	6.9	7.3	8.0	8.3	7.9
511K	6.2	6.2	6.8	6.8	7.0	7.4	8.0	8.7	8.1
561K	6.5	6.5	7.0	7.0	7.2	7.6	8.0	9.0	8.5
621K			7.1	7.3	7.5	8.0	8.0	9.4	8.8
681K			7.3	7.6	7.8	8.2	9.2	9.5	9.1
751K			8.0	8.0	8.2	8.5	9.0	10.0	9.5
781K			8.1	8.1	8.3	8.5	9.0	10.2	9.7
821K			8.3	8.3	8.5	9.0	9.5	10.8	9.9
911K			8.8	8.8	9.0	9.5	10.0	11.2	10.5
102K			9.3	9.3	9.5	9.7	11.2	11.2	11.3
112K			9.9	9.9	10.1	10.3	11.8	12.3	11.9

	D MAX	H MAX	H0 MAX	d ±0.1	F ±1.0	C ±0.4
05D	7.5	10.5	13.0	0.6	5	1.2
07D	9	12	13.5	0.6	5	1.2
10D	12.5	16.5	17.5	0.8	7.5	1.4
14D	16.5	20	21	0.8	7.5	1.4
20D	23	26.5	28	1.0	10	1.4
25D	28	32		1.0	10	