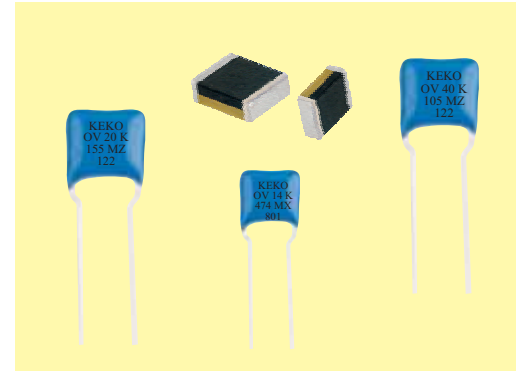


AUTOMOTIVE DUAL FUNCTION VARICON® OV SERIES

Description

VARICON OV Series is series of dual function protective devices that protect against voltage surges in automotive voltage region and against radio frequency noise. This component replaces two components - a low voltage varistor and a capacitor.

OV Series varicons incorporate varistor function in automotive applications voltage region (12 V, 24 V, 42 V) and a function of a radio-frequency filtering capacitor in the high capacitance range from 0.47 to 1.5 μ F (higher values are available upon request), making them ideal for protection in automobile electronics.



OV Varicons are square shaped components with in-line leads, which require very little mounting space, at least 30 % less than the two components they replace. Dual function VARICONs are also available in SMD versions upon request - compliant with Pb-free soldering.

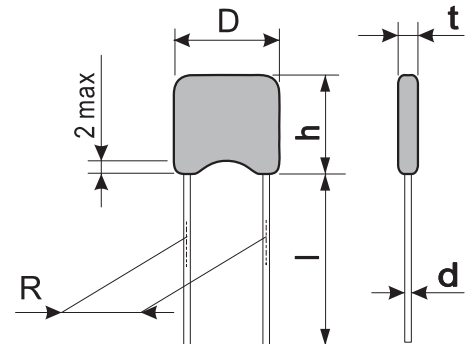
Features

- Supply voltage12 V, 24 V and 42 V.
- Operating voltage range V_{dc} 16, 20, 26, 38 and 56 V.
- Capacitance range C (pF)0.47 to 1.5 μ F (higher values are available upon request).
- Capacitor temperature characteristics X7R or Z5U.
- Protects against voltage transients and suppresses radio-frequency interference.
- Dimensional and weight saves on board
- 2 Standard model sizes available 7,5 x 9,0 and 8 x 12 mm (smaller model size is available upon request).
- THT and SMT components.
- Available in tape and reel for automatic insertion equipment.
- Lead free components.
- AEC-Q200 qualified Grade 1.

Absolute Maximum Ratings

Continuous :	Units	Values
Steady State Applied Voltage :		
DC Voltage Range (V_{dc})	V	16 to 56
AC Voltage Range (V_{rms})	V	14 to 40
Transient :		
Load Dump Energy, (WDL)	J	6 to 12
Jump Start Capability (5 minutes), (V_{jump})	V	24 to 65
Non-Repetitive Surge Current, 8/20 μ s Waveform, (I_{max})	A	800 to 1200
Non-Repetitive Surge Energy, 10/1000 μ s Waveform (W_{max})	J	2,4 to 10,5
Capacitance Range	nF	470 to 4700
Capacitor Temperature Characteristics		X7R or Z5U
Operating Ambient Temperature	°C	-40 to +85
Storage Temperature Range	°C	-40 to +125
Threshold Voltage Temperature Coefficient	%/°C	< +0.05
Insulation Resistance	G Ω	> 1
Isolation Voltage Capability	kV	> 1.25
Response Time	ns	< 25
Climatic Category		40/85/56

Device Ratings and Characteristics



OV 14 K 474 MX° 801... OV 40 K 155 MZ° 122

Type	V _{rms} V	V _{dc} V	V _n @ 1 mA V	V _{jump} 5 min V	V _c V	I _c A	W _{max} 10/1000 μs J	WLD 10 x J	P max W	I _{max} 8/20 μs A	C @1 kHz μF	D max mm	h / A max mm	R mm	d mm	t max mm
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12 V Supply Voltage

OV 14 K 474 MX 801	14	16	24	24,5	40	5	2,4	6	0,015	800	0,47	7,5	9	5	0,6	5,5
OV 14 K 105 MZ 801	14	16	24	24,5	40	5	2,4	6	0,015	800	1,00	7,5	9	5	0,6	5,5
OV 14 K 155 MZ 801	14	16	24	24,5	40	5	2,4	6	0,015	800	1,50	7,5	9	5	0,6	5,5
OV 14 K 474 MX 122	14	16	24	24,5	40	10	5,8	12	0,030	1200	0,47	8,0	12	5	0,6	5,5
OV 14 K 105 MZ 122	14	16	24	24,5	40	10	5,8	12	0,030	1200	1,00	8,0	12	5	0,6	5,5
OV 14 K 155 MZ 122	14	16	24	24,5	40	10	5,8	12	0,030	1200	1,50	8,0	12	5	0,6	5,5
OV 17 K 474 MX 801	17	20	27	30	44	5	2,8	6	0,015	800	0,47	7,5	9	5	0,6	5,5
OV 17 K 105 MZ 801	17	20	27	30	44	5	2,8	6	0,015	800	1,00	7,5	9	5	0,6	5,5
OV 17 K 155 MZ 801	17	20	27	30	44	5	2,8	6	0,015	800	1,50	7,5	9	5	0,6	5,5
OV 17 K 474 MZ 122	17	20	27	30	44	10	7,4	12	0,030	1200	0,47	8,0	12	5	0,6	5,5
OV 17 K 105 MZ 122	17	20	27	30	44	10	7,4	12	0,030	1200	1,00	8,0	12	5	0,6	5,5
OV 17 K 155 MZ 122	17	20	27	30	44	10	7,4	12	0,030	1200	1,50	8,0	12	5	0,6	5,5

24 V Supply Voltage

OV 20 K 474 MX 801	20	26	33	36	54	5	3,2	6	0,015	800	0,47	7,5	9	5	0,6	5,5
OV 20 K 105 MZ 801	20	26	33	36	54	5	3,2	6	0,015	800	1,00	7,5	9	5	0,6	5,5
OV 20 K 155 MZ 801	20	26	33	36	54	5	3,2	6	0,015	800	1,50	7,5	9	5	0,6	5,5
OV 20 K 474 MX 122	20	26	33	36	54	10	7,8	12	0,030	1200	0,47	8,0	12	5	0,6	5,5
OV 20 K 105 MZ 122	20	26	33	36	54	10	7,8	12	0,030	1200	1,00	8,0	12	5	0,6	5,5
OV 20 K 155 MZ 122	20	26	33	36	54	10	7,8	12	0,030	1200	1,50	8,0	12	5	0,6	5,5
OV 30 K 474 MX 801	30	38	47	50	77	5	4,5	6	0,015	800	0,47	7,5	9	5	0,6	5,5
OV 30 K 105 MZ 801	30	38	47	50	77	5	4,5	6	0,015	800	1,00	7,5	9	5	0,6	5,5
OV 30 K 155 MZ 801	30	38	47	50	77	5	4,5	6	0,015	800	1,50	7,5	9	5	0,6	5,5
OV 30 K 474 MX 122	30	38	47	50	77	10	10	12	0,030	1200	0,47	8,0	12	5	0,6	5,5
OV 30 K 105 MZ 122	30	38	47	50	77	10	10	12	0,030	1200	1,00	8,0	12	5	0,6	5,5
OV 30 K 155 MZ 122	30	38	47	50	77	10	10	12	0,030	1200	1,50	8,0	12	5	0,6	5,5

42 V Supply Voltage

OV 40 K 474 MX 801	40	56	68	65	110	5	4,8	6	0,015	800	0,47	7,5	9	5	0,6	5,5
OV 40 K 105 MZ 801	40	56	68	65	110	5	4,8	6	0,015	800	1,00	7,5	9	5	0,6	5,5
OV 40 K 155 MZ 801	40	56	68	65	110	5	4,8	6	0,015	800	1,50	7,5	9	5	0,6	5,5
OV 40 K 474 MX 122	40	56	68	65	110	10	10,5	12	0,030	1200	0,47	8,0	12	5	0,6	5,5
OV 40 K 105 MZ 122	40	56	68	65	110	10	10,5	12	0,030	1200	1,00	8,0	12	5	0,6	5,5
OV 40 K 155 MZ 122	40	56	68	65	110	10	10,5	12	0,030	1200	1,50	8,0	12	5	0,6	5,5

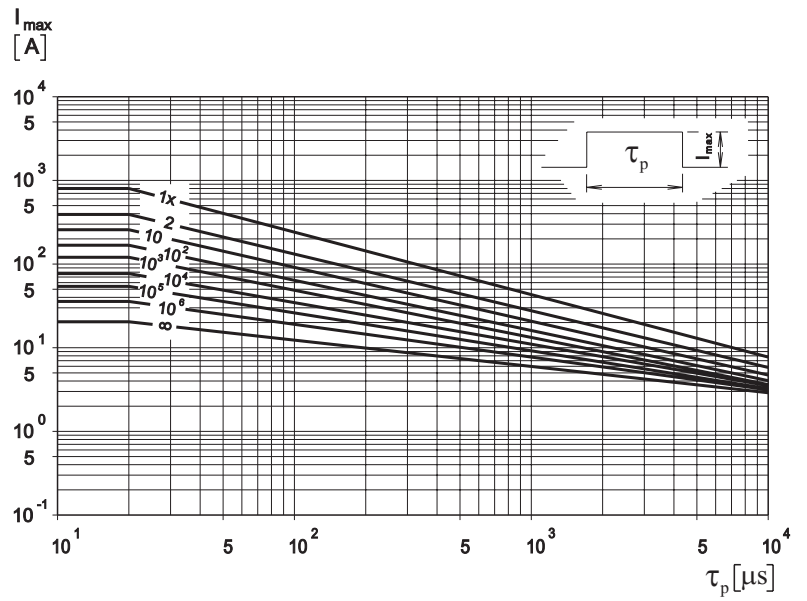
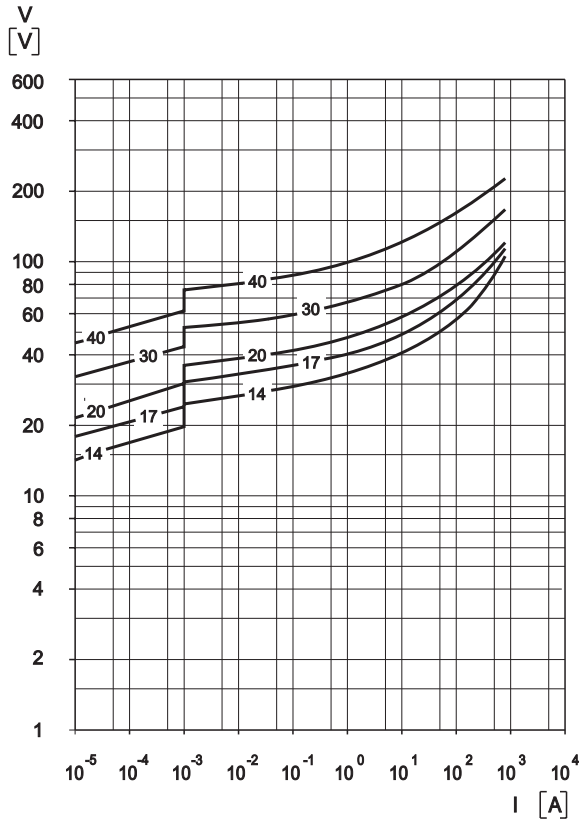
° - Z stands for Z5U temperature characteristics; X stands for X7R temperature characteristics; Other capacitance values are also available.

Protection Level

with the worst-case condition in the tolerance region

Pulse Rating Curves

OV 14...40 K ... 801

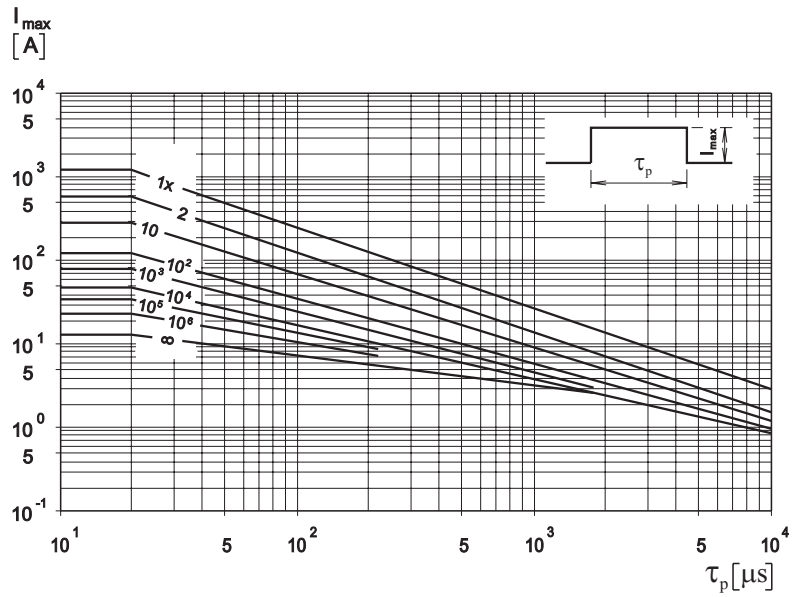
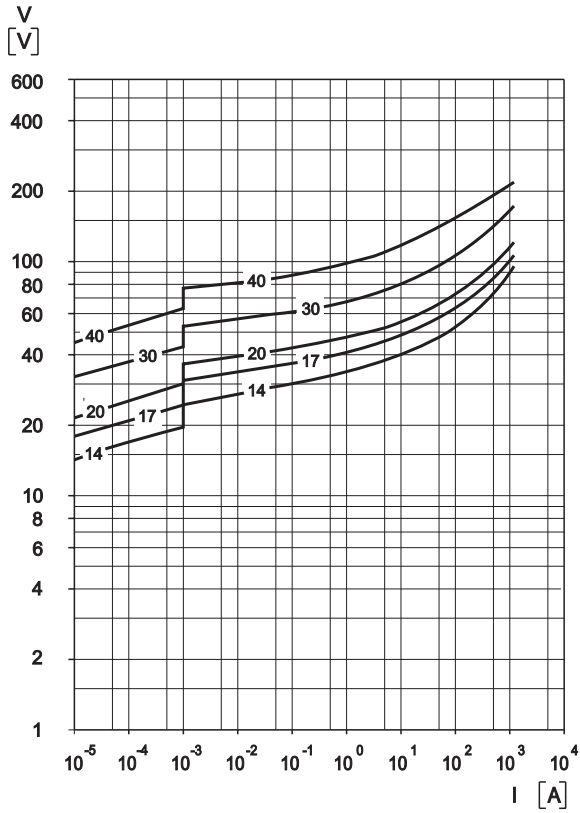


