

# Bourns® Diodes

## Short Form Catalog

### Bourns® Diode Product Offering

- Small Signal Switching Diodes
- Small Signal Schottky Barrier Diodes
- Small Signal Zener Diodes
- Schottky Rectifier Diodes
- MITE Rectifier Diodes
- Fast Response Rectifier Diodes
- Bridge Rectifier Diodes
- High Voltage Rectifier Diodes
- Transient Voltage Suppressor (TVS) Diodes
- Steering Diode Arrays
- TVS Diode Arrays



# Small Signal Switching Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Leadless
- High-speed Switching

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (mA)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (µA)		T <sub>rr</sub> Max (nS)		
							I <sub>F</sub> (mA)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	I <sub>F</sub> (mA)	V <sub>R</sub> (V)	I <sub>F</sub> (mA)	
High Speed	0603	CD0603-S0180	90	80	100	1 (8.3 mS)	1	100	0.1	80	4	6	10
	1005	CD1005-S0180	90	80	100	1 (8.3 mS)	1	100	0.1	80	4	6	10
	1206	CD1206-S0180	90	80	100	1 (8.3 mS)	1	100	0.1	80	4	6	10
	0603	CD0603-S01575	100	75	150	4 (1.0 µS)	1	50	2.5	75	4	6	10
	1005	CD1005-S01575	100	75	150	4 (1.0 µS)	1	50	2.5	75	4	6	10
	1206	CD1206-S01575	100	75	150	4 (1.0 µS)	1	50	2.5	75	4	6	10
Low Leakage	0603	CD0603-S0180R	90	80	100	1 (8.3 mS)	1	100	0.05	80	4	6	10
	1005	CD1005-S0180R	90	80	100	1 (8.3 mS)	1	100	0.05	80	4	6	10
	1206	CD1206-S0180R	90	80	100	1 (8.3 mS)	1	100	0.05	80	4	6	10

# Small Signal Schottky Barrier Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Low Storage
- Fits SOD323 & SOD523 Pads

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)							
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (mA)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (µA)		C <sub>T</sub> Max (pF)			
							I <sub>F</sub> (mA)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	I <sub>F</sub> (mA)	V <sub>R</sub> (V)	f(MHz)		
Small Signal	0603	CD0603-B00340	45	40	30	0.5 (8.3 mS)	0.37	1	1	40	1.5	1	1	
	1005	CD1005-B00340	45	40	30	0.5 (8.3 mS)	0.37	1	1	40	1.5	1	1	
	0603	CD0603-B00230	35	30	200	2 (8.3 mS)	0.50	200	30	30	12	10	1	
	1005	CD1005-B00230	35	30	200	3 (8.3 mS)	0.50	200	30	30	12	10	1	
	0603	CD0603-B00240	45	40	200	2 (8.3 mS)	0.55	200	10	30	12	10	1	
	1005	CD1005-B00240	45	40	200	3 (8.3 mS)	0.55	200	10	30	12	10	1	
	1005	CD1005-B00520	30	20	500	2 (8.3 mS)	0.47	500	100	20	12	10	1	
Low Voltage	0603	CD0603-B0130L	35	30	100	1 (8.3 mS)	0.44	100	30	30	9	10	1	
	1005	CD1005-B0130L	35	30	100	1 (8.3 mS)	0.44	100	30	30	9	10	1	
	0603	CD0603-B0140L	45	40	100	1 (8.3 mS)	0.55	100	30	10	9	10	1	
	1005	CD1005-B0140L	45	40	100	1 (8.3 mS)	0.55	100	30	10	9	10	1	
Low Leakage	0603	CD0603-B0140R	45	40	100	1 (8.3 mS)	0.45	10	1	10	9	10	1	
	1005	CD1005-B0140R	45	40	100	1 (8.3 mS)	0.45	10	1	10	9	10	1	

