



Schottky Diodes • Steering Diodes • Transient Voltage Suppressor (TVS) Diodes • Power TVS Diodes • TVS Diode Arrays

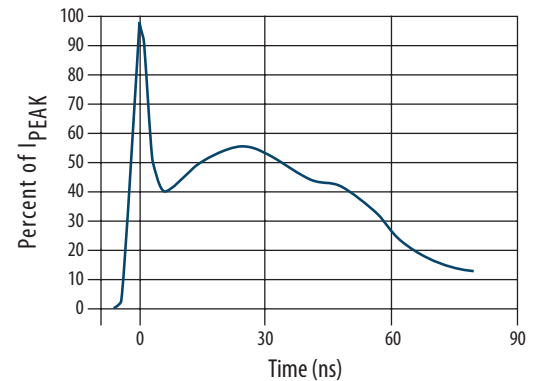
Transient Voltage Suppressor (TVS) Diodes



BOURNS®

ESD Protection Requirements

Electrostatic discharge (ESD) occurs when a charge is exchanged between two objects of unequal charge potential. ESD, occurring most often between people and metal objects, is a result of a build-up of electrons that behave as a capacitor when dielectric isolation is available. Manmade materials such as the sole of a shoe achieve dielectric isolation, while a person walking on carpet creates kinetic energy. The International Electro-technical Commission (IEC) developed a human model ESD event that allows designers to take adequate protection in their electrostatic applications. The IEC defined the ESD discharge impulse with a rise time of less than 1 ns and decay time of 60 ns as highlighted in the adjacent graph. The new standard, IEC61000-4-2 identifies four levels.

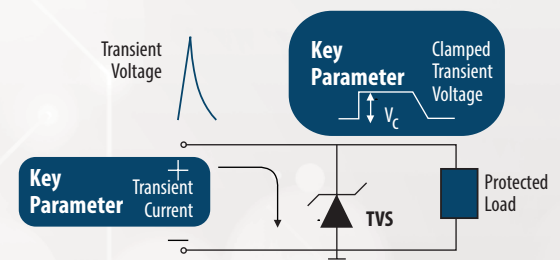
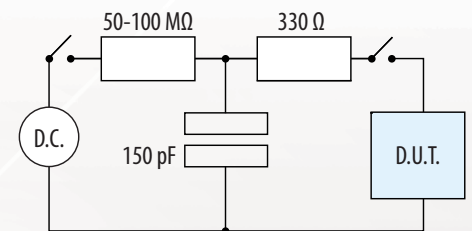


The different levels of the IEC61000-4-2 standard are outlined below:

IEC61000-4-2 Level	Contact Voltage (kV)	Air Discharge Voltage (kV)	Peak Contact Current (A)	Contact Current @ 30 ns (A)	Contact Current @ 60 ns (A)
Level 1	2	2	7.5	4	2
Level 2	4	4	15	8	4
Level 3	6	8	22.5	12	6
Level 4	8	15	30	16	8

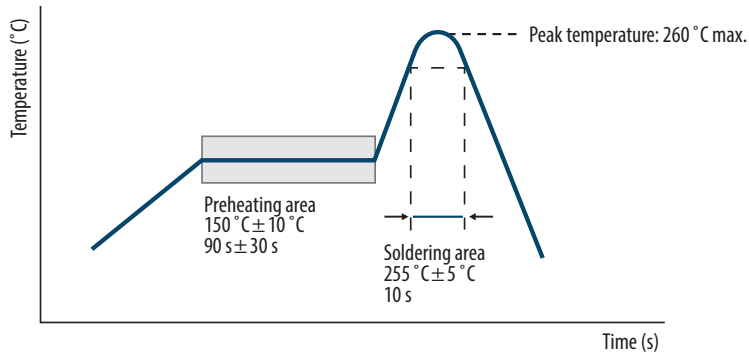
Integrated Circuit (IC) manufacturers of electrostatic sensitive devices design a level of protection into the IC to increase its robustness. However, protection circuits add cost to the device by consuming expensive silicon real estate. IC manufacturers design to standards to protect against board manufacturing processes such as IEC61000-4-2 Level 1, a 2 kV contact voltage. However, human body ESD voltages are nature-determined and can be 15 kV or more which probably will damage the IC.

IEC61000-4-2; Level 4 specifies an air discharge up to 15 kV to take this into consideration. It is common practice to protect all “people-interactive” data ports to Level 4, thereby limiting product damage and increasing the robustness of the equipment. Therefore, the external ESD protector becomes the first level of protection with the IC providing residual second level protection in the design.



ESD Protection Requirements

Recommended Pb Free Reflow Profile



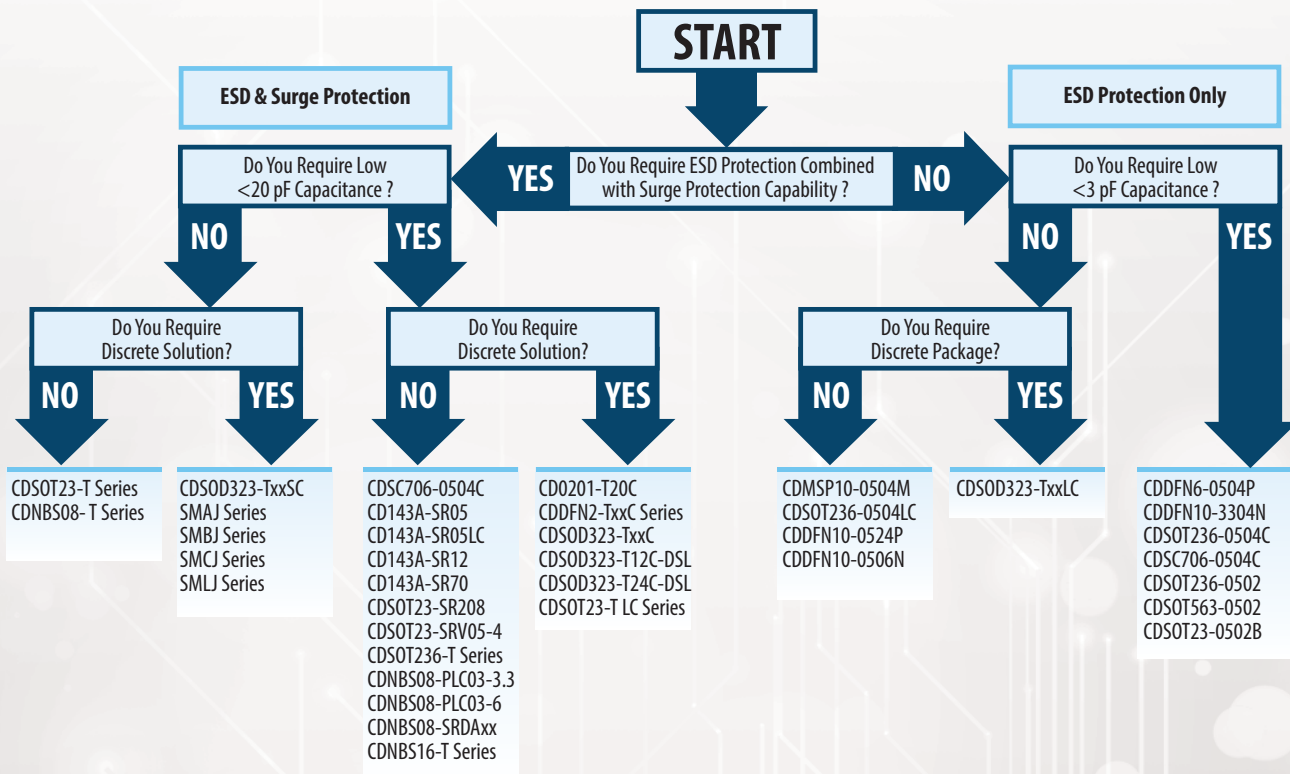
Features

- RoHS compliant*
- Discrete & array configurations
- Unidirectional & bidirectional configurations
- Standard, low and ultralow capacitance offering
- ESD protection per IEC 61000-4-2 standard
- EFT protection per IEC 61000-4-4 standard
- Surge protection per IEC 61000-4-5 standard
- SMT packages

Applications

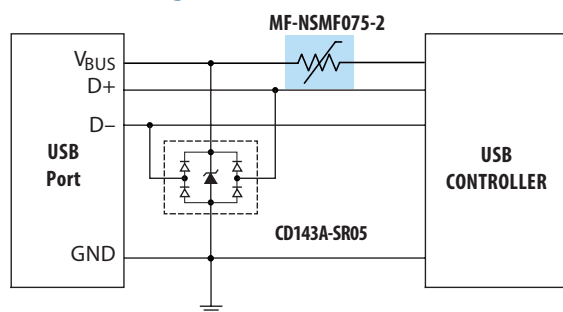
- General purpose ESD protection
- HDMI 1.4 and HDMI 2.0 port protection
- Antenna protection
- High speed communication ports such as USB 2.0, USB 3.0, IEEE1394 and Gb Ethernet
- Fast communication ports such as USB1.1 and 10/100b Ethernet ports
- RS-232, RS-422 & RS-485 data port applications
- Thunderbolt™ port protection
- Display Port 1.2 protection
- T1/E1

