#### **General Specifications**



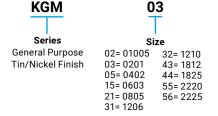


The X7R dielectric is the most popular of the intermediate EIA class II materials due to its relative temperature stability. While the capacitance change is non-linear, temperature variation is within ±15% from - 55°C to + 125°C.

Capacitance for X7R varies under the influence of electrical operating conditions such as voltage and frequency. X7R dielectric chip usage covers a broad spectrum of industrial applications where known changes in capacitance due to applied voltages are acceptable.

SpiCAT is an additional online resource that KAVX offers to help create engineering simulations. Please visit spicat. kyocera-avx.com for more information.

#### **HOW TO ORDER**



Α	R
Thickness	Diele
See Cap Chart	R7 =

ctric

1E Voltage 0G = 4.0V1H = 50V 0J = 6.3V2A = 100V1A = 10V 2D = 200V 1C = 16V 2E = 250V1E = 25V 2H = 500V

Capacitance Code Code (in pF) 2 Significant Digits + Number of zeros eg.  $106 = 10 \mu F$ 103 = 10nF

101

M Capacitance Tolerance

J\* = +/-5%K = +/- 10% M = +/-20%

\*≤1µF only, contact factory for additional values

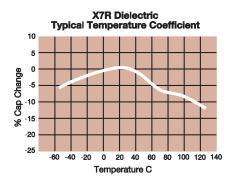
Ν **Packaging** 

See Table Below

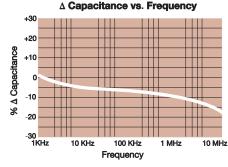
#### **PACKAGING CODES**

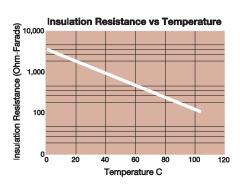
Code	EIA (inch)	IEC(mm)	7" Paper	7" Embossed	13" Paper	13"Embossed
02	01005	0402	Н			
03	0201	0603	Н		N	
05	0402	1005	Н		N	
15	0603	1608	Т		М	
21	0805	2012	Т	U	М	L
31	1206	3216	Т	U	М	L
32	1210	3225		U		L
43	1812	4532		V		S
44	1825	4564		V		S
55	2220	5750		V		S
56	2225	5763		V		s

<sup>\*</sup>Note: The thickness determines if packaging is paper or embossed.

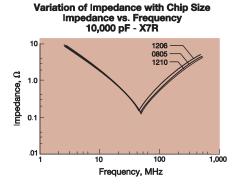


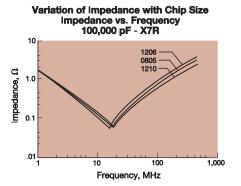
variation of impedance with Cap Value





Impedance vs. Frequency 1,000 pF vs. 10,000 pF - X7R 0805 10.00 1,000 pF mpedance, Ω 100 1000 Frequency, MHz





☑ KU□CER∃ | The Important Information/Disclaimer is incorporated in the catalog where these specifications came from or available online at www.kyocera-avx.com/disclaimer/ by reference and should be reviewed in full before placing any order.





