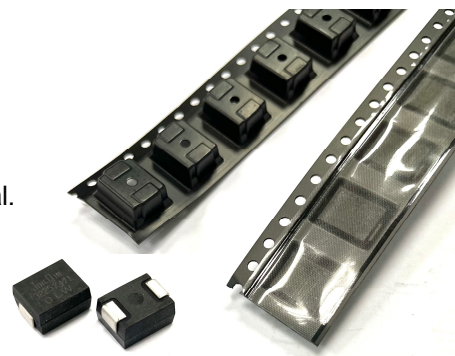


Descriptions:

SMD disk varistors are disk shaped varistors that are encapsulated in a plastic housing. They are suitable for SMD assembly. The encapsulation is made of flame-retardant material.



Features:

1. Encapsulation: Thermoplastic, flame-retardant to UL 94 V-0.
2. Electrical equivalents to leaded types: 7D Series
3. SMD plastic package, available in tape and reel
4. Lead free and RoHS and REACH compliant.
5. Good solderability

Approvals:

CQC no.: V2021CQC001008-783237
V2021CQC001008-783234
TUV no: 6810021002201
6810021002301
UL no.: 4789854187 (Temp. no.)(Under review)



How to Order:

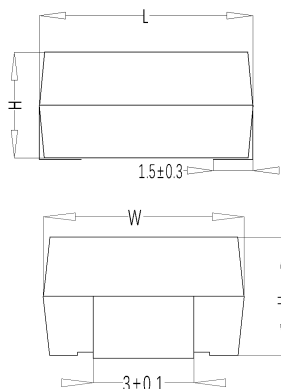
JQ	3225	K	471	G2
↓	↓	↓	↓	↓
Series Name	Case size: 3225 8.2 x 6.3 mm	Voltage Tol. K=±10%	V1mA 47*10 ¹ =470V	Taping Mode: G2=Taped, 380mm plastic Reel 1820pcs / Reel

General Technical Data:

Operating temperature	-55 - +125	°C
Storage temperature	-55 - +125	°C
Coating Insulation Voltage Capability	≥ 2.5	K _V RMS
Coating Insulation Resistance	≥ 100	MΩ

Product Dimensions:

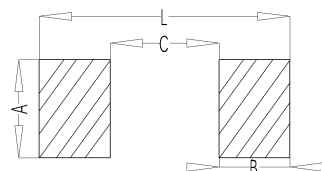
Dimensional drawing



Dimensions in mm

Chip size	V _{RMS,max}	L	W	H
3225	201-681	8.2 ± 0.3	6.3 ± 0.3	3.8 ± 0.3
	751-821			5.2 ± 0.3