# Zener Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Zener Voltages 2.0 to 39V
- Fits SOD-523 & SOD-323 Pads

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Electrical Characterization (Ta = 25 °C)									
			Zener Voltage				Zener Impedance			Reverse Current		Power Dissipation
			V <sub>Z</sub> Min (V)	V <sub>Z</sub> Max(V)	I <sub>Z</sub> (mA)	R <sub>ZT</sub> (Ω)	I <sub>ZT</sub> (mA)	R <sub>ZK</sub> (Ω)	I <sub>ZK</sub> (mA)	I <sub>R</sub> (µA)	V <sub>R</sub> (V)	P <sub>PK</sub> (mW)
Voltage	0603	CD0603-Zxxx	1.9-37.05	2.1-40.95	5	100-20	5	600-300	1	100-0.1	1 - 39	200
Reference	1005	CD1005-Zxxx	1.9-37.05	2.1-40.95	5	100-20	5	600-300	1	100-0.1	1 - 39	200

# Schottky Rectifier Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Surface Mount
- Low Forward Voltage Drop

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A) 60 Hz, 1 Cycle	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	f (MHz)		
Rectification I <sub>0</sub> = 1 A	1607	CD1607-B120LF	20	20	1	30	0.50	1	500	20	110	4	1
		CD1607-B120LLF	20	20	1	30	0.38	1	500	20	110	4	1
		CD1607-B140LF	40	40	1	30	0.50	1	500	40	110	4	1
		CD1607-B140LLF	40	40	1	30	0.40	1	500	40	110	4	1
	2010	CD2010-B140	40	40	1	30	0.55	1	500	40	110	4	1
		CD2010-B160	60	60	1	30	0.58	1	500	40	110	4	1
	SMA	CD214A-B120LF	20	20	1	30	0.50	1	500	20	110	4	1
		CD214A-B130LF	30	30	1	30	0.50	1	500	30	110	4	1
		CD214A-B130LLF	30	30	1	30	0.41	1	1000	25	100	4	1
		CD214A-B140LF	40	40	1	30	0.50	1	500	40	110	4	1
		CD214A-B150LF	50	50	1	30	0.70	1	500	50	110	4	1
		CD214A-B160LF	60	60	1	30	0.70	1	500	60	110	4	1
		CD214A-B170LF	70	70	1	30	0.79	1	500	70	30	4	1
		CD214A-B180LF	80	80	1	30	0.79	1	500	80	30	4	1
		CD214A-B190LF	90	90	1	30	0.79	1	500	90	30	4	1
	CD214A-B1100LF	100	100	1	30	0.79	1	500	100	30	4	1	
	SMB	CD214B-B120LF	20	20	1	30	0.50	1	500	20	110	4	1
		CD214B-B130LF	30	30	1	30	0.50	1	500	30	110	4	1
		CD214B-B140LF	40	40	1	30	0.50	1	500	40	110	4	1
		CD214B-B150LF	50	50	1	30	0.70	1	500	50	110	4	1
CD214B-B160LF		60	60	1	30	0.70	1	500	60	110	4	1	
Rectification I <sub>0</sub> = 2 A	1206	CD1206-B220	20	20	2	40	0.50	2	500	20	150	4	1
		CD1206-B240	40	40	2	40	0.50	2	500	40	150	4	1
		CD1206-B260	60	60	2	40	0.70	2	500	60	150	4	1
		CD1206-B2100	100	100	2	40	0.85	2	500	100	150	4	1
	SMA	CD214A-B220LF	20	20	2	50	0.50	2	500	20	200	4	1
		CD214A-B230LF	30	30	2	50	0.50	2	500	30	200	4	1
		CD214A-B240LF	40	40	2	50	0.50	2	500	40	200	4	1
		CD214A-B240LLF	40	40	2	25	0.43	2	2000	40	200	4	1
		CD214A-B250LF	50	50	2	50	0.70	2	500	50	200	4	1
		CD214A-B260LF	60	60	2	50	0.70	2	500	60	200	4	1
	SMB	CD214B-B220LF	20	20	2	50	0.50	2	500	20	200	4	1
		CD214B-B230LF	30	30	2	50	0.50	2	500	30	200	4	1
		CD214B-B240LF	40	40	2	50	0.50	2	500	40	200	4	1
		CD214B-B250LF	50	50	2	50	0.70	2	500	50	200	4	1
		CD214B-B260LF	60	60	2	50	0.70	2	500	60	200	4	1