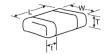
Par	rameter/Test	X7R Specification Limits	Measuring Conditions (Complies with JIS C5101 / IEC60384)						
Operating	Temperature Range	-55°C to +125°C	Temperature Cycle Chamber						
C	apacitance	Within specified tolerance	Measure after heat treatment						
			Capacitance Frequency Volt						
			C≤10μF Frequency : 1kHz±10%						
			Volt : 1.0±0.2Vrms *0.5±0.2Vrms						
Dissipat	tion Factor / Tanδ	Refer to https://spicat.kyocera-avx.com for	7011110-31211110 310201211110						
•		individual part number specification	C>10µF						
			Frequency: 120Hz±10%						
			Volt: 0.5±0.2Vrms						
			The charge and discharge current of the capacitor must not exceed 50mA.  Apply the rated voltage for 1 minute, and measure it in normal tempera-						
Insula	tion Resistance	Refer to https://spicat.kyocera-avx.com for	ture and humidity. The charge and discharge current of the capacitor must						
moula	tion regionalise	individual part number specifiction	not exceed 50mA.						
			Charge device with 250% of rated voltage for 1-5 seconds, w/charge and						
Diele	ectric Strength	No breakdown or visual defects	discharge current limited to 50 mA (max)						
			Note: Charge device with 150% of rated voltage for 500V devices.						
Ben	ding Strength	No significant damage with 1mm bending	Glass epoxy PCB: Fulcrum spacing: 90mm, duration time 10 seconds.						
s	olderability	Solder coverage : 95% min.	Soaking condition Sn-3Ag-0.5Cu 245±5°C 3±0.5 sec.						
	Appearance	No problem observed	Take the initial value after heat treatment.						
	Capacitance Variation	≤ ±7.5%	Soak the sample in 260°C±5°C solder for 10±0.5 seconds and place in nor-						
	Dissipation Factor / Tanδ	Within specification	mal temperature and humidity, and measure after heat treatment.						
Resistance to	Insulation Resistance	Within specification	(Pre-heating conditions)						
Solder Heat	ilisulation Resistance	within specification	Order Temperature Time						
	Withstanding Voltage /		1 80 to 100°C 2 minutes 2 150 to 200°C 2 minutes						
	Withstanding Voltage / Dielectric Strength	Resist without problem	The charge and discharge current of the capacitor must not exceed 50mA						
	Dicieotiio oti erigiii		for IR and withstanding voltage measurement.						
	Appearance	No visual defects	Take the initial value after heat treatment.						
	Capacitance Variation	≤ ±7.5%	(Cycle)						
	Dissipation Factor	Within specification	Room temperature (3 min.)—> Lowest operation temperature (30 min.)—>						
Thermal Shock	Insulation Resistance	Within specification	Room temperature (3 min.) ->						
			Highest operation temperature(30 min.)						
	Withstanding Voltage /	Resist without problem	After 5 cycles, measure after heat treatment.						
	Dielectric Strength	Resist without problem	The charge and discharge current of the capacitor must not exceed 50mA						
	Appearance	No visual defects	for IR and withstanding voltage measurement.  Take the initial value after heat treatment.						
		≤ ±12.5%	After applying *1.5 the rated voltage at the highest operation						
	Capacitance Variation		temperature for 1000+12/ -0 hours, and measure the sample after heat						
Load Life	Dissipation Factor / Tanδ	≤ Initial Value x 2.0 (See Above)	treatment in normal temperature and humidity.						
		Over $1000M\Omega$ or $50M\Omega \cdot \mu$ F, whichever is less.	The charge and discharge current of the capacitor must not exceed						
	Insulation Resistance	*Exceptions Listed Below	50mA for IR measurement.  *Apply 1.0 times when the rated voltage is 4V or less. Applied voltages						
			for respective products are indicated in the chart below.						
	Appearance	No visual defects	Take the initial value after heat treatment.						
	Capacitance Variation	≤ ±12.5%	After applying rated voltage for 500+12/ -0 hours in the condition of						
Load	Dissipation Factor / Tanδ	Within specification	40°C ± 2°C and 90 to 95%RH, and place in normal temperature and						
Humidity	Insulation Resistance	Over $1000M\Omega$ or $50M\Omega \cdot \mu$ F, whichever is less.	humid- ity, then measure the sample after heat treatment.  The charge and discharge current of the capacitor must not exceed						
	ilisulation Resistance	*Exceptions Listed Below	50mA for IR measurement.						
A	ppearance	No problem observed	Microscope						
Tormi	nation Strength	No problem observed	Apply a sideward force of 500g (5N) to a PCB-mounted sample. note :						
i ei iiii	-	'	2N for 0201 size, and 1N for 01005 size.						
	Appearance	No problem observed	Take the initial value after heat treatment.						
	Capacitance	Within tolerance	Vibration frequency: 10 to 55 (Hz)  Amplitude: 1.5mm						
Vibration			Sweeping condition: 10 -> 55 -> 10Hz/ 1 minute in X, Y and Z						
	Tanδ	Within tolerance	directions: 2 hours each, 6 hours in total, and place in normal temperature						
			and humidity, then measure the sample after heat treatment.						
Hea	at Treatment	Expose sample in the temperature of 150+0/ -	-10°C for 1 hour and leave the sample in normal temperature and humidity for						
		24±2 hours.							

