

FEATURES

- | High surge current handling capability
- | High energy absorption capability
- | Fast response time of less than 25ns, instantly clamping the transient over voltage
- | Low clamping voltages, providing better surge protection
- | Low capacitance values, providing digital switching circuitry protection
- | High insulation resistance, preventing electric arcing to the adjacent devices or circuits



14D

APPLICATIONS

- | Surge protection of consumer equipment
- | Surge protection of communication, measuring and controller instrument
- | Surge protection in electronic home appliances, gas and petroleum appliances
- | Relay and electromagnetic valve surge absorption
- | Transistor, Diode, IC, Thyristor or Triac semiconductor protection

APPROVALS

RoHS	Compliance with 2011/65/EU
HF	Compliance with IEC61249-2-21:2003

GENERAL CHARACTERISTICS DEFINITION

- | Operating Temperature Range : -40°C ~ +125°C
- | Storage Temperature Range : -40°C ~ +150°C
- | Working Surface Temperature : +115°C
- | Insulation Resistance : >100MΩ

MATERIAL

- | Coating: Epoxy Resin
- | Electrode: Silver Solder
- | Disk: Zinc Oxide

ELECTRICAL CHARACTERISTICS

Symbol	Mximum Allowable Voltage		Varistor Voltage @1mA	Mximum Clamping Voltage		Withstanding Surge Current (8/20μs)	Maximum Energy (10/1000μs)	Rated Power	Typical Capacitance (Reference)
	V _{AC} (V)	V _{DC} (V)	(V)	V _C (V)	I _P (A)	I(A) High Surge	(J) High Surge	(W)	@1KHz (pF)
14D511KJT	320	415	510(459-561)	845	50	6000	180	0.6	390

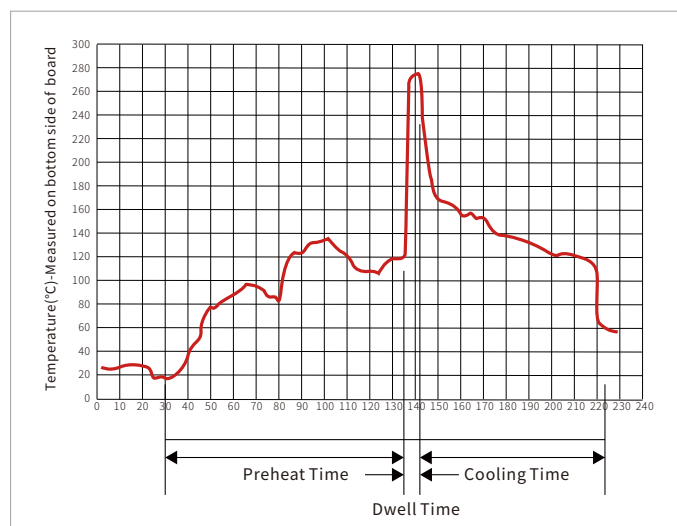
CHARACTERISTIC CURVES

Items	Test condition/Description
Varistor Voltage	The voltage across the varistor measured at 1mA DC, can be called Vb
Maximum Allowable Voltage	Maximum continuous sine wave(RMS) or DC voltage which may be applied
Maximum Clamping Voltage	Peak voltage across the varistor with a specified peak impulse current of 8/20μs waveform
Rated Power	The maximum average power that can be applied within the specified ambient temperature
Withstanding Surge Current	The maximum current within the varistor voltage change of less than ±10% when one impulse current(8/20μs) applied
Energy	The max.energy absorbed with a varistor voltage change of less than ± 10% when one impulse (10/1000μs) is applied
Varistor Voltage Temperature Coefficient	$\left \frac{Vb@85^{\circ}C - Vb@25^{\circ}C}{Vb@25^{\circ}C} \times \frac{1}{60} \times 100\% (\%/^{\circ}C) \right \leq 0.05\% / ^{\circ}C$ $\left \frac{Vb@-40^{\circ}C - Vb@25^{\circ}C}{Vb@25^{\circ}C} \times \frac{1}{65} \times 100\% (\%/^{\circ}C) \right \leq 0.05\% / ^{\circ}C$
Surge Life	The max.current with a varistor voltage change of less than ±10% when 10,000 times impulse current (8/20μs) are applied at intervals of 20 seconds at room temperature

CHARACTERISTIC CURVES

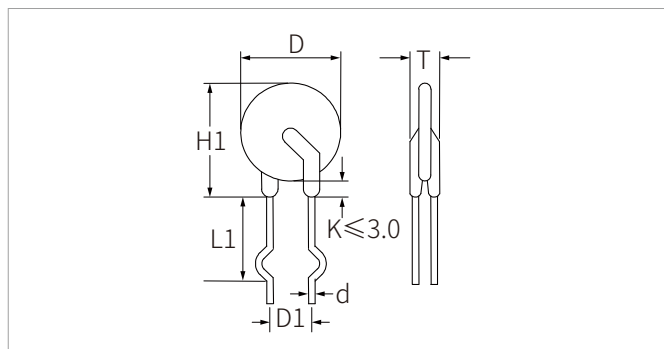
Items	Test condition/Description	Specifications															
High Temperature Storage	Ambient Temp:125±2°C Duration:1000 hrs	$ \Delta V_{1mA}/V_{1mA} \leq 5\%$															
Low Temperature Storage	Ambient Temp:-40±2°C Duration:1000 hrs	$ \Delta V_{1mA}/V_{1mA} \leq 5\%$															
Humidity	Ambient Temp:40±2°C,90~95% R.H. Duration:1000 hrs	$ \Delta V_{1mA}/V_{1mA} \leq 5\%$															
Temperature Cycle	The conditions shown below shall be repeated 5 cycles <table border="1"> <thead> <tr> <th>Step</th><th>Temperature(°C)</th><th>Period(minutes)</th></tr> </thead> <tbody> <tr> <td>1</td><td>-40±3</td><td>30±3</td></tr> <tr> <td>2</td><td>Room temperature</td><td>15±3</td></tr> <tr> <td>3</td><td>125±3</td><td>30±3</td></tr> <tr> <td>4</td><td>Room temperature</td><td>15±3</td></tr> </tbody> </table>	Step	Temperature(°C)	Period(minutes)	1	-40±3	30±3	2	Room temperature	15±3	3	125±3	30±3	4	Room temperature	15±3	No visible damage $ \Delta V_{1mA}/V_{1mA} \leq 5\%$
Step	Temperature(°C)	Period(minutes)															
1	-40±3	30±3															
2	Room temperature	15±3															
3	125±3	30±3															
4	Room temperature	15±3															
High Temperature Load	Ambient Temp:85±2°C ,Duration:1000 hrs Load:Max.Allowable Voltage in AC eara	$ \Delta V_{1mA}/V_{1mA} \leq 10\%$															
Damp Heat Load	Ambient Temp:40±2°C ,90~95% R.H. Duration:1000 hrs Load:Max.Allowable Voltage	No visible damage $ \Delta V_{1mA}/V_{1mA} \leq 10\%$															
Voltage Proof	Metal balls method,2500Vac 1min	No visible damage															

WAVE SOLDERING



Wave Parameter		Lead-free assembly
Pre Heat	Temperature Min	100°C
	Temperature Max	150°C
	Time(min to max)	60 – 180 secs
Solder pot Temperature		280°C Max
Solder Dwell Time		2-5 seconds

PACKAGE INFORMATION



Symbol	Dimension(mm)
H1(max)	21.0
L1(±1.0)	10.0
D(max)	17.0
D1(±0.8)	7.5
T(max)	6.0
d(±0.05)	0.8

ORDERING INFORMATION

Part Number	Component Package	Package
14D511KJT	14D	500PCS

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