# Schottky Rectifier Diodes Selection Guide, continued



## Features

- Pb Free
- RoHS Compliant
- Surface Mount
- Low Forward Voltage Drop

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	f (MHz)		
Rectification I <sub>0</sub> = 3 A	SMA	CD214A-B320LF	20	20	3	100	0.50	3	500	20	250	4	1
		CD214A-B330LF	30	30	3	100	0.50	3	500	30	250	4	1
		CD214A-B340LF	40	40	3	100	0.50	3	500	40	250	4	1
		CD214A-B340LLF	40	40	3	70	0.45	3	1000	40	300	4	1
		CD214A-B350LF	50	50	3	100	0.70	3	500	50	250	4	1
		CD214A-B360LF	60	60	3	100	0.70	3	500	60	250	4	1
	SMB	CD214B-B320LF	20	20	3	100	0.50	3	500	20	250	4	1
		CD214B-B330LF	30	30	3	100	0.50	3	500	30	250	4	1
		CD214B-B340LF	40	40	3	100	0.50	3	500	40	250	4	1
		CD214B-B350LF	50	50	3	100	0.70	3	500	50	250	4	1
		CD214B-B360LF	60	60	3	100	0.70	3	500	60	250	4	1
	SMC	CD214C-B320LF	20	20	3	100	0.50	3	500	20	250	4	1
		CD214C-B330LF	30	30	3	100	0.50	3	500	30	250	4	1
		CD214C-B340LF	40	40	3	100	0.50	3	500	40	250	4	1
		CD214C-B350LF	50	50	3	100	0.70	3	500	50	250	4	1
CD214C-B360LF		60	60	3	100	0.70	3	500	60	250	4	1	

# MITE Rectifier Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Low Forward Voltage
- Low Reverse Current

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	I <sub>R</sub> (μA)	V <sub>R</sub> (V)	f (MHz)		
Rectification I <sub>0</sub> = 1 A	DO-216AA	CD216A-B120RLF	20	20	1	50	0.53	1	10	20	75	4	1
		CD216A-B120LLF	20	20	1	50	0.45	1	400	20	90	4	1
		CD216A-B130LLF	30	30	1	50	0.38	1	410	30	70	4	1
		CD216A-B140LF	40	40	1	40	0.55	1	500	40	60	4	1

# Fast Response Rectifier Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- High Current Capability
- 35 nS Reverse Recovery Time

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	f (MHz)			
Fast Rectification I <sub>o</sub> = 1 A	SMA	CD214A-F150	50	50	1	30	0.95	1	5	50	10	4	1
		CD214A-F1100	100	100	1	30	0.95	1	5	100	10	4	1
		CD214A-F1150	150	150	1	30	0.95	1	5	150	10	4	1
		CD214A-F1200	200	200	1	30	1.25	1	5	200	10	4	1
		CD214A-F1400	400	400	1	30	1.25	1	5	400	10	4	1
		CD214A-F1600	600	600	1	25	1.70	1	5	600	10	4	1
Fast Rectification I <sub>o</sub> = 2 A	SMB	CD214B-F250	50	50	2	30	0.92	2	5	50	25	4	1
		CD214B-F2100	100	100	2	30	0.92	2	5	100	25	4	1
		CD214B-F2150	150	150	2	30	0.92	2	5	150	25	4	1
		CD214B-F2200	200	200	2	30	1.25	2	5	200	25	4	1
		CD214B-F2400	400	400	2	30	1.25	2	5	400	25	4	1
		CD214B-F2600	600	600	2	25	1.30	2	5	600	25	4	1
Fast Rectification I <sub>o</sub> = 3 A	SMB	CD214B-F350	50	50	3	30	0.92	3	5	50	25	4	1
		CD214B-F3100	100	100	3	30	0.92	3	5	100	25	4	1
		CD214B-F3150	150	150	3	30	0.92	3	5	150	25	4	1
		CD214B-F3200	200	200	3	30	1.25	3	5	200	25	4	1
		CD214B-F3400	400	400	3	30	1.25	3	5	400	25	4	1
		CD214B-F3600	600	600	3	25	1.30	3	5	600	25	4	1
	SMC	CD214C-F350	50	50	3	30	0.92	3	5	50	25	4	1
		CD214C-F3100	100	100	3	30	0.92	3	5	100	25	4	1
		CD214C-F3200	200	200	3	30	1.25	3	5	200	25	4	1
		CD214C-F3400	400	400	3	30	1.25	3	5	400	25	4	1
		CD214C-F3600	600	600	3	25	1.30	3	5	600	25	4	1