Voltage to be applied in the High Temperature Load (Applied voltage is the multiple of the rated voltage)

Rated Voltage		Products
×1.0	16V	KGM21AR71C475
<load h<="" life="" load="" th=""><th>lumidit</th><th>y&gt;Insulation Resistance : Over 10MΩ·μF</th></load>	lumidit	y>Insulation Resistance : Over 10MΩ·μF
	05	KGM05AR70J474
R7	15	KGM15AR71E105
K/	21	KGM21AR71C475
	31	KGM31AR71E106, KGM31AR71H475

### **Capacitance Range**





SIZE	01005			0201					0603							0805								1206														
Soldering	Reflow Only		Ref	low (	Only			R	eflow	//Wa	/e				R	eflow	/Wa	ve			Reflow/Wave									Reflow/Wave								
Packaging	All Paper		Α	II Pap	er				All P	aper					Pap	er/Er	nbos	sed					F	aper	/Emt	osse	:d			Paper/Embossed								
(L) Length mn				0 ± 0					1.00 :							1.60 ±									11 ± 0					3.20 ± 0.30								
· · · · (III.	/ /	-		24 ± 0					.040 :							.063 ±								(0.07						(0.126 ± 0.012)								
W) Width mn				30 ± 0	1.03 1.001)				0.50 : .020 :				0.81 ± 0.15 (0.032 ± 0.006)												25 ± 0					1.60 ± 0.30 (0.063 ± 0.012)								
mn	/ ` /	1	`	5 ± 0									0.35 ± 0.15									(0.049 ± 0.008) 0.50 ± 0.25														-		
(t) Terminal (in.				06 ± 0						.25 ± 0.15 .10 ± 0.006)									(0.020 ± 0.010)									0.50 ± 0.25 (0.020 ± 0.010)										
WVDC	16	6.3	10	16	25	50	6.3	10	16	25	50	100	6.3	10	16	25	50	100	200	250	6.3	10	16	25	50	100	200	250	500	6.3	10	16	25	50	100	200	250	500
Cap 100 101	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В									В									
(pF) 150 151	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В						İ			В									
220 221	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
330 331	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
470 471	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
680 681	1 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
1000 102	2 A	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
1500 152	2 A	Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
2200 222		Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	N	N	В	В	В	В	В	В	В	Т	Т	D
3300 332		Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	Т	Т	D
3900 392	+	Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	Т	Т	D
4700 472	+	Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	Т	Т	D
5600 562		Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	Т	Т	D
6800 682		Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	Т	T	D
Cap 0.010 103		Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	D	D	D
(μF) 0.012 123	+			_			Α	Α	Α	Α	Α		Α	Α	Α	Α	Α	Α	В	В		N	N	N	N	N	Α	Α	Α	В	В	В	В	В	В	D	D	D
0.015 153		_					Α	Α	Α	Α	Α		Α	Α	Α	Α	Α	В	В	В		N	N	N	N	Α	Α	Α	Α	В	В	В	В	В	В	D	D	D
0.018 183						_	Α	Α	Α	Α	Α	<u> </u>	Α	Α	Α	Α	Α	В	В	В	<u> </u>	N	N	N	N	Α	Α	Α	Α	В	В	В	В	В	В	D	D	D
0.022 223		Α	Α	Α	_		Α	Α	A	Α	Α	<u> </u>	A	Α	Α	Α	Α	В	В	В		N	N	N	N	Α	Α	Α	Α	В	В	В	В	В	В	D	D	Α
0.027 273		-	_				Α	A	A	A	A	<u> </u>	A	Α	Α	Α	В	B		-	-	N	N	N	N	Α	A	Α		В	В	В	В	В	В	D	D	Α
0.033 333	+	-		-		_	Α	A	A	A	A	<u> </u>	A	A	A	В	В			-	-	N	N	N	N	A	A	A		В	В	В	В	В	В	A	Α	Α
0.039 393							A	A	A	A	A	_	A	A	Α	В	В	В	_	-	-	N	N	N	N	A	A	A		В	В	В	В	B B	В	A	A	A
0.047 473							A		_	-	A C	_	A	A	A	В	В	В		-	-	N	N	N	N	A	A	А		В	В	В	В	В	D	A	_	A
0.082 823		$\vdash$		-			A	A	A	A	C	$\vdash$	A	A	A	В	В	В	_	-	$\vdash$	N	N	N	N	A	A			В	В	В	В	В	D	A	A	-
0.082 823		Α					A	A	A	A	C	$\vdash$	A	A	A	В	В	В				N	N	N	N	A	A			В	В	В	В	В	D	A	A	$\dashv$
0.12 124							Α	Α.		Α.	-0		A	A	A	В	В	, D		$\vdash$	$\vdash$	N	N	N	E	A	_			В	В	В	В	В	D	A	A	$\dashv$
0.15 154	_						Α	Α	Α	Α			A	A	A	В	В					E	E	E	E	A				٧	V	V	М	М	A	A	A	$\dashv$
0.22 224		$\vdash$					A	A	A	A			A	В	В	В	В				H	A	A	A	A	A				V	V	V	M	M	A	A	Α	$\dashv$
0.33 334	_											$\vdash$	В	В	В	В	В				T	A	A	A	A	A				v	V	V	М	P	A			$\dashv$
0.47 474							Α	Α					В	В	В	В	В					A	A	A	A	A				H	H	H	H	H	A			$\dashv$
0.68 684	-												В	В	В							Α	A	A	A	A				Н	Н	Н	Н	Н	H			$\dashv$
1.0 105							Α	Α					В	В	В	Α	С					Α	A	Α	A	A				Н	Н	Н	Н	Н	Н			$\neg$
2.2 225													В	В	C						T	Α	Α	Α	Α					Н	Н	Н	Н	Н	Н			$\exists$
4.7 475													С									Α	Α	Α						Н	Н	Н	Н	Α				$\neg$
10 106	+																				Α	Α	Α							Н	Н	Α	Α	Н				$\neg$
22 226	+																										İ			Α	Α							$\neg$
47 476	5																																					$\neg$
100 107	+																																					$\neg$
WVDC	16	6.3	10	16	25	50	6.3	10	16	25	50	100	6.3	10	16	25	50	100	200	250	6.3	10	16	25	50	100	200	250	500	6.3	10	16	25	50	100	200	250	500
SIZE	01005			0201																	0805											1206						
		_				0402 0603																							_		_		-					