Protection Level

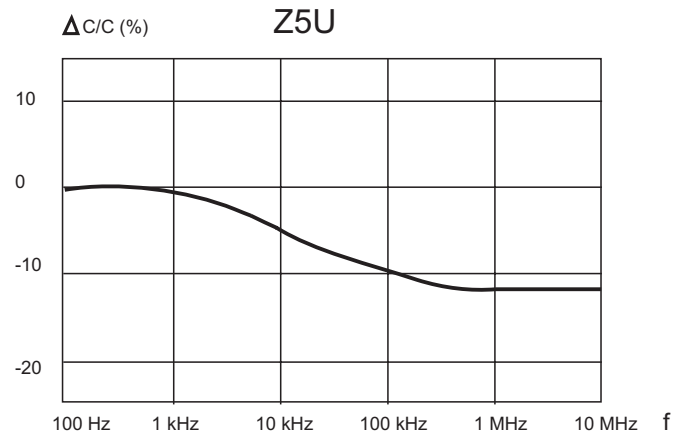
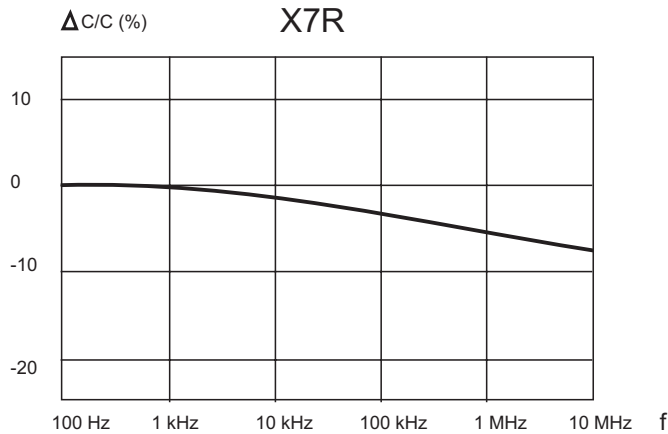
with the worst-case condition in the tolerance region

Pulse Rating Curves

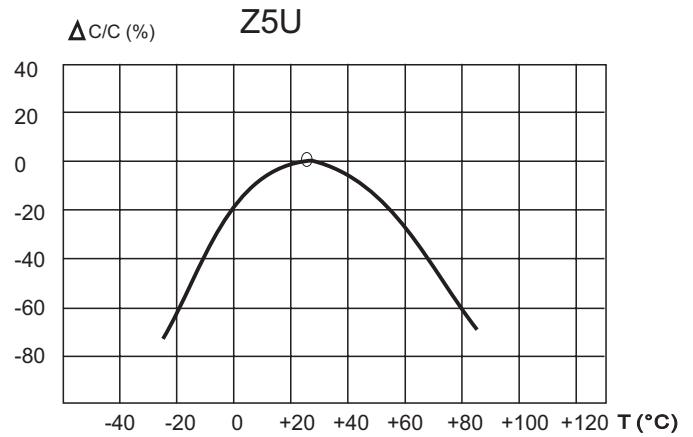
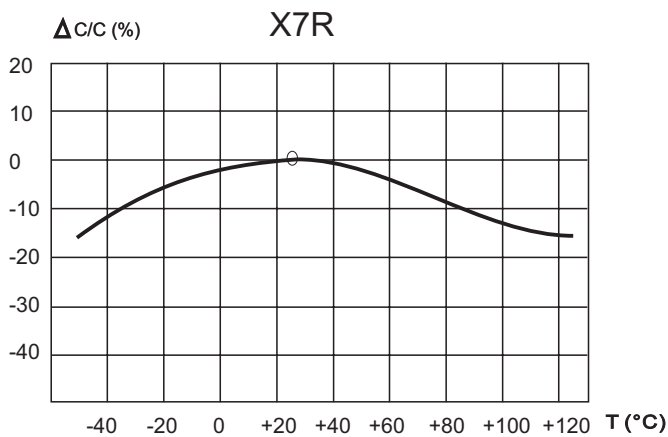
OV 14...40 K ... 122



Capacitance - Frequency Characteristics

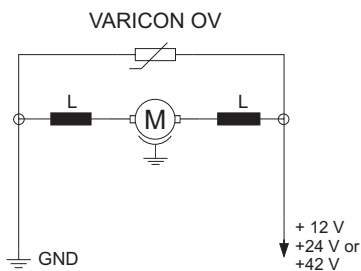


Capacitance - Temperature Characteristics



Application

Application Circuit



Elimination of transients and EMI noise in automotive electronics such as engine control, exhaust gas control, safety systems, etc. against disturbances caused by small motors applied in automobiles. Most frequent small motors in an automobile are the ones for windscreen wipers, window lifting, seat adjustment and automatic door locking.