# Bridge Rectifiers Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Low Power Loss
- High Efficiency

## Applications

- AC Products
- Computer Monitors
- Set Top Boxes
- Cable Modems

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	f (MHz)			
High Voltage Rectification I <sub>o</sub> = 0.8 A	2419	CD2419-B08200	200	200	0.8	35	1.00	1	5	200	25	4	1
		CD2419-B08400	400	400	0.8	35	1.00	1	5	200	25	4	1
		CD2419-B08600	600	600	0.8	35	1.00	1	5	200	25	4	1
		CD2419-B08800	800	800	0.8	35	1.00	1	5	200	25	4	1
	4L NSOIC	CDNBS04-B08200	200	200	0.8	30	1.15	1	5	200	26	4	1
		CDNBS04-B08400	400	400	0.8	30	1.15	1	5	200	26	4	1
		CDNBS04-B08600	600	600	0.8	30	1.15	1	5	200	26	4	1
		CDNBS04-B08800	800	800	0.8	30	1.15	1	5	200	26	4	1

# High Voltage Rectifier Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- High Current Capability
- Low Forward Voltage

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)						
			V <sub>RRM</sub> (V)	V <sub>R</sub> (V)	I <sub>O</sub> (A)	I <sub>SURGE</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (μA)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (A)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	f (MHz)			
High Voltage Rectification I <sub>o</sub> = 1 A	1408	CD1408-R1200	200	200	1	30	1.00	1	1	200	12	4	1
		CD1408-R1400	400	400	1	30	1.00	1	1	400	12	4	1
		CD1408-R1600	600	600	1	30	1.00	1	1	600	12	4	1
		CD1408-R1800	800	800	1	30	1.00	1	1	800	12	4	1
		CD1408-R11000	1000	1000	1	30	1.00	1	1	1000	12	4	1
	SMA	CD214A-R150	50	50	1	30	1.00	1	5	50	12	4	1
		CD214A-R1100	100	100	1	30	1.00	1	5	100	12	4	1
		CD214A-R1200	200	200	1	30	1.00	1	5	200	12	4	1
		CD214A-R1400	400	400	1	30	1.00	1	5	400	12	4	1
		CD214A-R1600	600	600	1	30	1.00	1	5	600	12	4	1
		CD214A-R1800	800	800	1	30	1.00	1	5	800	12	4	1
		CD214A-R11000	1000	1000	1	30	1.00	1	5	1000	12	4	1
		CD214A-R11100	1100	1100	1	25	1.25	1	5	1100	12	4	1
		CD214A-R11200	1200	1200	1	25	1.25	1	5	1200	12	4	1
CD214A-R11600	1600	1600	1	25	1.25	1	5	1600	12	4	1		
High Voltage Rectification I <sub>o</sub> = 2 A	SMB	CD214B-R250	50	50	2	65	1.00	2	5	50	25	4	1
		CD214B-R2100	100	100	2	65	1.00	2	5	100	25	4	1
		CD214B-R2200	200	200	2	65	1.00	2	5	200	25	4	1
		CD214B-R2400	400	400	2	65	1.00	2	5	400	25	4	1
		CD214B-R2600	600	600	2	65	1.00	2	5	600	25	4	1
		CD214B-R2800	800	800	2	65	1.00	2	5	800	25	4	1
		CD214B-R21000	1000	1000	2	65	1.00	2	5	1000	25	4	1
High Voltage Rectification I <sub>o</sub> = 3 A	SMB	CD214B-R350	50	50	3	115	1.00	3	5	50	40	4	1
		CD214B-R3100	100	100	3	115	1.00	3	5	100	40	4	1
		CD214B-R3200	200	200	3	115	1.00	3	5	200	40	4	1
		CD214B-R3400	400	400	3	115	1.00	3	5	400	40	4	1
		CD214B-R3600	600	600	3	115	1.00	3	5	600	40	4	1
		CD214B-R3800	800	800	3	115	1.00	3	5	800	40	4	1
		CD214B-R31000	1000	1000	3	115	1.00	3	5	1000	40	4	1
	SMC	CD214C-R350	50	50	3	100	1.00	3	10	50	40	4	1
		CD214C-R3100	100	100	3	100	1.00	3	10	100	40	4	1
		CD214C-R3200	200	200	3	100	1.00	3	10	200	40	4	1
		CD214C-R3400	400	400	3	100	1.00	3	10	400	40	4	1
		CD214C-R3600	600	600	3	100	1.00	3	10	600	40	4	1
		CD214C-R3800	800	800	3	100	1.00	3	10	800	40	4	1
		CD214C-R31000	1000	1000	3	100	1.00	3	10	1000	40	4	1