Bourns® Diode Product Selection Flowchart

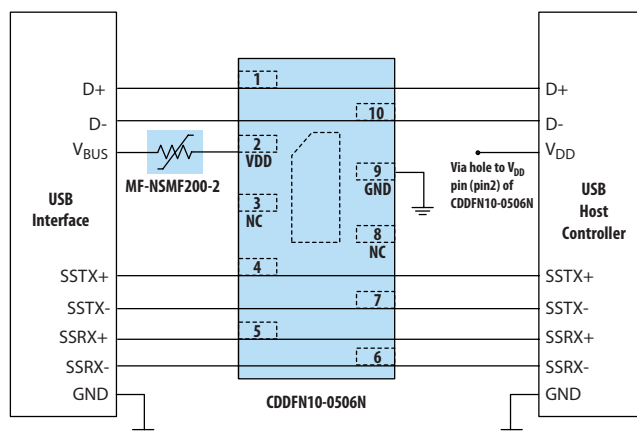


ESD Protection Product Applications

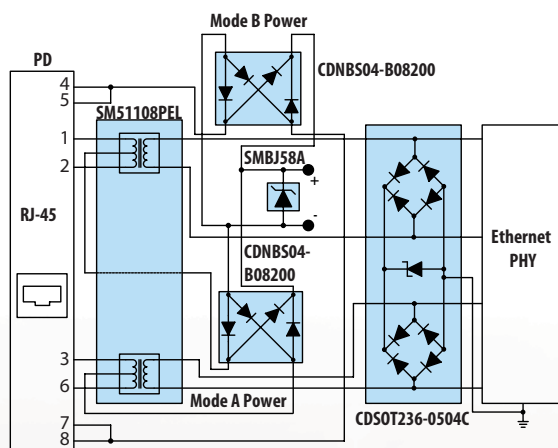
USB 2.0 Single Port Protection



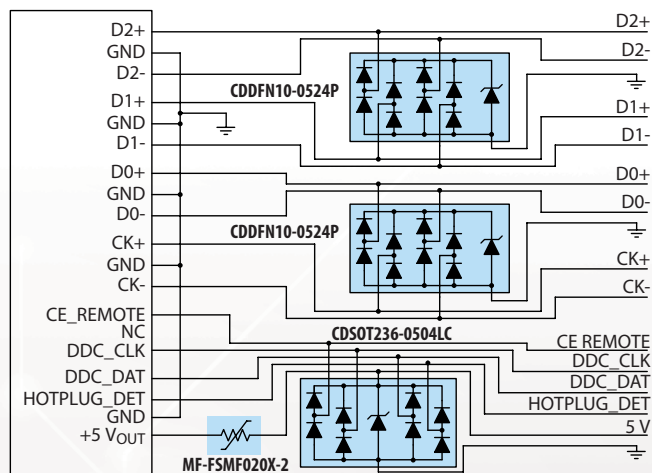
USB 3.0 ESD & Overcurrent Protection



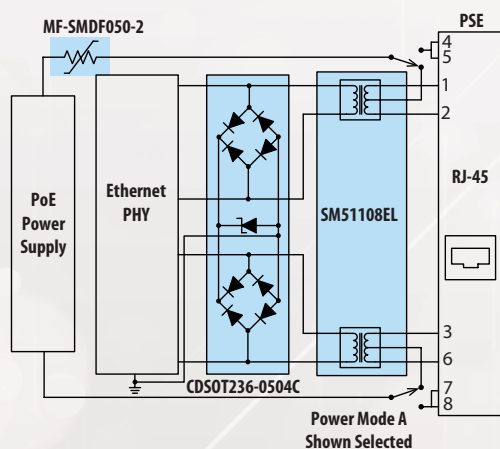
Power Over Ethernet (POE) PD Unit Protection



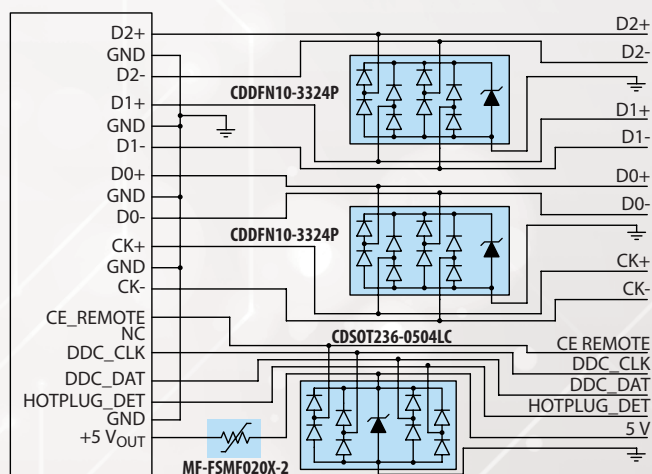
HDMI 1.4 ESD & Overcurrent Protection



Power Over Ethernet (POE) PSE Unit Protection

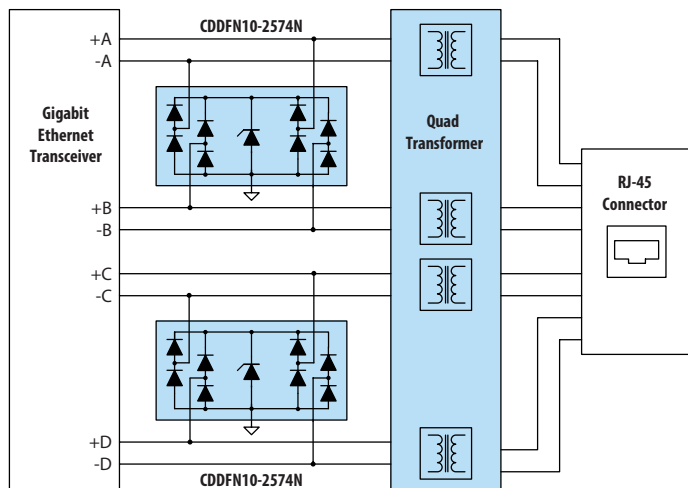


HDMI 2.0 ESD & Overcurrent Protection

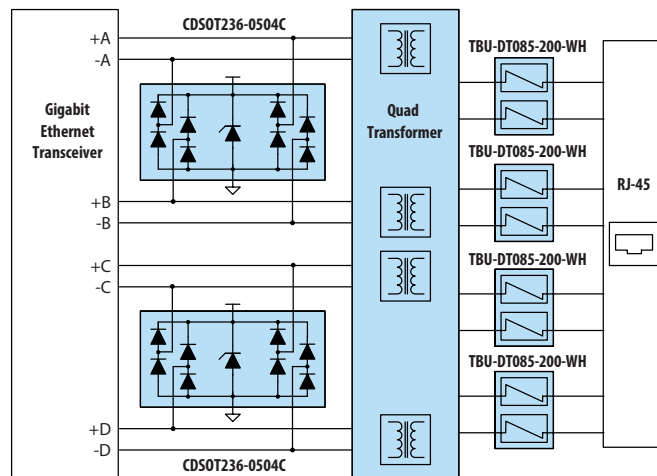


ESD Protection Product Applications

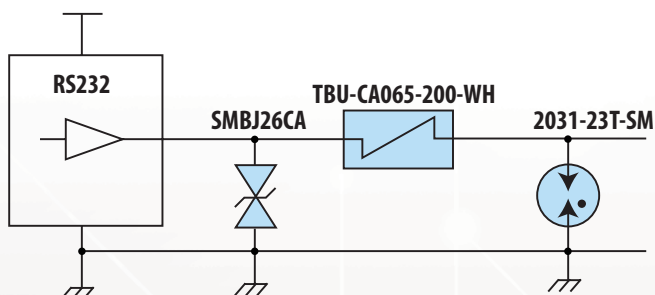
Gb Ethernet Surge and ESD Protection



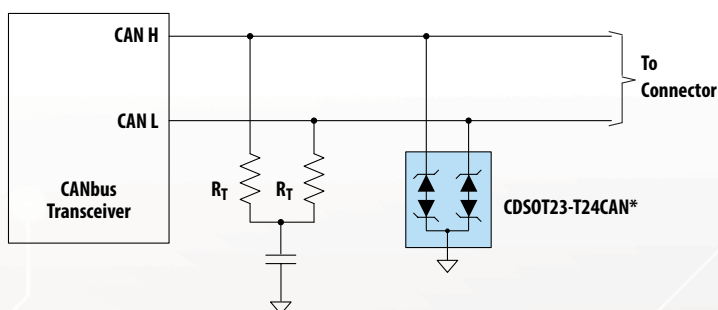
Ethernet Power Contact & Surge Protection



RS-232 Serial Port Surge Protection

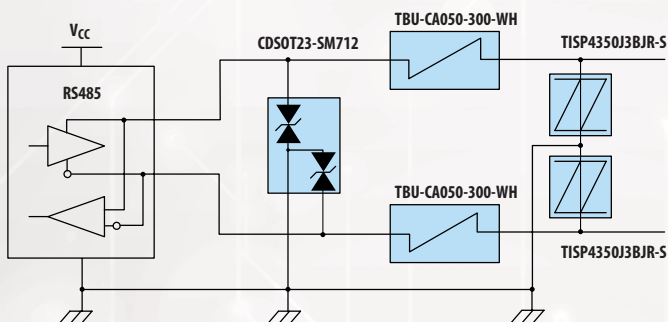


CANbus Protection

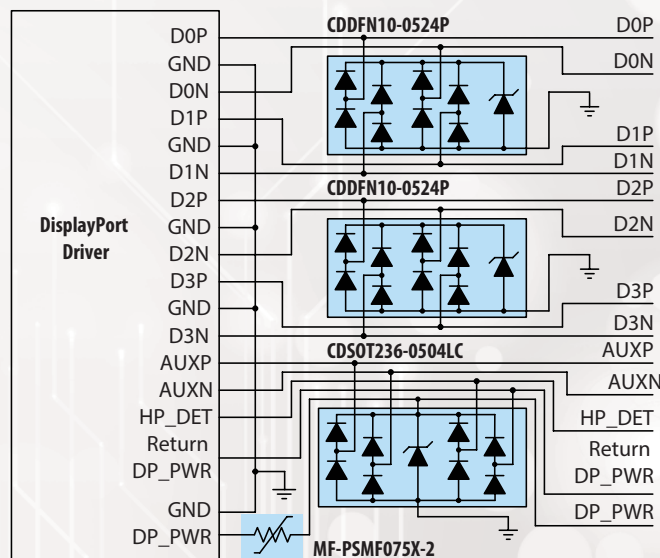


**Q" suffix for AEC-Q101 compliance.

RS-485 Serial Port ESD/EFT/ Surge Protection



Display Port 1.2 ESD & Overcurrent Protection



Discrete Standard Capacitance Transient Voltage Suppressor (TVS) Diodes



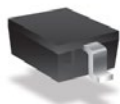
Part Number	Pkg. Size	Electrical Characteristics ($T_A = 25^\circ\text{C}$)					
		I_{pp} (A)	V_C (V)	I_{pp} (A)	P_{pk} (W)	V_{br} min. (V)	C_t Typ (pF)
CD0201-T20C	0201	20	34			22.8	10
CDSOD323-T05S*	SOD-323	5	13.5	42	500	6	350
CDSOD323-T08S	SOD-323	8	16.9	34	500	8.5	250
CDSOD323-T12S	SOD-323	12	25.9	21	500	13.3	150
CDSOD323-T15S	SOD-323	15	30	17	500	16.7	100
CDSOD323-T18S	SOD-323	18	40	9	500	20	90
CDSOD323-T24S	SOD-323	24	49	12	500	26.7	88
CDSOD323-T36S	SOD-323	36	75	5	500	40	75
CDSOD323-T03SC	SOD-323	3.3	10.9	43	400	4	200
CDSOD323-T05SC	SOD-323	5	14.5	28	400	6	175
CDSOD323-T08SC	SOD-323	8	18.5	17	400	8.5	150
CDSOD323-T12SC	SOD-323	12	29.5	14	400	13.3	50
CDSOD323-T15SC	SOD-323	15	33	12	400	16.7	40
CDSOD323-T18SC	SOD-323	18	40	9	400	20	40
CDSOD323-T24SC	SOD-323	24	46.2	9	400	26.7	40
CDSOD323-T36SC	SOD-323	36	75	5	400	40	35

*"Q" suffix for AEC-Q101 compliance.