Case Size	01005 (KGM 02)	0201 (KGM03)	0402 (F	(GM05)	06	03 (KGM	15)	080	)5 (KGM:	21)	1206 (KGM31)											
Thickness Letter	Α	Α	Α	С	Α	В	С	N	Е	Α	В	٧	М	Т	Р	D	Α	Н				
Max Thickness (mm)	0.22	0.33	0.55	0.70	0.90	0.95	1.00	1.00	1.35	1.45	0.94	1.22	1.25	1.35	1.40	1.45	1.80	1.90				
Carrier Tape	PAPER	PAPER	PAI	PER	PAPER	PAPER	PAPER	PAPER	EMB	EMB	PAPER	EMB										
Packaging Code 7"reel	Н	Н	Н	Н	T	T	T	T	U	U	T	U	U	U	U	U	U	U				
Packaging Code 13"reel	n/a	N	N	N	М	М	М	М	L	L	М	L	L	L	L	L	L	L				
			EMBOSSED (EMB)																			





SIZE					1210				1812						1825						2220								
Soldering	g			Re	flow Or	nly					Reflo	v Only				Reflov	v Only			Re	flow Or	nly		Reflow Only					
Packagin	g			Pape	r/Embc	ssed					All Em	bossed				All Eml	ossed			All	Emboss	sed			All Emi				
(L) Length	mm (in.)				.30 ± 0.							± 0.40 ± 0.016	١		,		± 0.40 ± 0.016)				70 ± 0.5 24 ± 0.0				5.70		,		
	mm				50 ± 0.0							± 0.010,				6.40					00 ± 0.4			(0.224 ± 0.016) 6.30 ± 0.40					
W) Width	(in.)				98 ± 0.0							± 0.016	)		(		± 0.016)				97 ± 0.0			(0.248 ± 0.016)					
(t) Terminal	mm			0.	50 ± 0.2	25					0.61 :	± 0.36				0.61 :	£ 0.36			0.	64 ± 0.3	0.64 ± 0.39							
· ·	(in.)			_	20 ± 0.0						`	± 0.014					± 0.014)				25 ± 0.0	(0.025 ± 0.015)							
Cap 100	NVDC	10	16	25	50	100	200	500	16	25	50	100	200	500	50	100	200	500	25	50	100	200	500	50	100	200	500		
(pF) 150	101 151																					-		~	-W				
220	221	R	R	R	R	R	R	D														- 🎺	-	, —	) ÎT				
330	331	R	R	R	R	R	R	D	Α	Α	Α	A	Α	Α								- (	$\overline{}$		D ±				
470	471	R	R	R	R	R	R	D	A	A	A	A	A	A								_	<u> </u>						
680	681	R	R	R	R	R	R	D	A	A	A	A	A	A								-	. 17	1					
1000	102	R	R	R	R	R	R	D	A	A	A	A	A	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
1500	152	R	R	R	R	R	R	D	A	A	A	A	A	В	C	С	C	C	Z	Z	Z	Z	Z	D	D	D	D		
2200	222	R	R	R	R	R	R	D	A	A	A	A	A	В	C	C	C	C	Z	Z	Z	Z	Z	D	D	D	D		
3300	332	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
3900	392	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
4700	472	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
5600	562	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
6800	682	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
Cap 0.010	103	R	R	R	R	R	R	E	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