# Transient Voltage Suppressor (TVS) Diodes Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Stand Off Voltage 5 - 170 V
- ESD, EFT & Surge Protection

## Applications

- Desktop PCs & Notebooks
- PDAs & MP3 Players
- Cellular Phones
- Digital Cameras

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)				Electrical Characterization (Ta = 25 °C)				
			V <sub>RWM</sub> (V)	V <sub>RSM</sub> (V)	I <sub>RSM</sub> (A)	P <sub>PK</sub> (W)	V <sub>BR</sub> Min (V)		C <sub>T</sub> Typ (pF)		
							I <sub>F</sub> (mA)	V <sub>R</sub> (V)	f (MHz)		
Secondary Surge Protection	0402	CD0402-TxxC	3.3 - 36	12.5 - 84	20 - 3	250	4.0 - 40	1	150-24	0	1
		CD0402-TxxLC	3.3 - 36	12.5 - 84	20 - 3	250	4.0 - 40	1	70-18	0	1
	SOD323	CDSOD323-Txx	3.3 - 12	19 - 28	20 - 7	350	4.0 - 13.3	1	3	0	1
		CDSOD323-TxxC	3.3 - 12	19 - 28	20 - 7	350	4.0 - 13.3	1	3	0	1
	SMA	CD214A-TxxxALF	5 - 170	9.6 - 275	41.6 - 1.4	400	6.4 - 189	10 - 1	1000	10	1
		CD214A-TxxxCALF	5 - 170	9.6 - 275	41.6 - 1.4	400	6.4 - 189	10 - 1	600	10	1
	SMB	CD214B-TxxxALF	5 - 170	9.6 - 275	62.5 - 2.2	600	6.4 - 189	10 - 1	2000	10	1
		CD214B-TxxxCALF	5 - 170	9.6 - 275	62.5 - 2.2	600	6.4 - 189	10 - 1	1100	10	1
	SMC	CD214C-TxxxALF	5 - 170	9.6 - 275	156 - 5.5	1500	6.4 - 189	10 - 1	4000	10	1
		CD214C-TxxxCALF	5 - 170	9.6 - 275	156 - 5.5	1500	6.4 - 189	10 - 1	2500	10	1

