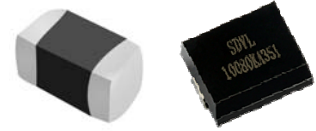


# Multilayer Chip Varistor for Voltage Surge Suppression – SDVL Series

Operating Temp. : -55°C~+85°C



## FEATURES

- SMD type, small size suitable for high density mounting
- Excellent clamping ratio and strong capability of voltage surge suppression
- Excellent solderability (Ni, Sn plating)

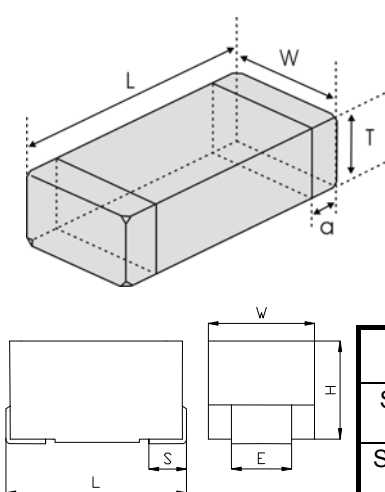
## APPLICATIONS

- Lightning protection and voltage surge suppression for Power supply, Network Interface, LED lighting.
- Lightning protection and voltage surge suppression for security system, PLC, Automotive electronics.
- Industrial instrument, smart meters, etc.

## PRODUCT IDENTIFICATION

<u><b>SDVL</b></u> ①	<u><b>5650</b></u> ②	<u><b>S</b></u> ③	<u><b>D</b></u> ④	<u><b>650</b></u> ⑤	<u><b>P</b></u> ⑥	<u><b>I</b></u> ⑦																									
<table border="1"> <tr><th colspan="2">Type</th></tr> <tr><td>SDVL</td><td>Chip Varistor for Voltage Surge Suppression</td></tr> </table>		Type		SDVL	Chip Varistor for Voltage Surge Suppression	<table border="1"> <tr><th colspan="2">(L×W) (mm)</th></tr> <tr><th colspan="2">External Dimensions (L×W) (mm)</th></tr> <tr><td>3216 [1206]</td><td>3.2×1.6</td></tr> <tr><td>3225 [1210]</td><td>3.2×2.5</td></tr> <tr><td>4532 [1812]</td><td>4.5×3.2</td></tr> <tr><td>5650 [2220]</td><td>5.7×5.0</td></tr> <tr><td>8063 [3225]</td><td>8.0×6.3</td></tr> <tr><td>10080 [4032]</td><td>10.0×8.0</td></tr> </table>		(L×W) (mm)		External Dimensions (L×W) (mm)		3216 [1206]	3.2×1.6	3225 [1210]	3.2×2.5	4532 [1812]	4.5×3.2	5650 [2220]	5.7×5.0	8063 [3225]	8.0×6.3	10080 [4032]	10.0×8.0	<table border="1"> <tr><th colspan="2">Tolerance of Varistor Voltage</th></tr> <tr><td>S</td><td>Special</td></tr> <tr><td>K</td><td>±10%</td></tr> </table>		Tolerance of Varistor Voltage		S	Special	K	±10%
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## SHAPE AND DIMENSIONS



Unit: mm [inch]

Type	L	W	T	a
SDVL3216SD [1206]	3.2±0.2 [.126±.008]	1.6±0.2 [.063±.008]	1.60 Max. [.063]	0.2~0.8 [.008~.031]
SDVL3225SD [1210]	3.2±0.3 [.126±.012]	2.5±0.25 [.098±.010]	1.7 Max. [.067]	0.25~0.75 [.010~.029]
SDVL4532SD [1812]	4.5±0.4 [.177±.016]	3.2±0.3 [.126±.012]	2.5 Max. [.098]	0.25~1.0 [.010~.039]
SDVL5650SD [2220]	5.7±0.4 [.224±.016]	5.0±0.4 [.197±.016]	2.5 Max. [.098]	0.25~1.0 [.010~.039]

Type	L	W	H	E	S
SDVL8063KA [3225]	8.5±0.3 [.334±.012]	6.3±0.3 [.248±.012]	4.5±0.3 [.177±.012]	3.0±0.3 [.118±.012]	1.5±0.3 [.060±.012]
SDVL10080KA [4032]	10.6±0.3 [.417±.012]	8.2±0.3 [.322±.012]	4.5±0.3 [.177±.012]	3.0±0.3 [.118±.012]	1.5±0.3 [.060±.012]

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## SPECIFICATIONS

### SDVL3216SD TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
Test Condition	<30μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	@1V <sub>rms</sub> , 1kHz
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	pF
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL3216SD5R5PT	5.5	4.0	12.0 [10.0-14.0]	18	5.0	0.5	250	2400
SDVL3216SD090PT	9	6.4	14.0 [12.0-16.0]	20	5.0	0.5	250	2000
SDVL3216SD120PT	12	8.5	16.0 [13.0-19.0]	25	5.0	0.5	250	1600
SDVL3216SD140PT	14	10.0	19.0 [16.0-22.0]	30	5.0	0.5	250	1100
SDVL3216SD180PT	18	12.7	25.0 [22.0-28.0]	40	5.0	0.5	250	800
SDVL3216SD220PT	22	15.6	30.0 [26.0-34.0]	45	5.0	0.6	250	750
SDVL3216SD260PT	26	18.4	35.0 [31.0-38.0]	58	5.0	0.7	200	680
SDVL3216SD300PT	30	21.3	42.0 [37.0-46.0]	65	5.0	0.7	200	550
SDVL3216SD330PT	33	23.4	44.0 [39.0-49.0]	72	5.0	0.7	200	500
SDVL3216SD380PT	38	30.0	50.0 [46.0-54.0]	75	5.0	0.7	200	400
SDVL3216SD420PT	42	32.0	53.0 [48.0-58.0]	86	5.0	0.5	150	350
SDVL3216SD480PT	48	34.1	60.0 [54.0-67.0]	100	5.0	0.5	150	280
SDVL3216SD560PT	56	40.0	68.0 [61.0-75.0]	120	5.0	0.5	150	200
SDVL3216SD600PT	60	46.0	76.0 [69.0-83.0]	130	5.0	0.5	150	160
SDVL3216SD650PT	65	50.0	82.0 [73.0-91.0]	140	5.0	0.6	150	140
SDVL3216SD750PT	75	55.0	94.0 [85.0-103.0]	160	5.0	0.6	150	130
SDVL3216SD850PT	85	60.0	100.0 [90.0-110.0]	170	5.0	0.7	150	120
SDVL3216SD101PT	100	75.0	120.0 [108.0-132.0]	200	5.0	0.7	150	100

### SDVL3225SD TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
Test Condition	<30μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	@1V <sub>rms</sub> , 1kHz
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	pF
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL3225SD5R5PT	5.5	4.0	12.0 [10.0-14.0]	18	5.0	0.7	400	4000
SDVL3225SD090PT	9	6.4	14.0 [12.0-16.0]	20	5.0	0.9	400	3800
SDVL3225SD120PT	12	8.5	16.0 [13.0-19.0]	25	5.0	1.0	400	3200
SDVL3225SD140PT	14	10.0	19.0 [16.0-22.0]	30	5.0	1.2	400	2700
SDVL3225SD180PT	18	12.7	25.0 [22.0-28.0]	40	5.0	1.5	400	2000
SDVL3225SD220PT	22	15.6	30.0 [26.0-34.0]	45	5.0	1.7	400	1600
SDVL3225SD260PT	26	18.4	35.0 [31.0-38.0]	58	5.0	1.9	400	1400
SDVL3225SD300PT	30	21.3	42.0 [37.0-46.0]	65	5.0	1.7	300	1200
SDVL3225SD330PT	33	23.4	44.0 [39.0-49.0]	72	5.0	1.7	300	1100
SDVL3225SD380PT	38	30.0	50.0 [46.0-54.0]	75	5.0	2.0	300	1000
SDVL3225SD420PT	42	32.0	53.0 [48.0-58.0]	86	5.0	2.0	300	800
SDVL3225SD480PT	48	34.1	60.0 [54.0-67.0]	100	5.0	2.0	300	700
SDVL3225SD560PT	56	40.0	68.0 [61.0-75.0]	120	5.0	2.3	300	600
SDVL3225SD600PT	60	46.0	76.0 [69.0-83.0]	130	5.0	2.0	300	450
SDVL3225SD650PT	65	50.0	82.0 [73.0-91.0]	140	5.0	1.6	300	320
SDVL3225SD750PT	75	55.0	94.0 [85.0-103.0]	160	5.0	1.6	200	300
SDVL3225SD850PT	85	60.0	100.0 [90.0-110.0]	170	5.0	2.0	200	250
SDVL3225SD101PT	100	75.0	120.0 [108.0-132.0]	200	5.0	1.6	200	180



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## SPECIFICATIONS

### SDVL4532SD TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
Test Condition	<30μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	@1V <sub>rms</sub> , 1kHz
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	pF
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL4532SD5R5PT	5.5	4.0	12.0 [10.0-14.0]	18	5.0	1.0	800	7100
SDVL4532SD090PT	9	6.4	14.0 [12.0-16.0]	20	5.0	1.2	800	6000
SDVL4532SD120PT	12	8.5	16.0 [13.0-19.0]	25	5.0	1.5	800	5100
SDVL4532SD140PT	14	10.0	19.0 [16.0-22.0]	30	5.0	1.9	800	4300
SDVL4532SD180PT	18	12.7	25.0 [22.0-28.0]	40	5.0	2.3	800	3600
SDVL4532SD220PT	22	15.6	30.0 [26.0-34.0]	45	5.0	2.5	800	2600
SDVL4532SD260PT	26	18.4	35.0 [31.0-38.0]	58	5.0	3.0	800	2400
SDVL4532SD300PT	30	21.3	42.0 [37.0-46.0]	65	5.0	3.7	800	2000
SDVL4532SD330PT	33	23.4	44.0 [39.0-49.0]	72	5.0	3.7	800	1800
SDVL4532SD380PT	38	30.0	50.0 [46.0-54.0]	75	5.0	4.2	800	1600
SDVL4532SD420PT	42	32.0	53.0 [48.0-58.0]	86	5.0	4.0	600	1400
SDVL4532SD480PT	48	34.1	60.0 [54.0-67.0]	100	5.0	4.0	600	1200
SDVL4532SD560PT	56	40.0	68.0 [61.0-75.0]	120	5.0	4.3	600	1000
SDVL4532SD600PT	60	46.0	76.0 [69.0-83.0]	130	5.0	4.3	600	900
SDVL4532SD650PT	65	50.0	82.0 [73.0-91.0]	140	5.0	4.0	600	780
SDVL4532SD750PT	75	55.0	94.0 [85.0-103.0]	160	5.0	4.0	500	600
SDVL4532SD850PT	85	60.0	100.0 [90.0-110.0]	170	5.0	4.0	500	450
SDVL4532SD101PT	100	75.0	120.0 [108.0-132.0]	200	5.0	4.0	500	400

### SDVL5650SD TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
Test Condition	<30μA		@1mA DC	8/20μs		Energy 10/1000μs	Peak Current 8/20μs	@1V <sub>rms</sub> , 1kHz
	DC	AC RMS						
Units	Volts	Volts	Volts	Volts	Amps	Joules	Amps	pF
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL5650SD5R5PT	5.5	4	12.0 [10.0-14.0]	18	10.0	1.4	1200	15000
SDVL5650SD090PT	9	6.4	14.0 [12.0-16.0]	20	10.0	2.7	1200	12000
SDVL5650SD120PT	12	8.5	16.0 [13.0-19.0]	25	10.0	3.2	1200	10000
SDVL5650SD140PT	14	10.0	19.0 [16.0-22.0]	30	10.0	5.4	1200	8000
SDVL5650SD180PT	18	12.7	25.0 [22.0-28.0]	40	10.0	5.8	1200	7200
SDVL5650SD220PT	22	15.6	30.0 [26.0-34.0]	45	10.0	6.5	1200	5300
SDVL5650SD260PT	26	18.4	35.0 [31.0-38.0]	58	10.0	7.8	1200	4000
SDVL5650SD300PT	30	21.3	42.0 [37.0-46.0]	65	10.0	9.6	1200	3600
SDVL5650SD330PT	33	23.4	44.0 [39.0-49.0]	72	10.0	9.6	1200	3400
SDVL5650SD380PT	38	30.0	50.0 [46.0-54.0]	75	10.0	12.0	1200	3200
SDVL5650SD420PT	42	32.0	53.0 [48.0-58.0]	86	10.0	9.0	900	3100
SDVL5650SD480PT	48	34.1	60.0 [54.0-67.0]	100	10.0	7.7	900	3000
SDVL5650SD560PT	56	40.0	68.0 [61.0-75.0]	120	10.0	9.0	900	1800
SDVL5650SD600PT	60	46.0	76.0 [69.0-83.0]	130	10.0	6.5	900	1500
SDVL5650SD650PT	65	50.0	82.0 [73.0-91.0]	140	10.0	5.6	900	1400
SDVL5650SD750PT	75	55.0	94.0 [85.0-103.0]	160	10.0	6.0	800	1000
SDVL5650SD850PT	85	60.0	100.0 [90.0-110.0]	170	10.0	6.8	800	800
SDVL5650SD101PT	100	75.0	120.0 [108.0-132.0]	200	10.0	6.0	800	650



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## SPECIFICATIONS

### SDVL8063KA TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		@1mA DC	8/20 $\mu$ s		Energy 10/1000 $\mu$ s	
Units	Volts	Volts	Volts		Volts	Amps		Joules
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL8063KA111PT	150	115	180 [162-198]	300	5.0	6.5	400	270
SDVL8063KA131PT	170	130	205 [185-225]	340	5.0	7.0	400	240
SDVL8063KA141PT	180	140	220 [198-242]	360	5.0	7.5	400	220
SDVL8063KA151PT	200	150	240 [216-264]	395	5.0	9.0	400	200
SDVL8063KA171PT	225	175	270 [243-297]	455	5.0	9.5	400	180
SDVL8063KA191PT	250	195	300 [270-330]	495	5.0	10.0	400	160
SDVL8063KA231PT	300	230	360 [324-396]	595	5.0	11.0	400	130
SDVL8063KA251PT	320	250	390 [351-429]	650	5.0	11.5	400	120
SDVL8063KA271PT	350	275	430 [387-473]	710	5.0	13.0	400	110
SDVL8063KA301PT	385	300	470 [423-517]	775	5.0	15.0	400	100
SDVL8063KA351PT	460	350	560 [504-616]	845	5.0	18.0	400	80
SDVL8063KA381PT	505	385	620 [558-682]	1023	5.0	20.0	400	75