Recommended solder pad layout



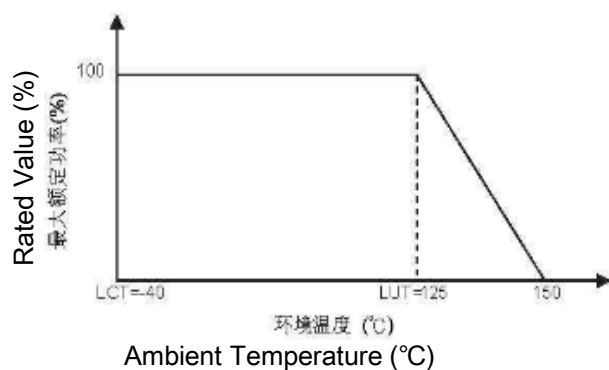
Dimensions in mm

Chip size	A	B	C	L
3225	3.5	2.8	4.5	10.1

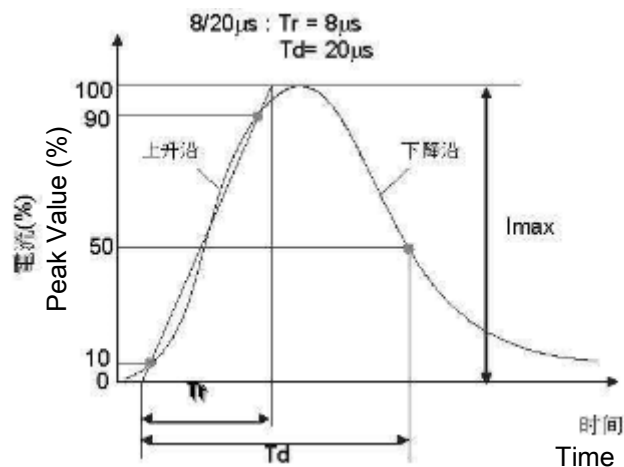
Ratings and Specifications:

TYPE	Varistor Voltage	Maximum Rating					Maximum Clamping		Rated	Typical
	(@1mA DC)	Continuous		Transient			Voltage		Power	Capacitance
	V _{1mA}	V _{AC}	V _{DC}	Energy	Peak Current (8/20μs)		(8/20μs)			@1KHZ
	(V)	(V)	(V)	10 x 1000μs (J)	I max (A)	40 times (KV/KA)	V _p (V)	I _p (A)	P (W)	C (PF)
3225K201	200(180-220)	130	170	11	1200	2KV/1KA	340	10	0.25	200
3225K221	220(198-242)	140	180	12	1200	2KV/1KA	360	10	0.25	180
3225K241	240(216-264)	150	200	13	1200	2KV/1KA	395	10	0.25	170
3225K271	270(243-297)	175	225	15	1200	2KV/1KA	455	10	0.25	150
3225K301	300(270-330)	195	250	17	1200	2KV/1KA	500	10	0.25	150
3225K331	330(297-363)	210	275	18	1200	2KV/1KA	550	10	0.25	150
3225K361	360(324-396)	230	300	20	1200	2KV/1KA	595	10	0.25	115
3225K391	390(351-429)	250	320	21	1200	2KV/1KA	650	10	0.25	105
3225K431	430(387-473)	275	350	23	1200	2KV/1KA	710	10	0.25	95
3225K471	470(423-517)	300	385	25	1200	2KV/1KA	775	10	0.25	90
3225K511	510(459-561)	320	410	25	1200	2KV/1KA	845	10	0.25	85
3225K561	560(504-616)	350	450	26	1200	2KV/1KA	930	10	0.25	80
3225K621	620(558-682)	395	510	28	1200	2KV/1KA	1020	10	0.25	78
3225K681	680(612-748)	420	560	30	1200	2KV/1KA	1120	10	0.25	75
3225K751	750(675-825)	460	615	32	1200	2KV/1KA	1235	10	0.25	70