# Steering Diode Arrays Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Low Power Loss
- ESD & EFT Protection

## Applications

- Portable Electronics
- Video/Graphics Card
- Desktop PCs & Notebooks
- USB 2.0 Interface

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)			Electrical Characterization (Ta = 25 °C)						
			V <sub>WM</sub> (V)	V <sub>BR</sub> (V)	I <sub>O</sub> (A)	V <sub>F</sub> Max (V)		I <sub>R</sub> Max (µA)		C <sub>T</sub> Typ (pF)		
						I <sub>F</sub> (mA)	V <sub>R</sub> (V)	V <sub>R</sub> (V)	f (MHz)			
ESD Protection	SOT23-6	CDSOT23-SR208	20		0.7	1.2	5	1	5	3	0	1
		CDSOT23-SR724	20		0.7	1.2	5	1	5	3	0	1
	SOT-143	CD143A-SR2.8	2.8	3.0	30	1.0	10	1	2.8	4.5	0	1
		CD143A-SR3.3	3.3	3.5	30	1.0	10	1	3.3	4.5	0	1
		CD143A-SR05	5.0	6.0	30	1.5	10	5	5	10	0	1
		CD143A-SR12	12.0	13.3	30	1.5	10	1	12	10	0	1
		CD143A-SR70	70	70	24	1.5	1000	1	70	8	0	0

# TVS Diode Arrays Selection Guide



## Features

- Pb Free
- RoHS Compliant
- Low Capacitance
- Multiple Package Options

## Applications

- Desktop PCs & Notebooks
- Instrumentation
- Set-Top Boxes
- Network Equipment

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)			Electrical Characterization (Ta = 25 °C)					Schematic
			V <sub>RWM</sub> (V)	V <sub>RSM</sub> (V)	I <sub>RSM</sub> (A)	V <sub>BR</sub> Min (V)	C <sub>T</sub> Typ (pF)				
							I <sub>F</sub> (mA)	V <sub>R</sub> (V)	f (MHz)		
Secondary Surge Protection	SOT23	CDSOT23-T03	3.3	10.9	43	4.0	1	500	0	1	
		CDSOT23-T05	5.0	13.5	42	6.0	1	350	0	1	
		CDSOT23-T08	8.0	16.9	34	8.5	1	250	0	1	
		CDSOT23-T12	12	25.9	27	13.3	1	150	0	1	
		CDSOT23-T15	15	30.0	17	16.7	1	100	0	1	
		CDSOT23-T24	24	49.0	12	26.7	1	88	0	1	
		CDSOT23-T36	36	76.8	9	40.0	1	80	0	1	
	CDSOT23-T03C	3.3	10.9	43	4.0	1	300	0	1		
	CDSOT23-T05C	5.0	13.5	42	6.0	1	210	0	1		
	CDSOT23-T08C	8.0	16.9	34	8.5	1	150	0	1		
	CDSOT23-T12C	12	25.9	27	13.3	1	90	0	1		
	CDSOT23-T15C	15	30.0	17	16.7	1	60	0	1		
	CDSOT23-T24C	24	49.0	12	26.7	1	63	0	1		
	CDSOT23-T36C	36	76.8	9	40.0	1	60	0	1		
	CDSOT23-T03LC	3.3	10.9	43	4.0	1	5	0	1		
	CDSOT23-T05LC	5.0	13.5	42	6.0	1	5	0	1		
	CDSOT23-T08LC	8.0	16.9	34	8.5	1	5	0	1		
	CDSOT23-T12LC	12	25.9	27	13.3	1	5	0	1		
	CDSOT23-T15LC	15	30.0	17	16.7	1	5	0	1		
	CDSOT23-T24LC	24	49.0	12	26.7	1	5	0	1		
	CDSOT23-T36LC	36	76.8	9	40.0	1	5	0	1		
	SOT23-6	CDSOT236-T05	5.0	13.5	42	6.0	1	70	0	1	
		CDSOT236-T12	12	25.9	27	13.3	1	50	0	1	
		CDSOT236-T15	15	30.0	17	16.7	1	30	0	1	
CDSOT236-T24		24	49.0	12	26.7	1	25	0	1		
CDSOT236-T05C		5.0	13.5	42	6.0	1	70	0	1		
CDSOT236-T12C		12	25.9	27	13.3	1	50	0	1		
CDSOT236-T15C		15	30.0	17	16.7	1	30	0	1		
CDSOT236-T24C		24	49.0	12	26.7	1	25	0	1		
CDSOT23-SRV05-4		5.0	15	30	6	1	3.5	0	1		