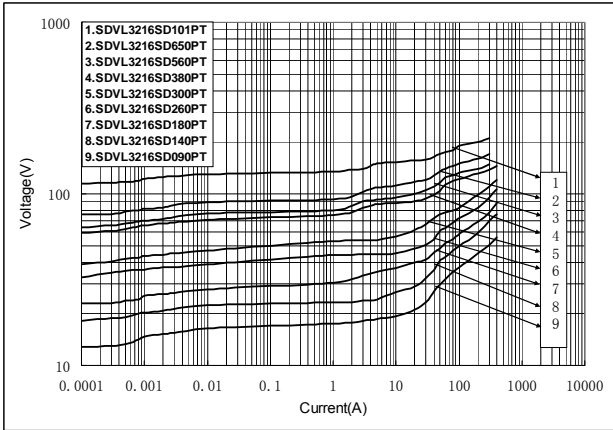
### SDVL10080KA TYPE

Part Number	Max. Working Voltage		Varistor Voltage	Max. Clamping Voltage		Rated Single Pulse Transient		Typical Capacitance
	DC	AC RMS		@1mA DC	8/20 $\mu$ s		Energy 10/1000 $\mu$ s	
Units	Volts	Volts	Volts		Volts	Amps		Joules
Symbol	V <sub>WDC</sub>	V <sub>WAC</sub>	V <sub>B</sub>	V <sub>C</sub>	I <sub>C</sub>	E <sub>T</sub>	I <sub>P</sub>	C
SDVL10080KA111PT	150	115	180 [162-198]	300	10.0	13.0	1200	430
SDVL10080KA131PT	170	130	205 [185-225]	340	10.0	15.0	1200	375
SDVL10080KA141PT	180	140	220 [198-242]	360	10.0	18.0	1200	350
SDVL10080KA151PT	200	150	240 [216-264]	395	10.0	18.5	1200	320
SDVL10080KA171PT	225	175	270 [243-297]	455	10.0	21.0	1200	290
SDVL10080KA191PT	250	195	300 [270-330]	495	10.0	23.0	1200	260
SDVL10080KA231PT	300	230	360 [324-396]	595	10.0	24.0	1200	215
SDVL10080KA251PT	320	250	390 [351-429]	650	10.0	25.0	1200	200
SDVL10080KA271PT	350	275	430 [387-473]	710	10.0	29.0	1200	180
SDVL10080KA301PT	385	300	470 [423-517]	775	10.0	30.0	1200	165
SDVL10080KA351PT	460	350	560 [504-616]	845	10.0	33.0	1200	140
SDVL10080KA381PT	505	385	620 [558-682]	1023	10.0	36.0	1200	125

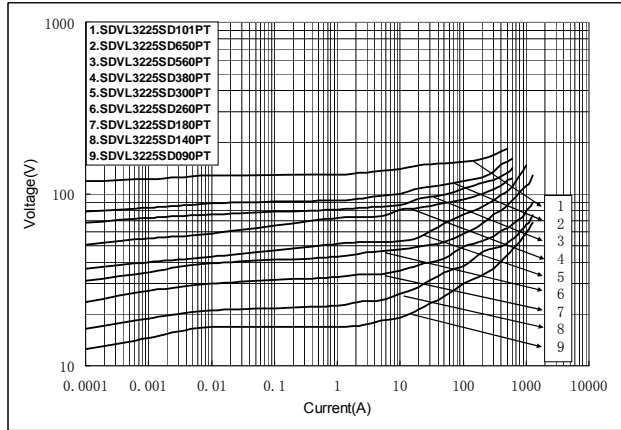
※: Products with other electrical characteristics can be provided upon customer's request. Please contact your local sales.

# TYPICAL ELECTRICAL CHARACTERISTICS

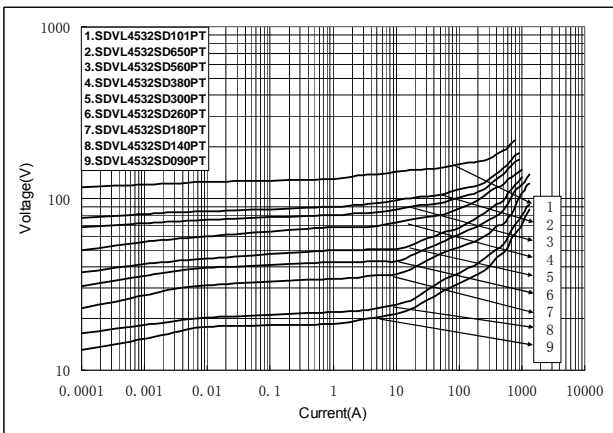
V/I characteristic curves of chip varistor for voltage surge  
SDVL3216SD series



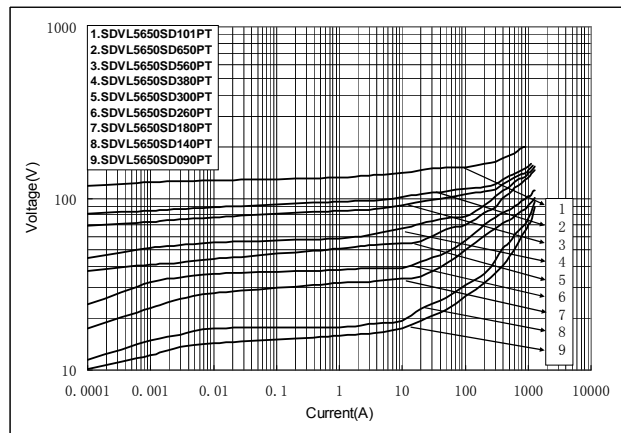
SDVL3225SD series



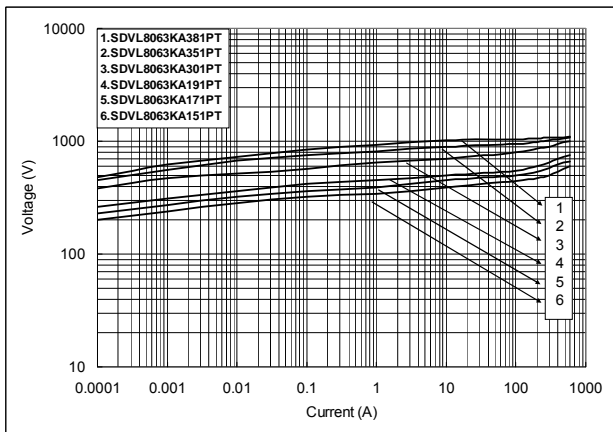
SDVL4532SD series



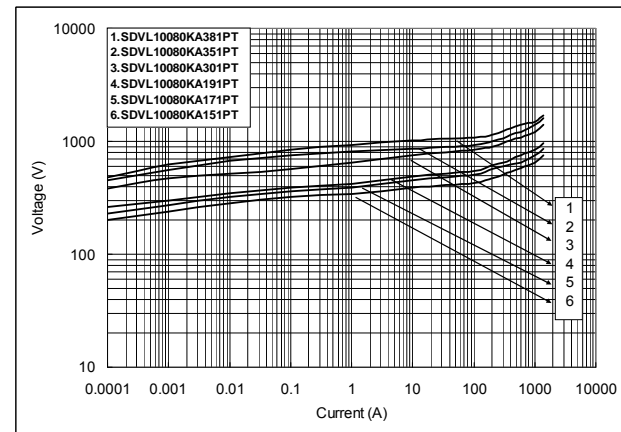
SDVL5650SD series



SDVL8063KA series



SDVL10080KA series



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[820443211E](#) [MOV05131AIA](#) [MOV07231AQA](#) [MOV18131CZA](#) [R71ZOV151HC](#) [D58ZOV500RA01T1](#) [B72205S271K111](#)  
[B72214S110K151](#) [B72214S251K151](#) [B72232B131K1](#) [B72280B271K1](#) [B72530E1140S272](#) [B72540E250K62](#) [B72650M0151K093](#)  
[B72660M0271K093](#) [NTE1V020](#) [NTE1V130](#) [NTE2V010](#) [NTE2V130](#) [238159352716](#) [25FN511K](#) [S10K11G5S5](#) [ERZ-C14DK361U](#) [ERZ-](#)  
[C20DK221U](#) [ERZ-C32CK201B](#) [207869-1](#) [AS-13](#) [TMOV25SP625E](#) [TND10V-471KB00AAA0](#) [B72210S251K531](#) [B72214S200K551](#)  
[B72280B112K1](#) [B72280B381K1](#) [B72590D360A60](#) [B72650M301K93](#) [B72670M1140K72](#) [MOV07251ARA](#) [MOV10131EDA](#)  
[MOV10151EFA](#) [MOV14151CWA](#) [MOV20251DFA](#) [TVZ18EC271KBS](#) [TVZ20EB911KBS](#) [TVZ25D201KBS](#) [TVZ25D241KBS](#)  
[VDRH20X230BSE](#) [VZ07D220KBS](#) [VZ40D241K](#) [VZ25D511KBS-N](#) [VZ20E511KBSX](#)