Peak Current, Energy and Power Derating Curve

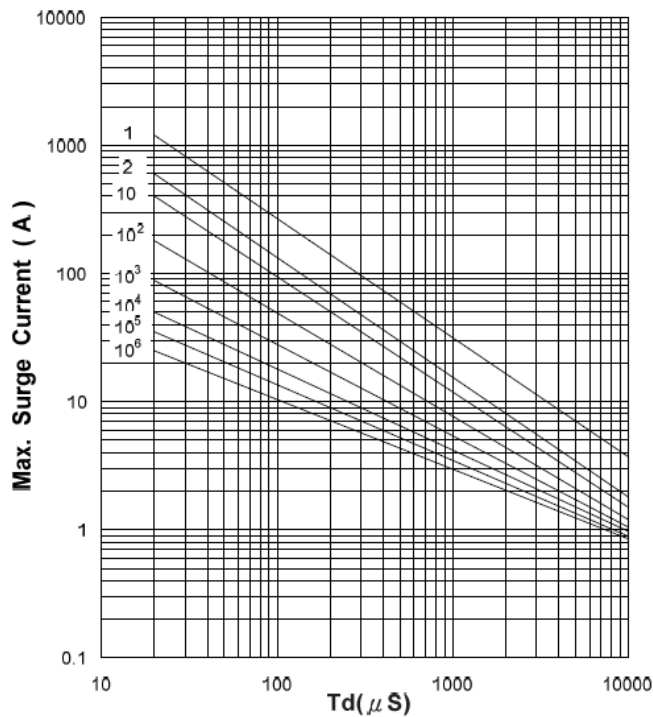


Peak Pulse Current Test Waveform for Clamping Voltage

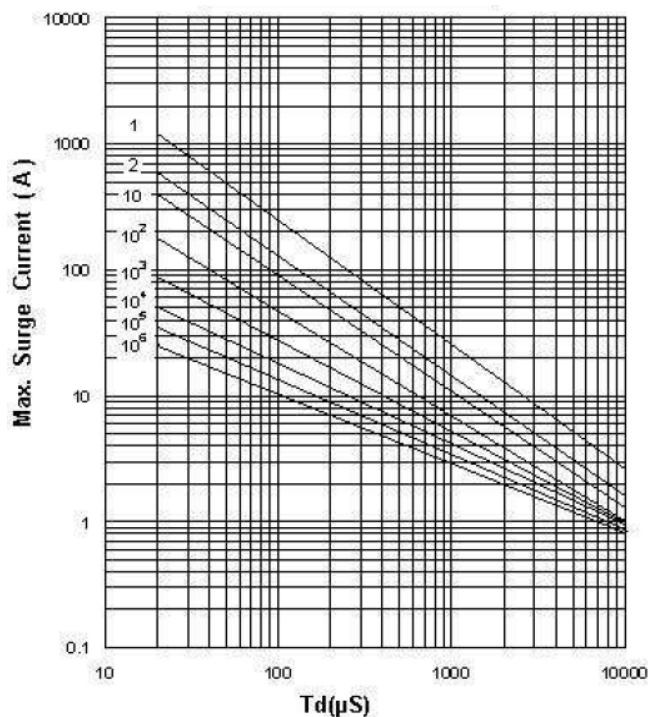


Derating Curves:

3225K201-3225K471

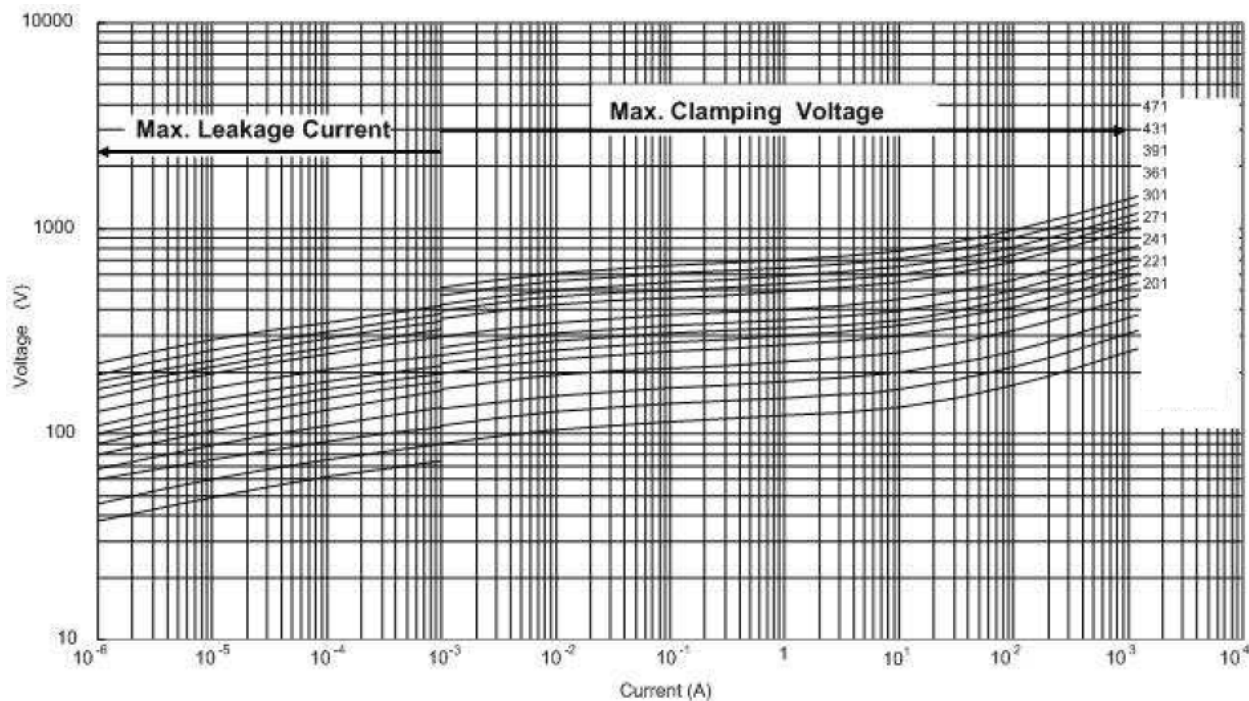


3225K511-3225K821

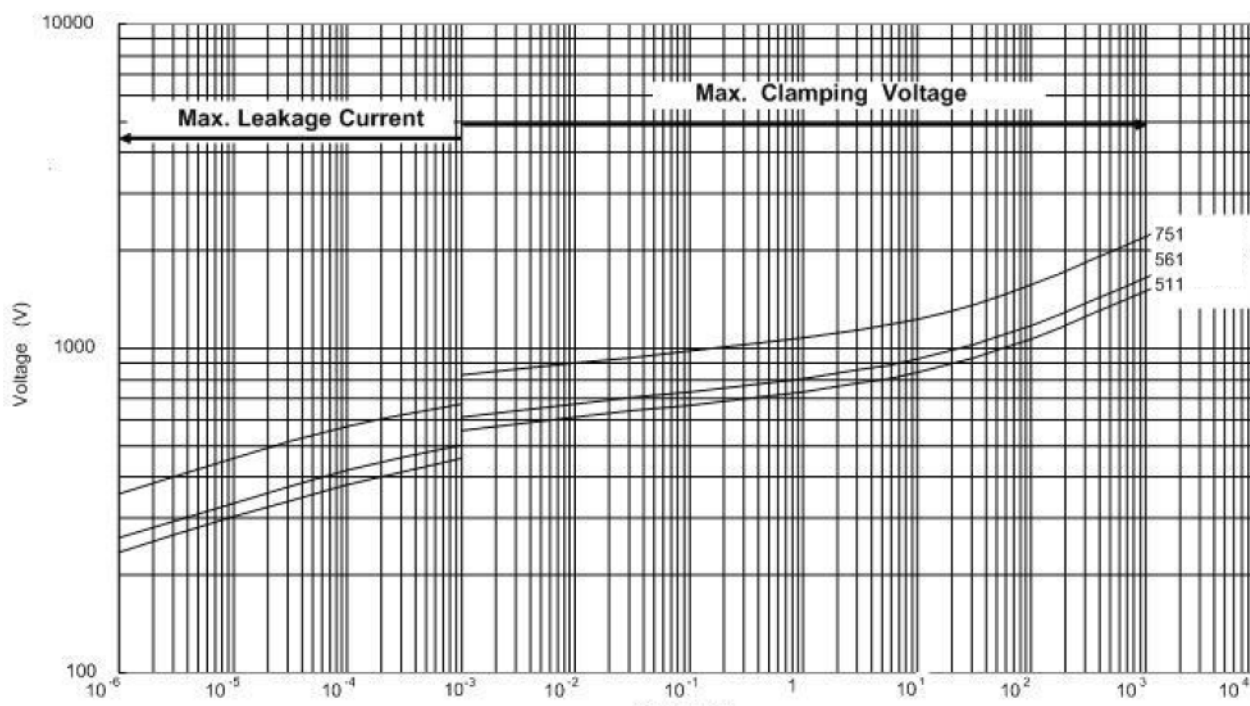


V/I Characteristics:

3225K201- 3225K471

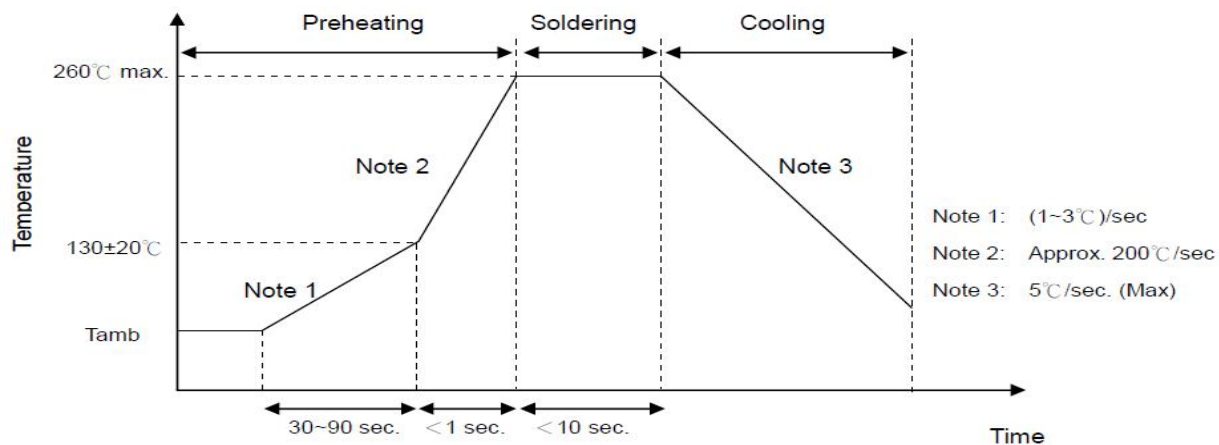


3225K511-3225K751



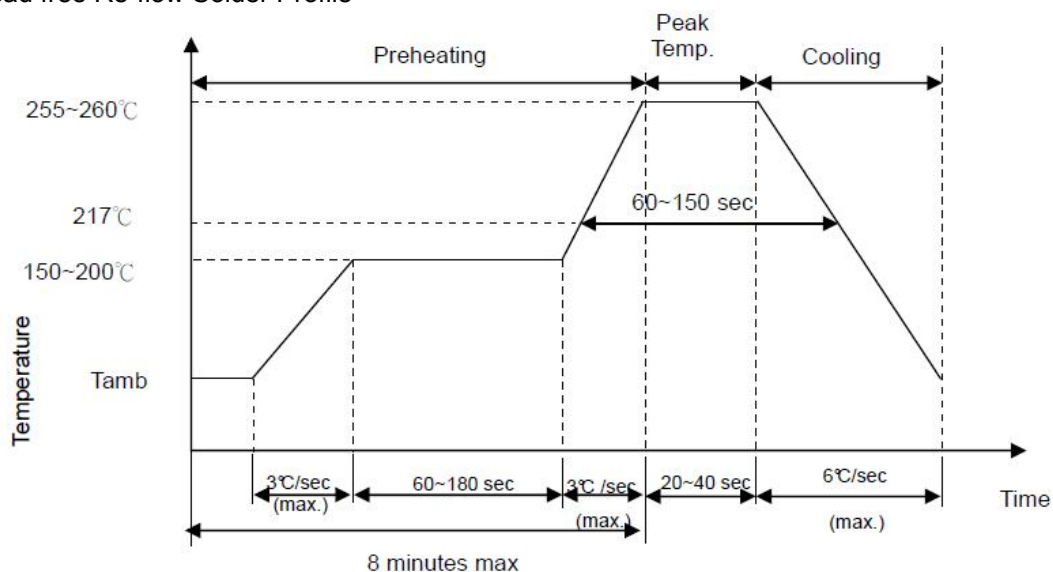
Lead (Pb) Soldering Recommendations:

Wave Solder Profile



Lead-free (Pb-free) Soldering Recommendations:

Lead free Re-flow Solder Profile



Environmental Specifications:

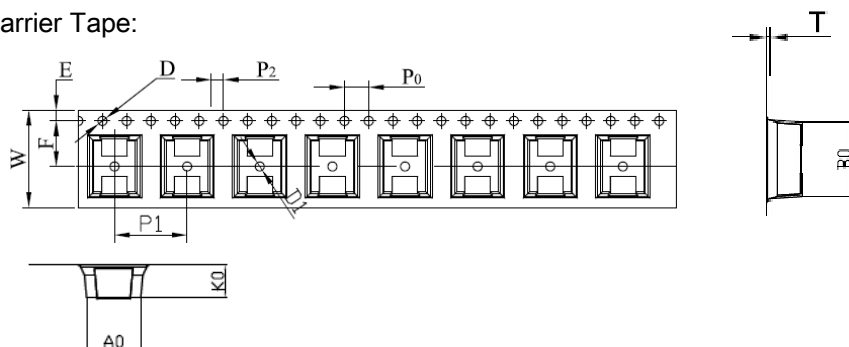
Maximum Soldering-iron head Temperature	360	$^{\circ}\text{C}$
Time within	3	s
Maximum Soldering bit diameter	$\Phi 3$	mm

Reliability Data:

Test	Standard	Test Methods/Conditions	Requirement															
Vibration	IEC 1051-1	Amplitude: 0.75mm or 98 m/s ² Frequency range: 10Hz - 55Hz-10Hz Duration: 6h (3*2h) After repeatedly applying a single harmonic vibration according to the table above. The change of Vv shall be measured and the specimen shall be visually examined.	$I \Delta V/V_{1mA} \leq 5\%$ No visible damage															
Solderability	IEC 60068-2-20	Solder bath T= 235°C±5°C t= 2s	The terminations shall be uniformly tinned for soldering test.															
Resistance to soldering heat	IEC 60068-2-20	Solder bath T: 350 °C±10 °C d= 10 ± 1s	$I \Delta V/V_{1mA} \leq 5\%$ No visible damage															
High Temp. Storage	IEC 60068-2-2	The specimen shall be stored at 125 ± 5°C for 1000h, then stored at room temperature for 1 to 2h. Thereafter, the change of varistor voltage shall be measured.	$I \Delta V/V_{1mA} \leq 5\%$															
Damp heat., steady state	IEC60068-2-3	1. The specimen shall be subjected to 40 ± 2°C, 95% R.H. for 1000h. 2. The specimen shall be subjected to 40 ± 2°C, 95% R.H., with maximum continuous DC operating voltage V _{DC} for 1000h.	$I \Delta V/V_{1mA} \leq 10\%$ Rins≥100MΩ No visible damage															
Rapid change of temperature	IEC 60068-2-14	Dwell time 30 mins. 5 cycles, then stored at room temperature for 1 to 2h. Thereafter, the change of Varistor voltage shall be measured. <table><tr><th>Step</th><th>Temperature(°C)</th><th>Period(minutes)</th></tr><tr><td>1</td><td>-40±3</td><td>30±3</td></tr><tr><td>2</td><td>Room temperature</td><td>5±3</td></tr><tr><td>3</td><td>+125±2</td><td>30±3</td></tr><tr><td>4</td><td>Room temperature</td><td>5±3</td></tr></table>	Step	Temperature(°C)	Period(minutes)	1	-40±3	30±3	2	Room temperature	5±3	3	+125±2	30±3	4	Room temperature	5±3	$I \Delta V/V_{1mA} \leq 5\%$ No visible damage
Step	Temperature(°C)	Period(minutes)																
1	-40±3	30±3																
2	Room temperature	5±3																
3	+125±2	30±3																
4	Room temperature	5±3																
Endurance at high temperature	IEC 61051-4.20	After having continuously applied the maximum allowable AC coltage at 125 ± 2°C for 1000h. The specimen should be stored at room temperature 1 to 2h. Thereafter, the change of varistor voltage shall be measured.	$I \Delta V/V_{1mA} \leq 10\%$ No visible damage															
Temp. Coefficient of clamping voltage	See specification	$\frac{V_{1mA} \text{ at } 125^{\circ}\text{C} - V_{1mA} \text{ at } 25^{\circ}\text{C}}{V_{1mA} \text{ at } 25^{\circ}\text{C}} \times \frac{1}{100} \times 100(\%/^{\circ}\text{C})$	-0.05 ≤ Tc ≤ 0(%/°C)															
Coating isolation voltage capability	IEC61051-4.8	Dielectric must withstand AC 2500V for one minute.	No visible damage															