Symbols & Terms

C_t	Diode Capacitance
I_o	Average Rectified Current
I_f	Forward Current
I_r	Reverse Current
I_{surge}	Non-Repetitive Current
I_{rsm}	Reverse Surge Current
I_L	Leakage Current
P_{pk}	Peak Pulse Power Dissipation
T_d	Response Time
V_f	Forward Voltage
V_r	Reverse Voltage
V_{rrm}	Repetitive Reverse Peak Voltage
V_{rwm}	Working Peak Reverse Voltage
V_{rsm}	Reverse Voltage @ I_{rsm}
V_{br}	Breakdown Voltage
V_{wm}	Working Peak Voltage
V_{DC}	Operating Voltage
V_C	Clamping Voltage
V_t	Trigger Voltage

Discrete Low Capacitance Transient Voltage Suppressor (TVS) Diodes



Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)					
		V _{WM} (V)	V _C (V)	I _{PP} (A)	P _{PK} (W)	V _{BR} min. (V)	C _T Typ (pF)
CDSOD323-T03	SOD-323	3.3	19	20	350	4	3
CDSOD323-T05	SOD-323	5	18.3	17	350	6	3
CDSOD323-T08	SOD-323	8	18.5	17	350	8.5	3
CDSOD323-T12	SOD-323	12	28.3	11	350	13.3	3
CDSOD323-T15	SOD-323	15	31.8	10	350	16.7	3
CDSOD323-T18	SOD-323	18	45	8	350	20	3
CDSOD323-T24	SOD-323	24	56	6	350	26.7	3
CDSOD323-T03C	SOD-323	3.3	19	20	350	4	3
CDSOD323-T05C	SOD-323	5	18.3	17	350	6	3
CDSOD323-T08C	SOD-323	8	18.5	17	350	8.5	3
CDSOD323-T12C	SOD-323	12	28.3	11	350	13.3	3
CDSOD323-T15C	SOD-323	15	31.8	10	350	16.7	3
CDSOD323-T18C	SOD-323	18	45	8	350	20	3
CDSOD323-T24C	SOD-323	24	56	6	350	26.7	3
CDSOD323-T12C-DSL*	SOD-323	12	28.3	11	350	13.3	3
CDSOD323-T24C-DSL*	SOD-323	24	56	6	350	26.7	3

*"Q" suffix for AEC-Q101 compliance.

Discrete Ultra Low Capacitance Transient Voltage Suppressor (TVS) Diodes



Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)					
		V _{WM} (V)	V _C (V)	I _{PP} (A)	P _{PK} (W)	V _{BR} min. (V)	C _T Typ (pF)
CDDFN2-T5.0LC	DFN-2	5	25			7	0.5
CDSOD323-T05L	SOD-323	5	18.3	15	350	6	1
CDSOD323-T08L	SOD-323	8	18.3	15	350	8.5	1
CDSOD323-T12L	SOD-323	12	28.6	11	350	13.3	1
CDSOD323-T15L	SOD-323	15	31.8	10	350	16.7	1
CDSOD323-T18L	SOD-323	18	45	8	350	20	1
CDSOD323-T24L	SOD-323	24	56	6	350	26.7	1
CDSOD323-T05LC	SOD-323	5	18.3	15	250	6	1
CDSOD323-T08LC	SOD-323	8	18.3	15	250	8.5	1
CDSOD323-T12LC	SOD-323	12	28.6	11	250	13.3	1
CDSOD323-T15LC	SOD-323	15	31.8	10	250	16.7	1
CDSOD323-T18LC	SOD-323	18	45	8	250	20	1
CDSOD323-T24LC	SOD-323	24	56	6	250	26.7	1

Discrete 400 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
SMAJ5.0A*	SMAJ5.0CA*	SMA	5	9.2	43.5	400	6.4
SMAJ6.0A*	SMAJ6.0CA*	SMA	6	10.3	38.8	400	6.67
SMAJ6.5A*	SMAJ6.5CA*	SMA	6.5	11.2	35.7	400	7.22
SMAJ7.0A*	SMAJ7.0CA*	SMA	7	12	33.3	400	7.78
SMAJ7.5A*	SMAJ7.5CA*	SMA	7.5	12.9	31	400	8.33
SMAJ8.0A*	SMAJ8.0CA*	SMA	8	13.6	29.4	400	8.89
SMAJ8.5A*	SMAJ8.5CA*	SMA	8.5	14.4	27.8	400	9.44
SMAJ9.0A*	SMAJ9.0CA*	SMA	9	15.4	26	400	10
SMAJ10A*	SMAJ10CA*	SMA	10	17	23.5	400	11.1
SMAJ11A*	SMAJ11CA*	SMA	11	18.2	22	400	12.2
SMAJ12A*	SMAJ12CA*	SMA	12	19.9	20.1	400	13.3
SMAJ13A*	SMAJ13CA*	SMA	13	21.5	18.6	400	14.4
SMAJ14A*	SMAJ14CA*	SMA	14	23.2	17.2	400	15.6
SMAJ15A*	SMAJ15CA*	SMA	15	24.4	16.4	400	16.7
SMAJ16A*	SMAJ16CA*	SMA	16	26	15.3	400	17.8
SMAJ17A*	SMAJ17CA*	SMA	17	27.6	14.5	400	18.9
SMAJ18A*	SMAJ18CA*	SMA	18	29.2	13.7	400	20
SMAJ20A*	SMAJ20CA*	SMA	20	32.4	12.3	400	22.2
SMAJ22A*	SMAJ22CA*	SMA	22	35.5	11.3	400	24.4
SMAJ24A*	SMAJ24CA*	SMA	24	38.9	10.3	400	26.7
SMAJ26A*	SMAJ26CA*	SMA	26	42.1	9.5	400	28.9
SMAJ28A*	SMAJ28CA*	SMA	28	45.4	8.8	400	31.1
SMAJ30A*	SMAJ30CA*	SMA	30	48.4	8.3	400	33.3
SMAJ33A*	SMAJ33CA*	SMA	33	53.3	7.5	400	36.7
SMAJ36A*	SMAJ36CA*	SMA	36	58.1	6.9	400	40
SMAJ40A*	SMAJ40CA*	SMA	40	64.5	6.2	400	44.4
SMAJ43A*	SMAJ43CA*	SMA	43	69.4	5.8	400	47.8
SMAJ45A*	SMAJ45CA*	SMA	45	72.7	5.5	400	50
SMAJ48A*	SMAJ48CA*	SMA	48	77.4	5.2	400	53.3
SMAJ51A*	SMAJ51CA*	SMA	51	82.4	4.9	400	56.7
SMAJ54A*	SMAJ54CA*	SMA	54	87.1	4.6	400	60
SMAJ58A*	SMAJ58CA*	SMA	58	93.6	4.3	400	64.4
SMAJ60A*	SMAJ60CA*	SMA	60	96.8	4.1	400	66.7
SMAJ64A*	SMAJ64CA*	SMA	64	103	3.9	400	71.1
SMAJ70A*	SMAJ70CA*	SMA	70	113	3.5	400	77.8
SMAJ75A*	SMAJ75CA*	SMA	75	121	3.3	400	83.3
SMAJ78A*	SMAJ78CA*	SMA	78	126	3.2	400	86.7
SMAJ85A*	SMAJ85CA*	SMA	85	137	2.9	400	94.4
SMAJ90A*	SMAJ90CA*	SMA	90	146	2.7	400	100
SMAJ100A*	SMAJ100CA*	SMA	100	162	2.5	400	111
SMAJ110A*	SMAJ110CA*	SMA	110	177	2.3	400	122
SMAJ120A*	SMAJ120CA*	SMA	120	193	2	400	133
SMAJ130A*	SMAJ130CA*	SMA	130	209	1.9	400	144
SMAJ150A*	SMAJ150CA*	SMA	150	243	1.6	400	167
SMAJ160A*	SMAJ160CA*	SMA	160	259	1.5	400	178
SMAJ170A*	SMAJ170CA*	SMA	170	275	1.5	400	189
SMAJ180A*	SMAJ180CA*	SMA	180	292	1.4	400	201
SMAJ200A*	SMAJ200CA*	SMA	200	324	1.2	400	224
SMAJ220A*	SMAJ220CA*	SMA	220	356	1.1	400	246
SMAJ250A	SMAJ250CA	SMA	250	405	1.0	400	279
SMAJ300A	SMAJ300CA	SMA	300	486	0.8	400	335
SMAJ350A	SMAJ350CA	SMA	350	567	0.7	400	391
SMAJ400A	SMAJ400CA	SMA	400	648	0.6	400	447
SMAJ434A	SMAJ434CA	SMA	434	698	0.6	400	485
SMAJ440A	SMAJ440CA	SMA	440	713	0.6	400	492
SMAJ495A	SMAJ495CA	SMA	495	760	0.5	400	522

*"Q" suffix for AEC-Q101 compliance.