(μF) 0.012	123	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.015	153	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.018	183	R	R	R	R	R	R	Е	Α	Α	Α	Α	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.022	223	R	R	R	R	R	E	E	Α	Α	Α	A	Α	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.027	273	R	R	R	R	R	E	H	A	A	A	A	A	В	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.033	333 393	R R	R R	R R	R R	R R	E E	H	A	A	A	A	A	B B	C	C	C	C	Z	Z Z	Z	Z Z	Z	D D	D D	D D	D D		
0.039	473	R	R	R	R	R	E	Н	A	A	A	A	B	В	С	C	C	С	Z	Z	Z	Z	Z	D	D	D	D		
0.047	683	R	R	R	R	R	Н	Р	A	A	A	A	В	F	С	С	С	C	Z	Z	Z	Z	Z	D	D	D	D		
0.082	823	R	R	R	R	R	Н.	P	A	A	A	A	В	F	C	C	С	C	Z	Z	Z	Z	Z	D	D	D	D		
0.100	104	R	R	R	R	R	H	P	A	A	A	В	В	F	С	C	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.120	124	R	R	R	R	R	Н		A	A	A	В	В	J	C	C	С	C	Z	Z	Z	Z	Z	D	D	D	D		
0.150	154	E	Е	E	E	E	L		Α	Α	Α	В	F	J	С	C	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.220	224	Е	Е	Е	Е	Е	L		Α	Α	Α	В	F	J	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.330	334	Е	Е	Е	Е	Н	L		Α	Α	Α	В	F	J	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.470	474	Е	Е	Е	Е	L	L		Α	Α	Α	F	F	J	С	С	С	С	Z	Z	Z	Z	Z	D	D	D	D		
0.680	684	Е	Е	Е	Е	L	L		F	F	F	F	J		С	С	С		Z	Z	Z	Z	С	D	D	D	G		
1.000	105	Е	Е	Е	Е	L			F	F	F	F	J		С	С	С		Z	Z	Z	Z	D	D	D	D			
2.200	225	L	L	L	L	L			F	F	F	J			С	С	F		Z	Z	Z	С		D	D	G			
4.700	475	L	L	L	L				J	J	J	J			С	F			Z	Z	Z			D	G				
10	106	L	L	L	Α				J	J	J				F	F			С	С	D			G	G				
22	226	L	Α	L															D	D	Н								
47	476	L																											
100	107	10	16	٥٢		100	000	F00	1.0	0.5		100	000	F00	F0.	100	000	F00	0.5	F0.	100	000	500		100	000	F00		
WVDC SIZE		10	16	25	50 1210	100	200	500	16	25	50	100	200	500	00 50 100 200 500					0 25 50 100 200 500						00 50 100 200 500 2225			
SIZE					1210						18	12				18	۷3				2220					۷3			

Case Size			121	10 (KGM	32)				1812 (K	GM 43)		1825 (K	(GM 44)		2220 (K	2225 (KGM56)			
Thickness Letter	R	D	E	Н	Р	Α	L	Α	В	F	J	С	F	Z	С	D	Н	D	G
Max Thickness (mm)	1.05	1.4	1.45	1.8	2.2	2.70	2.80	1.4	1.45	2.21	2.80	2.21	2.80	2.21	2.80	3.3	3.4	2.21	2.80
Carrier Tape	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB	EMB
Packaging Code 7"reel	U	U	U	U	U	U	U	V	V	٧	V	V	٧	٧	V	٧	V	V	V
Packaging Code 13"reel	L	L	L	L	L	L	L	S	S	S	S	S	S	S	S	S	S	S	S
									EMB	OSSED(E	MB)								