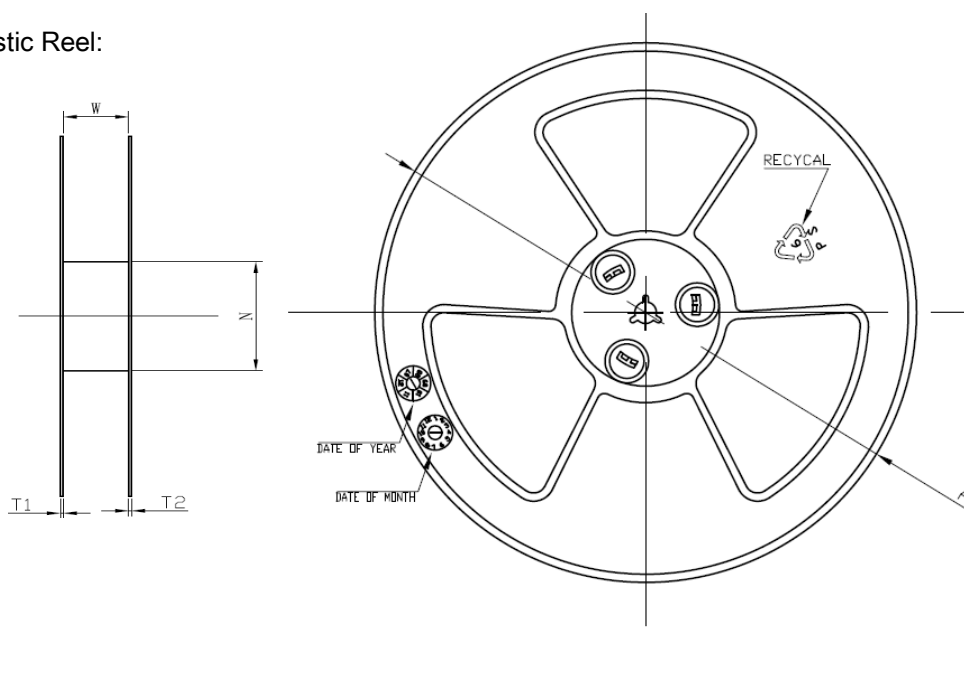
Tape & Reel Specification:

Carrier Tape:



Part	A0	B0	K0	P0	P1	P2	Reel size
mm	6.60 ± 0.1	8.70 ± 0.1	4.50 ± 0.1	4.00 ± 0.10	12.0 ± 0.10	2.00 ± 0.10	24000
Part	W	T	E	F	D0	D1	Packing unit
mm	16.0 ± 0.3	0.40 ± 0.05	1.75 ± 0.10	7.5 ± 0.1	$1.50 +0.1/-0$	1.50 ± 0.10	1820pcs

Plastic Reel:



SPEC	16
$E \pm 0.5$	2.3
$F \pm 0.5$	10.75
$W \pm 0.2$	16.4
$T1 \pm 0.3$	2.2
$T2 \pm 0.3$	2.2
$A \begin{smallmatrix} +0 \\ -2 \end{smallmatrix}$	$\phi 380$
$N \pm 3.0$	$\phi 100$
$D \pm 0.3$	13.3

Carton:

