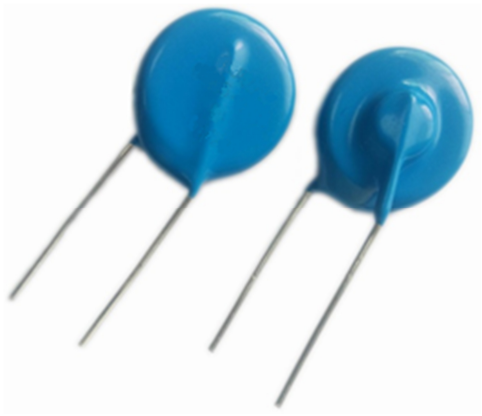
Description

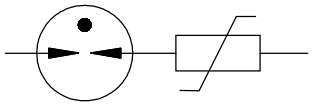
Ruilon combines its patented GDT and a Metal Oxide Varistor (MOV) to create a new and innovative KOV® Series Composite Surge Protective Unit. By combining the best features of both MOV and GDT technologies, the KOV® Series achieves high performance as a long life protector with low capacitance and, most importantly, very low leakage. The KOV® Series is ideally suited for any number of AC and DC power applications where a high level of performance is required over time.



Features

- Hybrid design
- Low leakage
- Bidirectional protection
- Low capacitance
- RoHS and REACH compliant

Circuit Diagram



Applications

AC Line Protection

- White goods
- Power line communications
- Smoke alarm systems
- High value consumer goods
- UL 1449 SPD 4th edition

DC Line Protection

- Solar inverters
- Power supplies
- Distribution systems

Part Number Code

K	O	V	2	0	D	-	x	x	x	G	/	x	x

- KOV20D: Product Series
- x x x: AC maximum continuous operating voltage
- G: G = GDT/Varistors Hybrid Protection Component
- x x: Packaging, Blank = Bulk

Absolute Maximum Ratings (@T_A=25℃ unless otherwise noted)

Parameter	Symbol	Typ	Value	Unit
Operating Temperature	T_{OPR}	25	-40 to +85	℃
Storage Temperature	T_{STG}	25	-40 to +105	℃

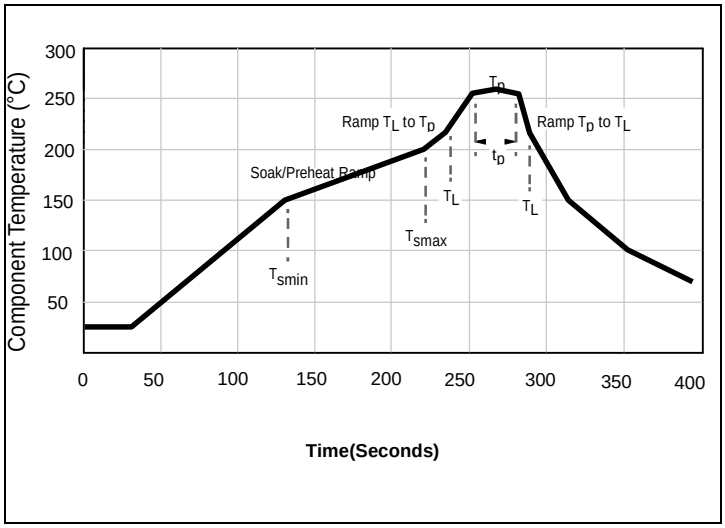
Electrical Characteristics(@T_A=25℃ unless otherwise noted)

Part No.	Operating				Protection						
	Max. Continuous Operating Voltage (MCOV)		Max. Leakage @ MCOV	Max Capacitance	Inom UL1449/4th.	Uoc IEC61000-4-5	Ring Wave Surge IEEE 62.41	Protection Level Current Class (1) IEC 61051-1		Clamp Transition Time	Energy
	Vrms	V_{DC}	Arms	1MHz	15 Ops.	40 Ops.	200 A	Max .	Typ.		8/20μs
	V	V	μA	pF	A	V	Ops.	V_{fp}	V_C	μs	J
KOV20D-050G	50	65	< 1	4	5,000	10,000	± 250	700	150	0.3	67
KOV20D-060G	60	85	< 1	4	5,000	10,000	± 250	700	185	0.3	73
KOV20D-130G	130	170	< 1	4	5,000	10,000	± 250	700	360	0.3	175
KOV20D-175G	175	225	< 1	4	5,000	10,000	± 250	1200	475	0.3	220
KOV20D-210G	210	275	< 1	4	5,000	10,000	± 250	1200	535	0.3	245
KOV20D-250G	250	320	< 1	4	5,000	10,000	± 250	1200	630	0.3	315
KOV20D-275G	275	350	< 1	4	5,000	10,000	± 250	1200	680	0.3	350
KOV20D-300G	300	385	< 1	4	5,000	10,000	± 250	1200	740	0.3	380
KOV20D-320G	320	415	< 1	4	5,000	10,000	± 250	1200	810	0.3	405
KOV20D-350G	350	460	< 1	4	5,000	10,000	± 250	1200	870	0.3	445
KOV20D-385G	385	505	< 1	4	5,000	10,000	± 250	1400	950	0.3	475
KOV20D-420G	420	560	< 1	4	5,000	10,000	± 250	1400	1050	0.3	490
KOV20D-460G	460	615	< 1	4	5,000	10,000	± 250	1600	1150	0.3	500
KOV20D-510G	510	670	< 1	4	5,000	10,000	± 250	1600	1330	0.3	525

1) Front Level Protection (V_{fp}) defined as measured with 10 % of peak current in accordance with IEC 61051-1.

Soldering Profile

Users should ensure that they do not exceed the scope of IPC/JEDEC J-STD-020 (Pb-Free) during solder assembly.



Profile Feature	Profile Limits
Preheat temperature min. (T_{smin})	150ºC
Preheat temperature max. (T_{smax})	200ºC
Ramp time (T_{smax} – T_{smin})	60 – 120 seconds
Ramp-up rate (T_L to T_p)	3 °C / second max.
Liquidus temperature (T_L)	217ºC
Time maintained above T_L	60 – 150 seconds
Peak package body temperature	260ºC
Time within 5 °C of peak temperature (T_p)	30 seconds max.
Ramp-down rate (T_p to T_L)	6 °C / second max.
Time from 25 °C to peak temperature	8 minutes max.

Dimensions

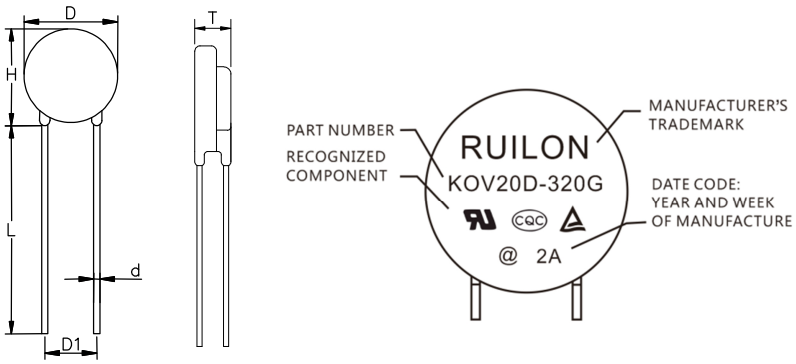
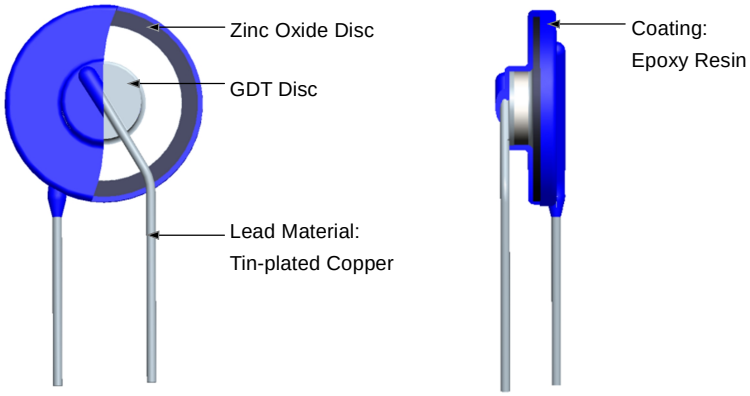


TABLE 1		
Symbol	**Millimeters**	**Inches**
H(max)	26.0	1.024
L(min)	15.0	0.591
D(max)	23.0	0.906
D1(±1.0)	10.0	0.394
T(max)	TABLE 2	
d(±0.1)	1.0	0.039
Packaging Quantity: 200pcs/bag		

TABLE 2 - T(max.)

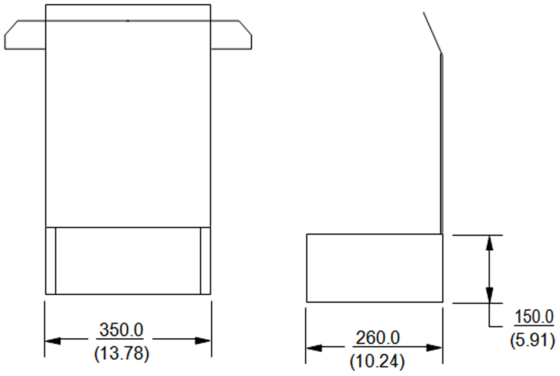
Model	Millimeters	Inches	Model	Millimeters	Inches
KOV20D-050G	6.9	0.272	KOV20D-300G	8.7	0.343
KOV20D-060G	7.0	0.276	KOV20D-320G	8.9	0.351
KOV20D-130G	7.5	0.296	KOV20D-350G	9.1	0.359
KOV20D-175G	7.9	0.311	KOV20D-385G	9.3	0.366
KOV20D-210G	8.0	0.315	KOV20D-420G	9.6	0.378
KOV20D-250G	8.3	0.327	KOV20D-460G	9.9	0.390
KOV20D-275G	8.5	0.335	KOV20D-510G	10.4	0.410

Construction



Packaging Information - 20 mm Disc

BULK



KOV20D-xxxG: 1600 pcs. per carton

- 200 pcs. per bag;
- 2 bags per inner box;
- 4 inner boxes per carton

DIMENSIONS: MM
(INCHES)