Discrete 400 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
P4SMA6.8A*	P4SMA6.8CA*	SMA	6	10.5	39.0	400	6.5
P4SMA7.5A*	P4SMA7.5CA*	SMA	6	11.3	36.3	400	7.13
P4SMA8.2A*	P4SMA8.2CA*	SMA	7.0	12.1	33.9	400	7.79
P4SMA9.1A*	P4SMA9.1CA*	SMA	8	13	30.6	400	8.65
P4SMA10A*	P4SMA10CA*	SMA	8.6	14.5	28	400	9.50
P4SMA11A*	P4SMA11CA*	SMA	9	15.6	26.3	400	10.50
P4SMA12A*	P4SMA12CA*	SMA	10.2	16.7	24.6	400	11.40
P4SMA13A*	P4SMA13CA*	SMA	11	18.2	23	400	12
P4SMA15A*	P4SMA15CA*	SMA	13	21	19.3	400	14.3
P4SMA16A*	P4SMA16CA*	SMA	14	22.5	18	400	15.2
P4SMA18A*	P4SMA18CA*	SMA	15	25.5	16.1	400	17.1
P4SMA20A*	P4SMA20CA*	SMA	17	27.7	14.8	400	19.0
P4SMA22A*	P4SMA22CA*	SMA	19	30.6	13.4	400	20.9
P4SMA24A*	P4SMA24CA*	SMA	21	33.2	12.3	400	22.8
P4SMA27A*	P4SMA27CA*	SMA	23	38	10.9	400	25.7
P4SMA30A*	P4SMA30CA*	SMA	26	41.4	9.9	400	28.5
P4SMA33A*	P4SMA33CA*	SMA	28	45.7	9.0	400	31
P4SMA36A*	P4SMA36CA*	SMA	31	49.9	8.2	400	34.2
P4SMA39A*	P4SMA39CA*	SMA	33	53.9	7.6	400	37.1
P4SMA43A*	P4SMA43CA*	SMA	37	59.3	6.9	400	40.9
P4SMA47A*	P4SMA47CA*	SMA	40	64.8	6.3	400	44.7
P4SMA51A*	P4SMA51CA*	SMA	44	70.1	5.8	400	48.5
P4SMA56A*	P4SMA56CA*	SMA	48	77.0	5.3	400	53.2
P4SMA62A*	P4SMA62CA*	SMA	53	85.0	4.8	400	58.9
P4SMA68A*	P4SMA68CA*	SMA	58	92.0	4.5	400	65
P4SMA75A*	P4SMA75CA*	SMA	64	103.0	4.0	400	71.3
P4SMA82A*	P4SMA82CA*	SMA	70	113.0	3.6	400	77.9
P4SMA91A*	P4SMA91CA*	SMA	78	125.0	3.3	400	87
P4SMA100A*	P4SMA100CA*	SMA	86	137.0	3.0	400	95.0
P4SMA110A*	P4SMA110CA*	SMA	94	152.0	2.7	400	105.0
P4SMA120A*	P4SMA120CA*	SMA	102	165.0	2.5	400	114
P4SMA130A*	P4SMA130CA*	SMA	111	179.0	2.3	400	124.0
P4SMA150A*	P4SMA150CA*	SMA	128	207.0	2.0	400	143.0
P4SMA160A*	P4SMA160CA*	SMA	136	219	1.9	400	152.0
P4SMA170A*	P4SMA170CA*	SMA	145	234	1.8	400	162.0
P4SMA180A*	P4SMA180CA*	SMA	154	246	1.7	400	171.0
P4SMA200A*	P4SMA200CA*	SMA	171	274	1.5	400	190.0
P4SMA220A*	P4SMA220CA*	SMA	185	328	1.3	400	209.0
P4SMA250A*	P4SMA250CA*	SMA	214	344	1.2	400	237
P4SMA300A	P4SMA300CA	SMA	256	414	1.0	400	285
P4SMA350A	P4SMA350CA	SMA	300	482	0.9	400	332
P4SMA400A	P4SMA400CA	SMA	342	548	1	400	380
P4SMA440A	P4SMA440CA	SMA	376	602	0.7	400	418
P4SMA480A	P4SMA480CA	SMA	408	658	0.6	400	456
P4SMA510A	P4SMA510CA	SMA	434	698	0.6	400	485
P4SMA530A	P4SMA530CA	SMA	477	725	0.6	400	504
P4SMA540A	P4SMA540CA	SMA	486	740	0.5	400	513
P4SMA550A	P4SMA550CA	SMA	495	760	0.5	400	523

*"Q" suffix for AEC-Q101 compliance.

Discrete 600 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
SMBJ5.0A	SMBJ5.0CA	SMB	5	9.2	65.2	600	6.4
SMBJ6.0A	SMBJ6.0CA	SMB	6	10.3	58.3	600	6.67
SMBJ6.5A	SMBJ6.5CA	SMB	6.5	11.2	53.6	600	7.22
SMBJ7.0A	SMBJ7.0CA	SMB	7	12	50	600	7.78
SMBJ7.5A	SMBJ7.5CA	SMB	7.5	12.9	46.5	600	8.33
SMBJ8.0A	SMBJ8.0CA	SMB	8	13.6	44.1	600	8.89
SMBJ8.5A	SMBJ8.5CA	SMB	8.5	14.4	41.7	600	9.44
SMBJ9.0A	SMBJ9.0CA	SMB	9	15.4	39	600	10
SMBJ10A	SMBJ10CA	SMB	10	17	35.3	600	11.1
SMBJ11A	SMBJ11CA	SMB	11	18.2	33	600	12.2
SMBJ12A*	SMBJ12CA*	SMB	12	19.9	30.2	600	13.3
SMBJ13A*	SMBJ13CA*	SMB	13	21.5	27.9	600	14.4
SMBJ14A*	SMBJ14CA*	SMB	14	23.2	25.8	600	15.6
SMBJ15A*	SMBJ15CA*	SMB	15	24.4	24	600	16.7
SMBJ16A*	SMBJ16CA*	SMB	16	26	23.1	600	17.8
SMBJ17A*	SMBJ17CA*	SMB	17	27.6	21.7	600	18.9
SMBJ18A*	SMBJ18CA*	SMB	18	29.2	20.5	600	20
SMBJ20A*	SMBJ20CA*	SMB	20	32.4	18.5	600	22.2
SMBJ22A*	SMBJ22CA*	SMB	22	35.5	16.9	600	24.4
SMBJ24A*	SMBJ24CA*	SMB	24	38.9	15.4	600	26.7
SMBJ26A*	SMBJ26CA*	SMB	26	42.1	14.2	600	28.9
SMBJ28A*	SMBJ28CA*	SMB	28	45.4	13.2	600	31.1
SMBJ30A*	SMBJ30CA*	SMB	30	48.4	12.4	600	33.3
SMBJ33A*	SMBJ33CA*	SMB	33	53.3	11.3	600	36.7
SMBJ36A*	SMBJ36CA*	SMB	36	58.1	10.3	600	40
SMBJ40A*	SMBJ40CA*	SMB	40	64.5	9.3	600	44.4
SMBJ43A*	SMBJ43CA*	SMB	43	69.4	8.6	600	47.8
SMBJ45A*	SMBJ45CA*	SMB	45	72.7	8.3	600	50
SMBJ48A*	SMBJ48CA*	SMB	48	77.4	7.7	600	53.3
SMBJ51A*	SMBJ51CA*	SMB	51	82.4	7.3	600	56.7
SMBJ54A*	SMBJ54CA*	SMB	54	87.1	6.9	600	60
SMBJ58A*	SMBJ58CA*	SMB	58	93.6	6.4	600	64.4
SMBJ60A	SMBJ60CA	SMB	60	96.8	6.2	600	66.7
SMBJ64A	SMBJ64CA	SMB	64	103	5.8	600	71.1
SMBJ70A	SMBJ70CA	SMB	70	113	5.3	600	77.8
SMBJ75A	SMBJ75CA	SMB	75	121	4.9	600	83.3
SMBJ78A	SMBJ78CA	SMB	78	126	4.7	600	86.7
SMBJ85A	SMBJ85CA	SMB	85	137	4.4	600	94.4
SMBJ90A	SMBJ90CA	SMB	90	146	4.1	600	100
SMBJ100A	SMBJ100CA	SMB	100	162	3.7	600	111
SMBJ110A	SMBJ110CA	SMB	110	177	3.4	600	122
SMBJ120A	SMBJ120CA	SMB	120	193	3.1	600	133
SMBJ130A	SMBJ130CA	SMB	130	209	2.9	600	144
SMBJ150A	SMBJ150CA	SMB	150	243	2.5	600	167
SMBJ160A	SMBJ160CA	SMB	160	259	2.3	600	178
SMBJ170A	SMBJ170CA	SMB	170	275	2.2	600	189

*"Q" suffix for AEC-Q101 compliance.

Discrete 600 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} m (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
P6SMB6.8A	P6SMB6.8CA	SMB	5.8	10.5	58.1	600	6.45
P6SMB7.5A	P6SMB7.5CA	SMB	6.4	11.3	54	600	7.13
P6SMB8.2A	P6SMB8.2CA	SMB	7.02	12.1	50.4	600	7.79
P6SMB9.1A	P6SMB9.1CA	SMB	7.78	13.4	45.5	600	8.65
P6SMB10A	P6SMB10CA	SMB	8.55	14.5	42.1	600	9.5
P6SMB11A	P6SMB11CA	SMB	9.4	15.6	39.1	600	10.5
P6SMB12A	P6SMB12CA	SMB	10.2	16.7	36.5	600	11.4
P6SMB13A	P6SMB13CA	SMB	11.1	18.2	33.5	600	12.4
P6SMB15A	P6SMB15CA	SMB	12.8	21.2	28.8	600	14.3
P6SMB16A	P6SMB16CA	SMB	13.6	22.5	27.1	600	15.2
P6SMB18A	P6SMB18CA	SMB	15.3	25.5	24.2	600	17.1
P6SMB20A	P6SMB20CA	SMB	17.1	27.7	22	600	19
P6SMB22A	P6SMB22CA	SMB	18.8	30.6	19.9	600	20.9
P6SMB24A	P6SMB24CA	SMB	20.5	33.2	18.4	600	22.8
P6SMB27A	P6SMB27CA	SMB	23.1	37.5	16.3	600	25.7
P6SMB30A	P6SMB30CA	SMB	25.6	41.4	14.7	600	28.5
P6SMB33A	P6SMB33CA	SMB	28.2	45.7	13.3	600	31.4
P6SMB36A	P6SMB36CA	SMB	30.8	49.9	12.2	600	34.2
P6SMB39A	P6SMB39CA	SMB	33.3	53.9	11.3	600	37.1
P6SMB43A	P6SMB43CA	SMB	36.8	59.3	10.3	600	40.9
P6SMB47A	P6SMB47CA	SMB	40.2	64.8	9.4	600	44.7
P6SMB51A	P6SMB51CA	SMB	43.6	70.1	8.7	600	48.5
P6SMB56A	P6SMB56CA	SMB	47.8	77	7.9	600	53.2
P6SMB62A	P6SMB62CA	SMB	53	85	7.2	600	58.9
P6SMB68A	P6SMB68CA	SMB	58.1	92	6.6	600	64.6
P6SMB75A	P6SMB75CA	SMB	64.1	103	5.9	600	71.3
P6SMB82A	P6SMB82CA	SMB	70.1	113	5.4	600	77.9
P6SMB91A	P6SMB91CA	SMB	77.8	125	4.9	600	86.5
P6SMB100A	P6SMB100CA	SMB	85.5	137	4.5	600	95
P6SMB110A	P6SMB110CA	SMB	94	152	4	600	105
P6SMB120A	P6SMB120CA	SMB	102	165	3.7	600	114
P6SMB130A	P6SMB130CA	SMB	111	179	3.4	600	124
P6SMB150A	P6SMB150CA	SMB	128	207	2.9	600	143
P6SMB160A	P6SMB160CA	SMB	136	219	2.8	600	152
P6SMB170A	P6SMB170CA	SMB	145	234	2.6	600	162
P6SMB180A	P6SMB180CA	SMB	154	246	2.5	600	171
P6SMB200A	P6SMB200CA	SMB	171	274	2.2	600	190
P6SMB220A	P6SMB220CA	SMB	185	328	1.9	600	209
P6SMB250A	P6SMB250CA	SMB	214	344	1.8	600	237
P6SMB300A	P6SMB300CA	SMB	256	414	1.5	600	285
P6SMB350A	P6SMB350CA	SMB	300	482	1.3	600	332
P6SMB400A	P6SMB400CA	SMB	342	548	1.1	600	380
P6SMB440A	P6SMB440CA	SMB	376	602	1	600	418
P6SMB480A	P6SMB480CA	SMB	408	658	0.9	600	456
P6SMB510A	P6SMB510CA	SMB	434	698	0.9	600	485
P6SMB530A	P6SMB530CA	SMB	477	725	0.8	600	503.5
P6SMB540A	P6SMB540CA	SMB	486	740	0.8	600	513
P6SMB550A	P6SMB550CA	SMB	495	760	0.8	600	522.5

Discrete 1500 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
SMCJ5.0A	SMCJ5.0CA	SMC	5	9.2	163	1500	6.4
SMCJ6.0A	SMCJ6.0CA	SMC	6	10.3	145.6	1500	6.67
SMCJ6.5A	SMCJ6.5CA	SMC	6.5	11.2	133.9	1500	7.22
SMCJ7.0A	SMCJ7.0CA	SMC	7	12	125	1500	7.78
SMCJ7.5A	SMCJ7.5CA	SMC	7.5	12.9	116.3	1500	8.33
SMCJ8.0A	SMCJ8.0CA	SMC	8	13.6	110.3	1500	8.89
SMCJ8.5A	SMCJ8.5CA	SMC	8.5	14.4	104.2	1500	9.44
SMCJ9.0A	SMCJ9.0CA	SMC	9	15.4	97.4	1500	10
SMCJ10A	SMCJ10CA	SMC	10	17	88.2	1500	11.1
SMCJ11A	SMCJ11CA	SMC	11	18.2	82.4	1500	12.2
SMCJ12A*	SMCJ12CA*	SMC	12	19.9	75.3	1500	13.3
SMCJ13A*	SMCJ13CA*	SMC	13	21.5	69.7	1500	14.4
SMCJ14A*	SMCJ14CA*	SMC	14	23.2	64.7	1500	15.6
SMCJ15A*	SMCJ15CA*	SMC	15	24.4	61.5	1500	16.7
SMCJ16A*	SMCJ16CA*	SMC	16	26	57.7	1500	17.8
SMCJ17A*	SMCJ17CA*	SMC	17	27.6	53.3	1500	18.9
SMCJ18A*	SMCJ18CA*	SMC	18	29.2	51.4	1500	20
SMCJ20A*	SMCJ20CA*	SMC	20	32.4	46.3	1500	22.2
SMCJ22A*	SMCJ22CA*	SMC	22	35.5	42.2	1500	24.4
SMCJ24A*	SMCJ24CA*	SMC	24	38.9	38.6	1500	26.7
SMCJ26A*	SMCJ26CA*	SMC	26	42.1	35.6	1500	28.9
SMCJ28A*	SMCJ28CA*	SMC	28	45.4	33	1500	31.1
SMCJ30A*	SMCJ30CA*	SMC	30	48.4	31	1500	33.3
SMCJ33A*	SMCJ33CA*	SMC	33	53.3	28.1	1500	36.7
SMCJ36A*	SMCJ36CA*	SMC	36	58.1	25.8	1500	40
SMCJ40A*	SMCJ40CA*	SMC	40	64.5	23.3	1500	44.4
SMCJ43A*	SMCJ43CA*	SMC	43	69.4	21.6	1500	47.8
SMCJ45A*	SMCJ45CA*	SMC	45	72.7	20.6	1500	50
SMCJ48A*	SMCJ48CA*	SMC	48	77.4	19.4	1500	53.3
SMCJ51A*	SMCJ51CA*	SMC	51	82.4	18.2	1500	56.7
SMCJ54A*	SMCJ54CA*	SMC	54	87.1	17.2	1500	60
SMCJ58A*	SMCJ58CA*	SMC	58	93.6	16	1500	64.4
SMCJ60A	SMCJ60CA	SMC	60	96.8	15.5	1500	66.7
SMCJ64A	SMCJ64CA	SMC	64	103	14.6	1500	71.1
SMCJ70A	SMCJ70CA	SMC	70	113	13.3	1500	77.8
SMCJ75A	SMCJ75CA	SMC	75	121	12.4	1500	83.3
SMCJ78A	SMCJ78CA	SMC	78	126	11.4	1500	86.7
SMCJ85A	SMCJ85CA	SMC	85	137	10.4	1500	94.4
SMCJ90A	SMCJ90CA	SMC	90	146	10.3	1500	100
SMCJ100A	SMCJ100CA	SMC	100	162	9.3	1500	111
SMCJ110A	SMCJ110CA	SMC	110	177	8.4	1500	122
SMCJ120A	SMCJ120CA	SMC	120	193	7.9	1500	133
SMCJ130A	SMCJ130CA	SMC	130	209	7.2	1500	144
SMCJ150A	SMCJ150CA	SMC	150	243	6.2	1500	167
SMCJ160A	SMCJ160CA	SMC	160	259	5.8	1500	178
SMCJ170A	SMCJ170CA	SMC	170	275	5.5	1500	189

*"Q" suffix for AEC-Q101 compliance.

Discrete 1500 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
1.5SMC6.8A	1.5SMC6.8CA	SMC	5.8	10.5	144.8	1500	6.45
1.5SMC7.5A	1.5SMC7.5CA	SMC	6.4	11.3	134.5	1500	7.13
1.5SMC8.2A	1.5SMC8.2CA	SMC	7.02	12.1	125.6	1500	7.79
1.5SMC9.1A	1.5SMC9.1CA	SMC	7.78	13.4	113.4	1500	8.65
1.5SMC10A	1.5SMC10CA	SMC	8.55	14.5	104.8	1500	9.5
1.5SMC11A	1.5SMC11CA	SMC	9.4	15.6	97.4	1500	10.5
1.5SMC12A	1.5SMC12CA	SMC	10.2	16.7	91	1500	11.4
1.5SMC13A	1.5SMC13CA	SMC	11.1	18.2	83.5	1500	12.4
1.5SMC15A	1.5SMC15CA	SMC	12.8	21.2	71.7	1500	14.3
1.5SMC16A	1.5SMC16CA	SMC	13.6	22.5	67.6	1500	15.2
1.5SMC18A	1.5SMC18CA	SMC	15.3	25.2	60.3	1500	17.1
1.5SMC20A	1.5SMC20CA	SMC	17.1	27.7	54.9	1500	19
1.5SMC22A	1.5SMC22CA	SMC	18.8	30.6	49.7	1500	20.9
1.5SMC24A	1.5SMC24CA	SMC	20.5	33.2	45.8	1500	22.8
1.5SMC27A	1.5SMC27CA	SMC	23.1	37.5	40.5	1500	25.7
1.5SMC30A	1.5SMC30CA	SMC	25.6	41.4	36.7	1500	28.5
1.5SMC33A	1.5SMC33CA	SMC	28.2	45.7	33.3	1500	31.4
1.5SMC36A	1.5SMC36CA	SMC	30.8	49.9	30.5	1500	34.2
1.5SMC39A	1.5SMC39CA	SMC	33.3	53.9	28.2	1500	37.1
1.5SMC43A	1.5SMC43CA	SMC	36.8	59.3	25.6	1500	40.9
1.5SMC47A	1.5SMC47CA	SMC	40.2	64.8	23.5	1500	44.7
1.5SMC51A	1.5SMC51CA	SMC	43.6	70.1	21.7	1500	48.5
1.5SMC56A	1.5SMC56CA	SMC	47.8	77	19.7	1500	53.2
1.5SMC62A	1.5SMC62CA	SMC	53	85	17.9	1500	58.9
1.5SMC68A	1.5SMC68CA	SMC	58.1	92	16.5	1500	64.6
1.5SMC75A	1.5SMC75CA	SMC	64.1	103	14.8	1500	71.3
1.5SMC82A	1.5SMC82CA	SMC	70.1	113	13.5	1500	77.9
1.5SMC91A	1.5SMC91CA	SMC	77.8	125	12.2	1500	86.5
1.5SMC100A	1.5SMC100CA	SMC	85.5	137	11.1	1500	95
1.5SMC110A	1.5SMC110CA	SMC	94	152	10	1500	105
1.5SMC120A	1.5SMC120CA	SMC	102	165	9.2	1500	114
1.5SMC130A	1.5SMC130CA	SMC	111	179	8.5	1500	124
1.5SMC150A	1.5SMC150CA	SMC	128	207	7.3	1500	143
1.5SMC160A	1.5SMC160CA	SMC	136	219	6.9	1500	152
1.5SMC170A	1.5SMC170CA	SMC	145	234	6.5	1500	162
1.5SMC180A	1.5SMC180CA	SMC	154	246	6.2	1500	171
1.5SMC200A	1.5SMC200CA	SMC	171	274	5.5	1500	190
1.5SMC220A	1.5SMC220CA	SMC	185	328	4.6	1500	209
1.5SMC250A	1.5SMC250CA	SMC	214	344	4.4	1500	237
1.5SMC300A	1.5SMC300CA	SMC	256	414	3.7	1500	285
1.5SMC350A	1.5SMC350CA	SMC	300	482	3.2	1500	332
1.5SMC400A	1.5SMC400CA	SMC	342	548	2.8	1500	380
1.5SMC440A	1.5SMC440CA	SMC	376	602	2.5	1500	418
1.5SMC480A	1.5SMC480CA	SMC	408	658	2.3	1500	456
1.5SMC510A	1.5SMC510CA	SMC	434	698	2.1	1500	485
1.5SMC530A	1.5SMC530CA	SMC	477	725	2.1	1500	503.5
1.5SMC540A	1.5SMC540CA	SMC	486	740	2	1500	513
1.5SMC550A	1.5SMC550CA	SMC	495	760	2	1500	522.5

Discrete 3000 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)				
			V _{rw} (V)	V _{rsm} (V)	I _{rsm} (A)	P _{pk} (W)	V _{br} min. (V)
SMLJ5.0A	SMLJ5.0CA	SMC	5	9.2	326	3000	6.4
SMLJ6.0A	SMLJ6.0CA	SMC	6	10.3	291.3	3000	6.67
SMLJ6.5A	SMLJ6.5CA	SMC	6.5	11.2	267.9	3000	7.22
SMLJ7.0A	SMLJ7.0CA	SMC	7	12	250	3000	7.78
SMLJ7.5A	SMLJ7.5CA	SMC	7.5	12.9	232.6	3000	8.33
SMLJ8.0A	SMLJ8.0CA	SMC	8	13.6	220.6	3000	8.89
SMLJ8.5A	SMLJ8.5CA	SMC	8.5	14.4	208.4	3000	9.44
SMLJ9.0A	SMLJ9.0CA	SMC	9	15.4	194.8	3000	10
SMLJ10A	SMLJ10CA	SMC	10	17	176.4	3000	11.10
SMLJ11A	SMLJ11CA	SMC	11	18.2	164.8	3000	12.2
SMLJ12A*	SMLJ12CA*	SMC	12	19.9	150.6	3000	13.3
SMLJ13A*	SMLJ13CA*	SMC	13	21.5	139.4	3000	14.4
SMLJ14A*	SMLJ14CA*	SMC	14	23.2	129.4	3000	15.6
SMLJ15A*	SMLJ15CA*	SMC	15	24.4	123	3000	16.7
SMLJ16A*	SMLJ16CA*	SMC	16	26	115.4	3000	17.8
SMLJ17A*	SMLJ17CA*	SMC	17	27.6	106.6	3000	18.9
SMLJ18A*	SMLJ18CA*	SMC	18	29.2	102.8	3000	20
SMLJ20A*	SMLJ20CA*	SMC	20	32.4	92.6	3000	22.2
SMLJ22A*	SMLJ22CA*	SMC	22	35.5	84.4	3000	24.4
SMLJ24A*	SMLJ24CA*	SMC	24	38.9	77.2	3000	26.7
SMLJ26A*	SMLJ26CA*	SMC	26	42.1	71.2	3000	28.9
SMLJ28A*	SMLJ28CA*	SMC	28	45.4	66	3000	31.1
SMLJ30A*	SMLJ30CA*	SMC	30	48.4	62	3000	33.3
SMLJ33A*	SMLJ33CA*	SMC	33	53.3	56.2	3000	36.7
SMLJ36A*	SMLJ36CA*	SMC	36	58.1	51.6	3000	40
SMLJ40A*	SMLJ40CA*	SMC	40	64.5	46.4	3000	44.4
SMLJ43A*	SMLJ43CA*	SMC	43	69.4	43.2	3000	47.8
SMLJ45A*	SMLJ45CA*	SMC	45	72.7	41.2	3000	50
SMLJ48A*	SMLJ48CA*	SMC	48	77.4	38.8	3000	53.3
SMLJ51A*	SMLJ51CA*	SMC	51	82.4	36.4	3000	56.7
SMLJ54A*	SMLJ54CA*	SMC	54	87.1	34.4	3000	60
SMLJ58A*	SMLJ58CA*	SMC	58	93.6	32	3000	64.4
SMLJ60A	SMLJ60CA	SMC	60	96.8	31	3000	66.7
SMLJ64A	SMLJ64CA	SMC	64	103	29.2	3000	71.1
SMLJ70A	SMLJ70CA	SMC	70	113	26.6	3000	77.8
SMLJ75A	SMLJ75CA	SMC	75	121	24.8	3000	83.3
SMLJ78A	SMLJ78CA	SMC	78	126	22.8	3000	86.7
SMLJ85A	SMLJ85CA	SMC	85	137	20.8	3000	94.4
SMLJ90A	SMLJ90CA	SMC	90	146	20.6	3000	100
SMLJ100A	SMLJ100CA	SMC	100	162	18.6	3000	111
SMLJ110A	SMLJ110CA	SMC	110	177	16.8	3000	122
SMLJ120A	SMLJ120CA	SMC	120	193	15.60	3000	133
SMLJ130A	SMLJ130CA	SMC	130	209	14.4	3000	144
SMLJ150A	SMLJ150CA	SMC	150	243	12.4	3000	167
SMLJ160A	SMLJ160CA	SMC	160	259	11.6	3000	178
SMLJ170A	SMLJ170CA	SMC	170	275	11.00	3000	189

*"Q" suffix for AEC-Q101 compliance.

Discrete 5000 W - 7000 W Transient Voltage Suppressor (TVS) Diodes



Unidirectional Part Number	Bidirectional Part Number	Pkg. Size	Electrical Characteristics (T _A = 25 °C)			
			V _{rw} (V)	I _{pp} (A)	P _{pk} (W)	V _{br} min. (V)
5.0SMDJ5.0A	5.0SMDJ5.0CA	SMC	5	543.6	5000	6.4
5.0SMDJ6.0A	5.0SMDJ6.0CA	SMC	6	485.5	5000	6.67
5.0SMDJ6.5A	5.0SMDJ6.5CA	SMC	6.5	446.5	5000	7.22
5.0SMDJ7.0A	5.0SMDJ7.0CA	SMC	7	416.8	5000	7.78
5.0SMDJ7.5A	5.0SMDJ7.5CA	SMC	7.5	387.7	5000	8.33
5.0SMDJ8.0A	5.0SMDJ8.0CA	SMC	8	367.7	5000	8.89
5.0SMDJ8.5A	5.0SMDJ8.5CA	SMC	8.5	347.3	5000	9.44
5.0SMDJ9.0A	5.0SMDJ9.0CA	SMC	9	324.8	5000	10
5.0SMDJ10A	5.0SMDJ10CA	SMC	10	294.2	5000	11.1
5.0SMDJ11A	5.0SMDJ11CA	SMC	11	274.8	5000	12.2
5.0SMDJ12A*	5.0SMDJ12CA*	SMC	12	252	5000	13.3
5.0SMDJ13A*	5.0SMDJ13CA*	SMC	13	233.0	5000	14.40
5.0SMDJ14A*	5.0SMDJ14CA*	SMC	14	216.0	5000	15.60
5.0SMDJ15A*	5.0SMDJ15CA*	SMC	15	205	5000	16.70
5.0SMDJ16A*	5.0SMDJ16CA*	SMC	16	193.0	5000	17.80
5.0SMDJ17A*	5.0SMDJ17CA*	SMC	17	181.0	5000	18.90
5.0SMDJ18A*	5.0SMDJ18CA*	SMC	18	172.0	5000	20.00
5.0SMDJ20A*	5.0SMDJ20CA*	SMC	20	155.0	5000	22
5.0SMDJ22A*	5.0SMDJ22CA*	SMC	22	141.0	5000	24.40
5.0SMDJ24A*	5.0SMDJ24CA*	SMC	24	129.0	5000	26.7
5.0SMDJ26A*	5.0SMDJ26CA*	SMC	26	119.0	5000	28.9
5.0SMDJ28A*	5.0SMDJ28CA*	SMC	28	110.0	5000	31.1
5.0SMDJ30A*	5.0SMDJ30CA*	SMC	30	103.0	5000	33.3
5.0SMDJ33A*	5.0SMDJ33CA*	SMC	33	94	5000	36.7
5.0SMDJ36A*	5.0SMDJ36CA*	SMC	36	86.1	5000	40.0
5.0SMDJ40A*	5.0SMDJ40CA*	SMC	40	77.6	5000	44.4
5.0SMDJ43A*	5.0SMDJ43CA*	SMC	43	72.1	5000	48
5.0SMDJ45A*	5.0SMDJ45CA*	SMC	45	68.8	5000	50.0
5.0SMDJ48A*	5.0SMDJ48CA*	SMC	48	64.7	5000	53.3
5.0SMDJ51A*	5.0SMDJ51CA*	SMC	51	60.7	5000	56.7
5.0SMDJ54A*	5.0SMDJ54CA*	SMC	54	57.5	5000	60.0
5.0SMDJ58A*	5.0SMDJ58CA*	SMC	58	54	5000	64.4
5.0SMDJ60A*	5.0SMDJ60CA*	SMC	60	52	5000	66.7
5.0SMDJ64A*	5.0SMDJ64CA*	SMC	64	48.6	5000	71.1
5.0SMDJ70A*	5.0SMDJ70CA*	SMC	70	44.3	5000	78
5.0SMDJ75A*	5.0SMDJ75CA*	SMC	75	41.4	5000	83.3
5.0SMDJ78A*	5.0SMDJ78CA*	SMC	78	39.7	5000	86.7
5.0SMDJ85A*	5.0SMDJ85CA*	SMC	85	36.5	5000	94
5.0SMDJ90A	-	SMC	90	34.3	5000	100.0
5.0SMDJ100A	-	SMC	100	30.9	5000	111.0
5.0SMDJ110A	-	SMC	110	28.3	5000	122
5.0SMDJ120A	-	SMC	120	26	5000	133.0
5.0SMDJ130A	-	SMC	130	24	5000	144.0
5.0SMDJ150A	-	SMC	150	20.6	5000	167.0
5.0SMDJ160A	-	SMC	160	19.3	5000	178.0
5.0SMDJ170A	-	SMC	170	18.2	5000	189.0
SM8S16A*	SM8S16CA*	15.5 mm x 10.0 mm	16	254	6600	17.8
SM8S17A*	SM8S17CA*	15.5 mm x 10.0 mm	17	239	6600	18.9
SM8S18A*	SM8S18CA*	15.5 mm x 10.0 mm	18	226	6600	20.0
SM8S20A*	SM8S20CA*	15.5 mm x 10.0 mm	20	204	6600	22.2
SM8S22A*	SM8S22CA*	15.5 mm x 10.0 mm	22	186	6600	24.4
SM8S24A*	SM8S24CA*	15.5 mm x 10.0 mm	24	170	6600	26.7
SM8S26A*	SM8S26CA*	15.5 mm x 10.0 mm	26	157	6600	28.9
SM8S28A*	SM8S28CA*	15.5 mm x 10.0 mm	28	145	6600	31.1
SM8S30A*	SM8S30CA*	15.5 mm x 10.0 mm	30	136	6600	33.3
SM8S33A*	SM8S33CA*	15.5 mm x 10.0 mm	33	124	6600	36.7
SM8S36A*	SM8S36CA*	15.5 mm x 10.0 mm	36	114	6600	40.0
SM8S40A*	SM8S40CA*	15.5 mm x 10.0 mm	40	102	6600	44.4
SM8S43A*	SM8S43CA*	15.5 mm x 10.0 mm	43	95	6600	47.8
SM8SF24A*	SM8SF24CA*	10.5 mm x 8.1 mm	24	180	7000	26.7
SM8SF28A*	SM8SF28CA*	10.5 mm x 8.1 mm	28	154	7000	31.1
SM8SF30A*	SM8SF30CA*	10.5 mm x 8.1 mm	30	145	7000	33.3
SM8SF33A*	SM8SF33CA*	10.5 mm x 8.1 mm	33	131	7000	36.7
SM8SF36A*	SM8SF36CA*	10.5 mm x 8.1 mm	36	120	7000	40.0

*"Q" suffix for AEC-Q101 compliance.

Transient Voltage Suppressor (TVS) Diode Arrays



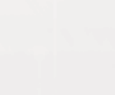
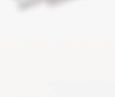
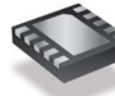
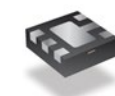
Part Number	Pkg. Size	Absolute Max. Ratings ($T_A = 25^\circ\text{C}$)			Electrical Characteristics ($T_A = 25^\circ\text{C}$)		Schematic
		V_{WM} (V)	V_C (V)	I_{PP} (A)	V_{BR} min. (V)	C_T typ (pF)	
CDSOT23-T03	SOT23	3.3	10.9	43	4.0	500	
CDSOT23-T03-Q	SOT23	3.3	10.9	43	4.0	500	
CDSOT23-T05	SOT23	5.0	13.5	42	6.0	350	
CDSOT23-T08	SOT23	8.0	16.9	34	8.5	250	
CDSOT23-T08-Q	SOT23	8.0	16.9	34	8.5	150	
CDSOT23-T12	SOT23	12.0	25.9	21	13.3	150	
CDSOT23-T15	SOT23	15.0	30.0	17	16.7	100	
CDSOT23-T24	SOT23	24.0	49.0	12	26.7	88	
CDSOT23-T36	SOT23	36.0	76.8	9	40.0	80	
CDSOT23-T03C	SOT23	3.3	10.9	43	4.0	300	
CDSOT23-T05C	SOT23	5.0	13.5	42	6.0	210	
CDSOT23-T08C	SOT23	8.0	16.9	34	8.5	150	
CDSOT23-T08C-Q	SOT23	8.0	16.9	34	8.5	150	
CDSOT23-T12C	SOT23	12.0	25.9	21	13.3	90	
CDSOT23-T15C	SOT23	15.0	30.0	17	16.7	60	
CDSOT23-T15C-Q	SOT23	15.0	25.0	15	16.7	60	
CDSOT23-T24C	SOT23	24.0	49.0	12	26.7	63	
CDSOT23-T24C-Q	SOT23	24.0	41.0	8	26.7	88	
CDSOT23-T36C	SOT23	36.0	76.8	9	40.0	60	
CDSOT23-T03LC	SOT23	3.3	10.9	43	4.0	5	
CDSOT23-T03LC-Q	SOT23	3.3	16.9	43	4.0	5	
CDSOT23-T05LC	SOT23	5.0	13.5	42	6.0	5	
CDSOT23-T05LC-Q	SOT23	5.0	17.0	42	6.0	5	
CDSOT23-T08LC	SOT23	8.0	16.9	34	8.5	5	
CDSOT23-T08LC-Q	SOT23	8.0	19.5	34	8.5	5	
CDSOT23-T12LC	SOT23	12	25.9	27	13.3	5	
CDSOT23-T15LC	SOT23	15	30.0	17	16.7	5	
CDSOT23-T24LC	SOT23	24.0	26.7	12	26.7	5	
CDSOT23-T36LC	SOT23	36.0	76.8	9	40.0	5	
CDSOT23-T24CAN	SOT23	24.0	40.0	8	26.2	22	
CDSOT23-T24CAN-Q	SOT23	24.0	40.0	8	26.2	22	
CDSOT23-SM712	SOT23	7.0/12.0	14.0/26.0	17	7.5/13.3	75	
CDSOT23-SLVU2.8	SOT23	2.8	21	30	3.0	2.5/20	
CDSOT236-T05	SOT23-6	5.0	21.0	17	6.0	150	
CDSOT236-T12	SOT23-6	12.0	29.2	12	13.3	80	
CDSOT236-T15	SOT23-6	15.0	34.6	10	16.7	50	
CDSOT236-T24	SOT23-6	24.0	58.3	6	26.7	40	
CDSOT236-T05C	SOT23-6	5.0	21.0	17	6.0	150	
CDSOT236-T12C	SOT23-6	12.0	29.2	12	13.3	80	
CDSOT236-T15C	SOT23-6	15.0	34.6	10	16.7	50	
CDSOT236-T24C	SOT23-6	24.0	58.3	6	26.7	40	
CDSOT23-SRV05-4	SOT23-6	5.0	15.0	30	6.0	3.5	

Transient Voltage Suppressor (TVS) Diode Arrays



Part Number	Pkg. Size	Absolute Max. Ratings ($T_A = 25^\circ\text{C}$)			Electrical Characteristics ($T_A = 25^\circ\text{C}$)		Schematic
		V_{WM} (V)	V_C (V)	I_{PP} (A)	$V_{BR\ min.}$ (V)	$C_T\ typ$ (pF)	
CDNBS08-T03	8L NSOIC	3.0	10.9	43	3.3	450	
CDNBS08-T05	8L NSOIC	5.0	13.5	42	6.0	308	
CDNBS08-T08	8L NSOIC	8.0	16.9	34	8.5	300	
CDNBS08-T12	8L NSOIC	12.0	25.9	27	13.3	105	
CDNBS08-T15	8L NSOIC	15.0	30.0	17	16.7	80	
CDNBS08-T24	8L NSOIC	24.0	49.0	12	26.7	50	
CDNBS08-T36	8L NSOIC	36.0	76.8	9	40.0	45	
CDNBS08-T03C	8L NSOIC	3.0	10.9	43	3.3	450	
CDNBS08-T05C	8L NSOIC	5.0	13.5	42	6.0	308	
CDNBS08-T08C	8L NSOIC	8.0	16.9	34	8.5	300	
CDNBS08-T12C	8L NSOIC	12.0	25.9	27	13.3	105	
CDNBS08-T15C	8L NSOIC	15.0	30.0	17	16.7	80	
CDNBS08-T24C	8L NSOIC	24.0	49.0	12	26.7	50	
CDNBS08-T36C	8L NSOIC	36.0	76.8	9	40.0	45	
CDSOT23-SLVU2.8-4	8L NSOIC	2.8	21.0	30	3.0	6	
CDSOT23-SLVU2.8-8	8L NSOIC	2.8	17.0	30	3.0	6	
CDNBS08-SRDA3.3-4	8L NSOIC	3.3	10.9	43	4.0	15	
CDNBS08-SRDA05-4	8L NSOIC	5.0	13.5	42	6.0	15	
CDNBS08-SRDA12-4	8L NSOIC	12.0	25.9	27	13.3	15	
CDNBS08-SRDA15-4	8L NSOIC	15.0	30.0	17	16.7	15	
CDNBS08-PLC03-6	8L NSOIC	6.0	20.0	100	6.8	6	
CDNB16-T03	16L NSOIC	3.0	23.0	43	4.5	15	
CDNB16-T05	16L NSOIC	5.0	24.0	42	6.0	15	
CDNB16-T08	16L NSOIC	8.0	26.0	30	8.5	15	
CDNB16-T12	16L NSOIC	12.0	33.0	21	13.3	15	
CDNB16-T15	16L NSOIC	15.0	39.0	15	16.7	15	
CDNB16-T24	16L NSOIC	24.0	57.0	10	26.7	15	
CDNB16-T36	16L NSOIC	36.0	72.0	7	40.0	15	
CDNB16-T03C	16L NSOIC	3.0	23.0	43	4.5	15	
CDNB16-T05C	16L NSOIC	5.0	24.0	42	6.0	15	
CDNB16-T08C	16L NSOIC	8.0	26.0	30	8.5	15	
CDNB16-T12C	16L NSOIC	12.0	33.0	21	13.3	15	
CDNB16-T15C	16L NSOIC	15.0	39.0	15	16.7	15	
CDNB16-T24C	16L NSOIC	24.0	57.0	10	26.7	15	
CDNB16-T36C	16L NSOIC	36.0	72.0	7	40.0	15	

Transient Voltage Suppressor (TVS) Diode Arrays



Part Number	Pkg. Size	Absolute Max. Ratings ($T_A = 25^\circ\text{C}$)			Electrical Characteristics ($T_A = 25^\circ\text{C}$)		Schematic
		V_{WM} (V)	V_C (V)	I_{PP} (A)	V_{BR} min. (V)	C_T typ (pF)	
CDDFN6-0504P	DFN6	5.0	8.1	6.5	6.0	1.2	
CDDFN10-2574N	DFN10	2.5	11.0	45	3.0	1.7	
CDDFN10-3324P	DFN10	3.3	7.5	4	4.5	0.45	
CDDFN10-3304NA	DFN10	3.3	18.0	25	3.9	4	
CDDFN10-0506N	DFN10	5.0	10.0	3.5	6.0	0.25	
CDDFN10-0524P	DFN10	5.0	12.0	3.8	6.0	0.5	
CDDFN10-0516P	DFN10	5.0	7.2	4	6.0	0.35	
CDMSP10-0504M	MSOP-10L	5.0			6.0	0.55	
CDNBS08-SMDA05-6	SO-8	5.0	9.8	1	6.0	120	
CDSC706-0504C	SC70-6L	5.0	9.0	5	6.0	1.6	
CDSOT23-0502B	SOT23-3L	5.0	8.0	5	6.0	15	
CDSOT23-0502U	SOT23-3L	5.0	8.0	5	6.0	65	
CDSOT236-0502	SOT23-6L	5.0	7.5	5	6.0	2.8	
CDSOT236-0504LC	SOT23-6L	5.0	8.1	4.7	6.0	0.65	
CDSOT236-0504C	SOT23-6L	5.0	10.0	5	6.0	1.2	
CDSOT23-SR208	SOT23-6L	20.0		0.7		5	
CDSOT563-0502	SOT563	5.0	9.0	5	6.0	2.8	


Steering Diode Arrays




Part Number	Pkg. Size	Electrical Characteristics ($T_A = 25^\circ\text{C}$)					Schematic
		V_{WM} (V)	V_C (V)	I_{PP} (A)	$V_{br\ min.}$ (V)	$C_t\ typ$ (pF)	
CD143A-SR2.8	SOT-143	2.8	5.0	12	4.5	4.5	
CD143A-SR3.3	SOT-143	3.3	7.0	12	4.5	4.5	
CD143A-SR05	SOT-143	5.0	20.0	30	6.0	10	
CD143A-SR05LC	SOT-143	5.0	12.5	13	6.1	3	
CD143A-SR12	SOT-143	12.0	30.0	16	13.3	10	
CD143A-SR70	SOT-143	70.0	7.0	24	85.0	10	

Power Transient Voltage Suppressor (PTVS) Diode Arrays




Part Number	Pkg. Type	Package Size (mm)			Electrical Characteristics (T _A = 25 °C)						
		Length	Width	Height	V _{wm} (V)	V _{br} min. (V)	V _c (V)	I _{pp} (kA)	I _D (μA)	C _t typ (nF)	
PTVS3-066C-M	Surface Mount	18.72	14.6	7.24	66.0	72.0	120.0	3	10	2	✓
PTVS3-076C-M	Surface Mount	18.72	14.6	7.24	76.0	85.0	135.0	3	10	1.7	✓
PTVS6-066C-M	Surface Mount	18.72	14.6	7.24	66.0	72.0	120.0	6	10	4.1	✓
PTVS6-076C-M	Surface Mount	18.72	14.6	7.24	76.0	85.0	135.0	6	10	3.3	✓
PTVS10-066C-M	Surface Mount	18.72	14.6	7.24	66.0	72.0	120.0	10	10	6.7	✓
PTVS10-076C-M	Surface Mount	18.72	14.6	7.24	76.0	85.0	135.0	10	10	5.5	✓
PTVS10-086C-M	Surface Mount	18.72	14.6	7.24	86.0	101.0	157.0	10	10	5	



Part Number	Pkg. Type	Package Size (mm)			Electrical Characteristics (T _A = 25 °C)						
		Length	Width	Height	V _{WM} (V)	V _{br} min. (V)	V _C (V)	I _{pp} (kA)	I _D (μA)	C _t typ (nF)	
PTVS3-058C-SH	Surface Mount	10.8	9	7	58.0	64.0	110.0	3	10	2.3	✓
PTVS3-076C-SH	Surface Mount	10.8	9	7.9	76.0	85.0	140.0	3	10	1.7	✓
PTVS6-058C-SH	Surface Mount	13	11.5	7	58.0	64.0	110.0	6	10	4.5	
PTVS6-076C-SH	Surface Mount	13	11.5	7.9	76.0	85.0	140.0	6	10	3.3	
PTVS10-058C-SH	Surface Mount	18.6	14.5	11	58.0	64.0	110.0	10	10	8	
PTVS10-076C-SH	Surface Mount	18.6	14.5	12	76.0	85.0	140.0	10	10	6	
PTVS15-058C-SH	Surface Mount	21	16	11	58.0	64.0	110.0	15	10	12	✓
PTVS15-076C-SH	Surface Mount	21	16	12	76.0	85.0	150.0	15	10	9	✓

Power Transient Voltage Suppressor (PTVS) Diode Arrays



Part Number	Pkg. Type	Package Size (mm)			Electrical Characteristics (T _A = 25 °C)						
		Length	Width	Height	V _{WM} (V)	V _{BR} min. (V)	V _C (V)	I _{PP} (kA)	I _D (μA)	C _T typ (pF)	
PTVS1-066C-TH	Through-Hole	24.15	7	14.5	66.0	71.0	86.0	1	10	0.744	
PTVS1-190C-TH	Through-Hole	24.15	7	14.5	190.0	200.0	227.0	1	10	0.274	
PTVS1-380C-TH	Through-Hole	24.15	8	14	380.0	422.0	520.0	1	10	0.12	✓
PTVS3-015C-TH	Through-Hole	24.15	9.3	16.8	15.0	16.0	28.0	3	10	7.5	
PTVS3-058C-TH	Through-Hole	24.15	9.3	16.8	58.0	64.0	110.0	3	10	2.3	✓
PTVS3-076C-TH	Through-Hole	24.15	9.3	16.8	76.0	85.0	140.0	3	10	1.7	✓
PTVS3-380C-TH	Through-Hole	24.15	9.3	16.8	380.0	401.0	520.0	3	10	0.35	
PTVS3-430C-TH	Through-Hole	24.15	9.3	16.8	430.0	440.0	580.0	3	10	0.4	
PTVS6-058C-TH	Through-Hole	24.15	11.5	18	58.0	64.0	110.0	6	10	4.5	
PTVS6-076C-TH	Through-Hole	24.15	11.5	18	76.0	85.0	140.0	6	10	3.3	
PTVS6-380C-TH	Through-Hole	24.15	11.5	18	380.0	401.0	520.0	6	10	0.65	
PTVS6-430C-TH	Through-Hole	24.15	11.5	18	430.0	440.0	580.0	6	10	0.7	
PTVS10-058C-TH	Through-Hole	24.15	14	21	58.0	64.0	110.0	10	10	7.50	
PTVS10-076C-TH	Through-Hole	24.15	14	21	76.0	85.0	140.0	10	10	5.6	
PTVS10-170C-TH	Through-Hole	24.15	14	21	170.0	190.0	260.0	10	10	2.5	
PTVS10-320C-TH	Through-Hole	24.15	14	21	320.0	336.0	440.0	10	10	1.4	
PTVS10-380C-TH	Through-Hole	24.15	14	21	380.0	401.0	520.0	10	10	1.2	
PTVS10-430C-TH	Through-Hole	24.15	14	21	430.0	440.0	580.0	10	10	1.1	
PTVS10-470C-TH	Through-Hole	24.15	14	21	470.0	470.0	630.0	10	10	1	
PTVS15-058C-TH	Through-Hole	24.15	16	23.5	58.0	64.0	110.0	15	10	12	✓
PTVS15-076C-TH	Through-Hole	24.15	16	23.5	76.0	85.0	150.0	15	10	9	✓

Bourns® TVS Diode Arrays Competitive Cross Reference

ProTek	Semtech	Littelfuse	MicroSemi	OnSemi	AOS	Semitel	STM	Bourns
PSR05-LF	SR05			ESD5B5.0ST1G				CD143A-SR05
					AOZ8001A-05			CD143A-SR05LC
PSR12-LF	SR12				AOZ8001A-12			CD143A-SR12
PSR2.8-LF	SR2.8							CD143A-SR2.8
PSR3.3-LF	SR3.3							CD143A-SR3.3
PSR70-LF	SR70							CD143A-SR70
	RClamp0524P			ESD7004				CDDFN10-0524P
PLR3304	RClamp3304N			NUP4105MU				CDDFN10-3304N
	RClamp0524P			ESD7004				CDDFN10-0524P
PLR3304	RClamp3304N			NUP4105MU				CDDFN10-3304N
	RClamp0524P			ESD7004	AOZ8808DI-05			CDDFN10-0524P
				ESD8104MUTAG				CDDFN10-0524P
	RClamp2574N	SP2574N						CDDFN10-2574N
PLR3304	RClamp3304N			NUP4105MU				CDDFN10-3304N
							HSP051-4N10	CDDFN10-3324P
	RClamp0521P.TCT							CDDFN2-T5.0LC
	RClamp0504P				AOZ8002DI			CDDFN6-0504P
	RClamp0504M/0514M/0524M				AOZ8005FI/8006FI/8007FI			CDMSP10-0504M
PLC03-6-LF-T13	LC03-6	SP03-6		LC03-6R2				CDNBS08-PLC03-6
SLUV2.8-4-LF	SLVU2.8-4	SPLV2.8-4				SES2V8P8U		CDNBS08-SLVU2.8-4
SLUV2.8-8-LF	SLVU2.8-8							CDNBS08-SLVU2.8-8
PSMDA05-6							ESDA6V1U1	CDNBS08-SMDA05-6
SRDA05-4-LF	SRDA05-4			NUP4201DR2/SRDA05-4				CDNBS08-SRDA05-4
	SRDA05-6			NUP4201D				CDNBS08-SRDA05-6
SRDA05-6-LF								CDNBS08-SRDA05-6
SRDA12-4-LF	SRDA12-4							CDNBS08-SRDA12-4
SRDA15-4-LF	SRDA15-4							CDNBS08-SRDA15-4
SRDA3.3-4-LF	SRDA3.3-4			NUP4106D				CDNBS08-SRDA3.3-4
SRDA3.3-6-LF	SRDA3.3-6							CDNBS08-SRDA3.3-6
SMDAxx-LF	SMDAxx		SMDBxxE3					CDNBS08-Txx
SMDAxxC-LF	SMDAxxC		SMDBxxCE3					CDNBS08-TxxC
SM16LCxx-LF	LCDAXX-8							CDNBS16-Txx
SM16LCxxC-LF	LCDAXX-8							CDNBS16-TxxC
PLR0504F-P-T7				NUP4202W1T2G		SESSVTSC70-6U		CDSOT236-0504C
GBLCxx-LF						SESLCxV3D323-2U		CDSOD323-Txx
GBLCxxC-LF						SESLCxV3D323-2B		CDSOD323-TxxC
GBLCxxLC-LF								CDSOD323-TxxL
GBLCxxCLC-LF								CDSOD323-TxxLC
PSDxx-LF	uClamp3301D			SDxx				CDSOD323-TxxS
PSDxxC-LF	SDxxC			SDxxC				CDSOD323-TxxSC
					AOZ8902CI			CDSOT235-0504C
	RCLAMP0504S				AOZ8000CI/8901CI/8904	SESSVT236-6U	USBLC6-25C6	CDSOT236-0502
					AOZ8005CI/8005CIL/8007CI		DVIULC6-45C6	CDSOT236-0504C
PSMSxx-LF	SMSxx	SPxx04BAHT					HDMIULC6-45C6	CDSOT236-0504LC
PSMSxxC-LF	SMSxxC	SPxx05BAHT					ESDA6V15C5	CDSOT236-Txx
ESOTxx-LCC-1							ESDA6V1-55C6/17-55C6/19-55C6	CDSOT236-TxxC
SLVU2.8-LF	SLVU2.8	SPLV2.8						CDSOT236-TxxLC
PSM712-LF-T7	SM712							CDSOT23-SLVU2.8
USB208-LF-T7								CDSOT23-SM712
SRV05-4-P-T7	SRV05-4	SP3050-04HTG		NUP4201MR6T1G			DALC208SC6	CDSOT23-SR208
PSOTxx-LF							USBLC6-45C6	CDSOT23-SRV05-4
PSOTxxC-LF	SMxx	SPxx02BAHT						CDSOT23-Txx
PSOTxxLC-LF	SLxx			SLxxT1G			ESDA6V1L/14V2L/25L	CDSOT23-TxxC
					AOZ8001KIL		ESDA6V1-4BC6	CDSOT23-TxxLC
							USBLC6-2P6	CDSOT563-0502
		SMAJxxxA	SMAJxxxA	1SMAxxxA			SMAJxxxA	SMAJxxxA
		SMAJ1xxxCA	SMAJxxxCA	1SMAxxxCA			SMAJxxxCA	SMAJxxxCA
		SMBJxxxA	SMBJxxxA	1SMBxxxA			SMBJxxxA	SMBJxxxA
		SMBJxxxCA	SMBJxxxCA	1SMBxxxCA			SMBJxxxCA	SMBJxxxCA
		SMCJxxxA	SMCJxxxA	1SMCxxxA			SMCJxxxA	SMCJxxxA
		SMCJxxxCA	SMCJxxxCA	1SMCxxxCA			SMCJxxxCA	SMCJxxxCA
			SMLJxxxA					SMLJxxxA
			SMLJxxxCA					SMLJxxxCA

Bourns® Power TVS Diode Arrays Competitive Cross Reference

Littelfuse	Bourns
LTKAK6-066C	PTVS6-066C-M
LTKAK6-076C	PTVS6-076C-M
LTKAK10-066C	PTVS10-066C-M
LTKAK10-076C	PTVS10-076C-M
AK3-015C	PTVS3-015C-TH
AK3-058C	PTVS3-058C-TH
AK3-076C	PTVS3-076C-TH
AK3-380C	PTVS3-380C-TH
AK3-430C	PTVS3-430C-TH
AK6-058C	PTVS6-058C-TH
AK6-076C	PTVS6-076C-TH
AK6-380C	PTVS6-380C-TH
AK6-430C	PTVS6-430C-TH
AK10-058C	PTVS10-058C-TH
AK10-076C	PTVS10-076C-TH
AK10-170C	PTVS10-170C-TH
AK10-380C	PTVS10-380C-TH
AK10-430C	PTVS10-430C-TH
AK15-058C	PTVS15-058C-TH
AK15-076C	PTVS15-076C-TH



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