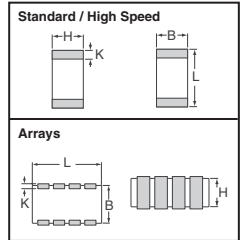




CeraDiodes Standard, High Speed and Arrays



Due to the ongoing miniaturization, electronic devices are becoming more and more sensitive to ESD. Therefore, reliable protection components become absolutely necessary to safeguard valuable electronics against the impact of ESD. CeraDiodes are ceramic semiconductors optimized specifically for high performance in ESD applications. They have a non-linear voltage/current characteristic for effectively suppressing extremely fast voltage transients and offer superior parametric stability over the complete operating range of -40°C - 85°C. CeraDiodes are bi-directional devices. A single CeraDiode connected from signal/

data line to ground routes positive and negative ESD transitions safely to the ground plane. This technique eliminates the need to route ESD charge into the power plane, possibly damaging nearby integrated circuits. **Features:** Bi-directional ESD protection to IEC 61000-4-2 level 4 • No de-rating of maximum ratings up to 85°C • Extremely fast response time of < .5ns **Applications:** • EDP products (desktop and notebook computers) • Peripherals (printers, memory) • Portable handheld products • Mobile communication • Consumer products (flat TV's, set-top boxes, MP3 players, digital cameras, etc).

Size Code	Dimensions (mm)			
	L	B	H	K
0402	1.0	0.5	0.5	0.2
0405	1.3	1.0	0.7	—
0508	2.0	1.2	0.9	0.2
0603	1.6	0.8	0.8	0.25
0612	3.2	1.6	0.9	0.35
1003	2.5	0.8	0.8	0.43
1012	3.2	2.5	1.2	0.45

Size Code	Max. DC Working Voltage (V)	Peak Pulse Current @ 8/20µs (A)	Minimum Breakdown Voltage	Maximum Clamping Voltage	Typical Capacitance (pF)	Leakage Current (µA)	Digi-Key Part No.	Cut Tape Pricing			Digi-Key Part No.	Tape and Reel		Epcos Part No.
								1	10	100		Qty.	Pricing	
Standard Speed														
0402	5.6	10	6.4	24	180	1	495-3418-1-ND‡	.15	1.21	7.55	495-3418-2-ND	10,000	61.87/M	B72590D50A60
0402	15	10	20	46	47	1	495-3417-1-ND‡	.24	1.77	11.10	495-3417-2-ND	10,000	61.87/M	B72590D150A60
0603	5.6	30	6.4	19	470	1	495-3414-1-ND‡	.18	1.40	8.74	495-3414-2-ND	4,000	84.48/M	B72500D50A60
0603	9.0	30	10	30	220	1	495-3415-1-ND‡	.27	2.06	12.85	495-3415-2-ND	4,000	84.48/M	B72500D90A60
0603	15	30	22	42	160	1	495-3412-1-ND‡	.18	1.40	8.74	495-3412-2-ND	4,000	84.48/M	B72500D150A60
0603	22	30	25	50	56	1	495-3413-1-ND‡	.18	1.40	8.74	495-3413-2-ND	4,000	84.48/M	B72500D200A60V7
1003	12	20	16	46	82	1	495-3416-1-ND‡	.19	1.45	9.04	495-3416-2-ND	4,000	88.05/M	B72500D120A60
High Speed														
0402	5.6	—	150	—	0.6	1	495-3684-1-ND‡	.17	1.26	7.85	495-3684-2-ND	10,000	64.25/M	B72590D0050H160
0402	15	—	23	66	10	1	495-3685-1-ND‡	.17	1.26	7.85	495-3685-2-ND	10,000	64.25/M	B72590D0150H060
0402	16	—	65	290	2	1	495-3419-1-ND‡	.17	1.26	7.85	495-3419-2-ND	10,000	64.25/M	B72590D160H60
0603	16	—	65	290	3	1	495-3420-1-ND‡	.29	2.20	13.74	495-3420-2-ND	4,000	90.43/M	B72500D160H60
0603	30	—	50	120	10	1	495-3421-1-ND‡	.29	2.20	13.74	495-3421-2-ND	4,000	90.43/M	B72500D300H60
1003	16	—	38	146	3	1	495-3687-1-ND‡	.20	1.55	9.67	495-3687-2-ND	4,000	93.99/M	B72570D0160H060
Arrays														
0405	22	10	25	50	75	—	495-3430-1-ND‡	.36	2.71	16.97	495-3430-2-ND	4,000	112.33/M	B72762A2170S160
0508	16	—	24	59	10	.01	495-3427-1-ND	.63	4.85	30.33	495-3427-2-ND	4,000	199.56/M	B72714A8140S160
0508	16	—	22	66	10	1	495-3688-1-ND‡	.63	4.83	30.20	495-3688-2-ND	4,000	198.69/M	B72714D0160H060
0508	22	10	24	60	33	1	495-3682-1-ND‡	.63	4.83	30.20	495-3682-2-ND	4,000	198.69/M	B72714D0200A060
0612	16	—	150	350	3	3	495-3429-1-ND	.63	4.85	30.33	495-3429-2-ND	3,000	181.64/M	B72724A8151V62
0612	16	—	80	350	3	1	495-3422-1-ND‡	.63	4.83	30.20	495-3422-2-ND	3,000	180.85/M	B72724D160H62
0612	22	30	25	50	75	—	495-3428-1-ND	.63	4.85	30.33	495-3428-2-ND	3,000	181.64/M	B72724A2170S162
0612	22	30	25	50	56	1	495-3683-1-ND‡	.63	4.83	30.20	495-3683-2-ND	3,000	180.85/M	B72724D0200A062
1012	5.6	20	52	195	3.5	1	495-3423-1-ND‡§	.99	7.48	46.76	495-3423-2-ND	2,000	277.22/M	B72735D50H62

† 4 Terminals § 6 Terminals

‡ 495-3681-ND CeraDiode Kit contains the items denoted (18 parts)..... \$26.77

ETFV Series Thermofuse Varistors



The Epcos Thermofuse varistors of the ETFV series combines a disk varistor with a thermofuse. The thermofuse is connected to a terminal lead of the disk varistor by a solder bridge. If a sustained supply-frequency over-voltage occurs, the varistor absorbs the over-voltage and heats up in the process. If the melting point of the thermofuse solder is exceeded, the latter opens and the disk varistor is permanently disconnected from the power line. This disconnection assures that the varistor is not overloaded and short-circuited. **Applications:** UPS, White Goods, Power Supplies, AC Panel Protection modules, Dimmers **Specifications:** UL1449 and UL60691

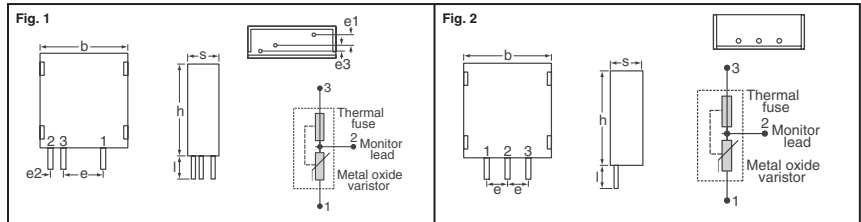


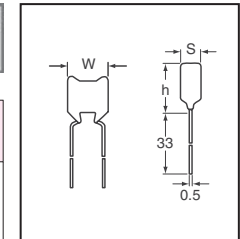
Fig.	Maximum Allowable Voltage (V)		Varistor Voltage @ 1mA ±10% (V)	Maximum Clamping Voltage		iMax. 8/20 µs A	Dimensions (mm)						Digi-Key Part No.	Pricing				Epcos Part No.		
	AC	DC		V	A		b	h	l	s	e	e1		e2	e3	1	10		100	1,000
1	130	170	205	340	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3635-ND	2.45	20.97	174.76	996.15	ETFV14K130E2
	150	200	240	395	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3636-ND	2.45	20.97	174.76	996.15	ETFV14K150E2
	175	225	270	455	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3637-ND	2.45	20.97	174.76	996.15	ETFV14K175E2
	275	350	430	710	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3638-ND	2.45	20.97	174.76	996.15	ETFV14K275E2
	320	420	510	840	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3639-ND	2.45	20.97	174.76	996.15	ETFV14K320E2
	420	560	680	1120	50	6,000	19.2	22	5	11	7.5	5	5	1	495-3640-ND	2.45	20.97	174.76	996.15	ETFV14K420E2
2	130	170	205	340	100	10,000	22	25.7	5	10	5	—	—	—	495-3641-ND	3.92	33.55	279.62	1593.84	ETFV20K130E2
	150	200	240	395	100	10,000	22	25.7	5	10	5	—	—	—	495-3642-ND	3.92	33.55	279.62	1593.84	ETFV20K150E2
	175	225	270	455	100	10,000	22	25.7	5	10	5	—	—	—	495-3643-ND	3.92	33.55	279.62	1593.84	ETFV20K175E2
	275	350	430	710	100	10,000	22	25.7	5	10	5	—	—	—	495-3644-ND	3.92	33.55	279.62	1593.84	ETFV20K275E2
	320	420	510	840	100	10,000	22	25.7	5	10	5	—	—	—	495-3645-ND	3.92	33.55	279.62	1593.84	ETFV20K320E2
	130	170	205	340	150	20,000	30.2	35.2	5	11	6.35	—	—	—	495-3647-ND	5.58	47.81	398.46	2271.22	ETFV25K130E4
	175	225	270	455	150	20,000	30.2	35.2	5	11	6.35	—	—	—	495-3649-ND	5.58	47.81	398.46	2271.22	ETFV25K175E4
	320	420	510	840	150	20,000	30.2	35.2	5	11	6.35	—	—	—	495-3651-ND	5.58	47.81	398.46	2271.22	ETFV25K320E4
	420	560	680	1120	150	20,000	30.2	35.2	5	11	6.35	—	—	—	495-3652-ND	5.58	47.81	398.46	2271.22	ETFV25K420E4

Leaded Varistor with RFI Suppression



Features: • RFI noise suppression and transient over voltage protection integrated in a single component. • Reliable protection against automotive transients such as load dump and jump start (for SR1 and SR2 types) **Applications:** • RFI noise suppression and transient over voltage protection on DC lines of small motors, windshield wipers, window lifters, mirrors, central locking, memory seat and sunroof.

Maximum Allowable Voltage (V)	Varistor Voltage @ 1mA (V)	Maximum Clamping Voltage (V)	iClamp (8/20µs) (A)	iMax (8/20µs) (A)	Dimensions (mm)			Digi-Key Part No.	Price Each			Epcos Part No.	
					W (Max.)	h (Max.)	S (Max.)		1	10	100		
20	26	33	54	1	200	6.0	7.5	4.5	495-4013-ND	1.23	1.06	.89	SR6K20M105X
20	26	33	58	5	800	7.3	7.8	3.7	495-4014-ND	3.06	2.63	2.19	SR1K20M474X
20	26	33	58	10	1200	7.8	9.0	3.6	495-4015-ND	4.06	3.49	2.91	SR2K20M474X
14	16	22	40	5	800	7.3	7.8	3.7	495-4016-ND	2.95	2.54	2.12	SR1S14BM474X
35	45	56	90	1	100	6.0	7.5	4.5	495-4017-ND	1.80	1.55	1.29	SR6K35M105X



Digi-Reel® Most SMT cutdown parts are available on a Digi-Reel®. For Digi-Reel part number, change 1-ND to 6-ND or CT-ND to DKR-ND. See Digi-Key® Services on page 2 for additional information.

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