# TVS Diode Arrays Selection Guide, continued



## Features

- Pb Free
- RoHS Compliant
- Low Capacitance
- Multiple Package Options

## Applications

- Desktop PCs & Notebooks
- Instrumentation
- Set-Top Boxes
- Network Equipment

Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)			Electrical Characterization (Ta = 25 °C)					Schematic
			V <sub>RWM</sub> (V)	V <sub>RSM</sub> (V)	I <sub>RSM</sub> (A)	V <sub>BR</sub> Min (V)		C <sub>T</sub> Typ (pF)			
						I <sub>F</sub> (mA)	V <sub>R</sub> (V)	f (MHz)			
Secondary Surge Protection	8L NSOIC	CDNBS08-T03	3.0	10.9	43	3.3	1	800	0	1	
		CDNBS08-T05	5.0	13.5	42	6.0	1	550	0	1	
		CDNBS08-T08	8.0	16.9	34	8.5	1	500	0	1	
		CDNBS08-T12	12	25.9	27	13.3	1	185	0	1	
		CDNBS08-T15	15	30.0	17	16.7	1	140	0	1	
		CDNBS08-T24	24	49.0	12	26.7	1	88	0	1	
		CDNBS08-T36	36	76.8	9	40.0	1	80	0	1	
		CDNBS08-T03C	3.0	10.9	43	3.3	1	450	0	1	
		CDNBS08-T05C	5.0	13.5	42	6.0	1	308	0	1	
		CDNBS08-T08C	8.0	16.9	34	8.5	1	300	0	1	
		CDNBS08-T12C	12	25.9	27	13.3	1	105	0	1	
		CDNBS08-T15C	15	30.0	17	16.7	1	80	0	1	
		CDNBS08-T24C	24	49.0	12	26.7	1	50	0	1	
		CDNBS08-T36C	36	76.8	9	40.0	1	45	0	1	
		CDNBS08-PLC03-3.3	3.0	11	50	3.3	1	8	0	1	
		CDNBS08-PLC03-6	6.0	20	100	6.8	1	8	0	1	
CDNBS08-SLVU2.8-4	2.8	21	30	3.0	1	6	0	1			
CDNBS08-SLVU2.8-8	2.8	17	30	3.0	1	6	0	1			

# TVS Diode Arrays Selection Guide, continued



## Features

- Pb Free
- RoHS Compliant
- Low Capacitance
- Multiple Package Options

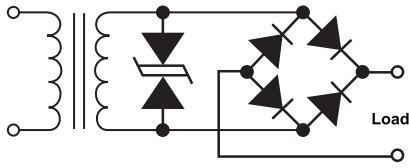
## Applications

- Desktop PCs & Notebooks
- Instrumentation
- Set-Top Boxes
- Network Equipment

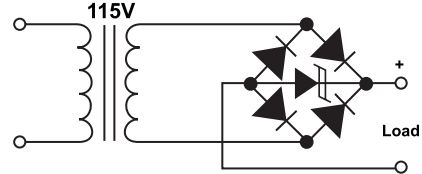
Application	Size	Part No	Absolute Maximum Rating (Ta = 25 °C)			Electrical Characterization (Ta = 25 °C)					Schematic		
			V <sub>RWM</sub> (V)	V <sub>RSM</sub> (V)	I <sub>RSM</sub> (A)	V <sub>BR</sub> Min (V)	C <sub>T</sub> Typ (pF)						
							I <sub>F</sub> (mA)	V <sub>R</sub> (V)	f (MHz)				
Secondary Surge Protection	8L NSOIC	CDNBS08-SRDA3.3-4	3.0	10.9	43	4.0	1	15	0	1			
		CDNBS08-SRDA05-4	5.0	13.5	42	6.0	1	15	0	1			
		CDNBS08-SRDA12-4	12	25.9	27	13.3	1	15	0	1			
		CDNBS08-SRDA15-4	15	30.0	17	16.7	1	15	0	1			
		CDNBS08-SRDA3.3-6	3.0	10.9	43	4.0	1	15	0	1			
		CDNBS08-SRDA05-6	5.0	13.5	42	6.0	1	15	0	1			
		CDNBS08-USB3B	3.3	12.9	37	4.0	1	15	0	1			
		CDNBS08-USB6B	5.25	13.2	35	6.0	1	15	0	1			
	16L NSOIC	16L NSOIC	CDNBS16-T03	3.0	23	43	4.5	1	15	0	1		
			CDNBS16-T05	5.0	24	42	6.0	1	15	0	1		
			CDNBS16-T08	8.0	26	30	8.5	1	15	0	1		
			CDNBS16-T12	12	33	21	13.3	1	15	0	1		
			CDNBS16-T15	15	39	15	16.7	1	15	0	1		
			CDNBS16-T24	24	57	10	26.7	1	15	0	1		
		16L WSOIC	16L WSOIC	CDNBS16-T36	36	72	7	40.0	1	15	0		1
				CDNBS16-T03C	3.0	23	43	4.5	1	15	0		1
				CDNBS16-T05C	5.0	24	42	6.0	1	15	0		1
				CDNBS16-T08C	8.0	26	30	8.5	1	15	0		1
				CDNBS16-T12C	12	33	21	13.3	1	15	0		1
				CDNBS16-T15C	15	39	15	16.7	1	15	0		1
16L WSOIC	16L WSOIC	CDNBS16-T24C	24	57	10	26.7	1	15	0	1			
		CDNBS16-T36C	36	72	7	40.0	1	15	0	1			
	16L WSOIC	CDWBS16-PLC01-6	6	16	200	8	1	50	0	1			

# Diode Product Applications

## Rectification & Protection

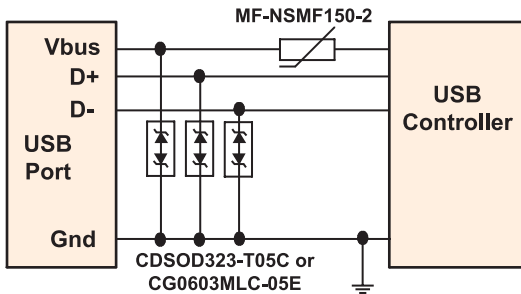


DC Power Supply Configuration 1

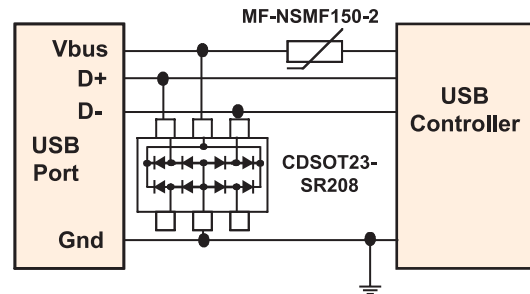


DC Power Supply Configuration 2

## USB 2.0 Single Port Protection

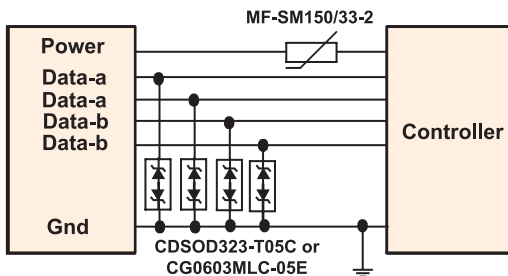


Discrete Solution

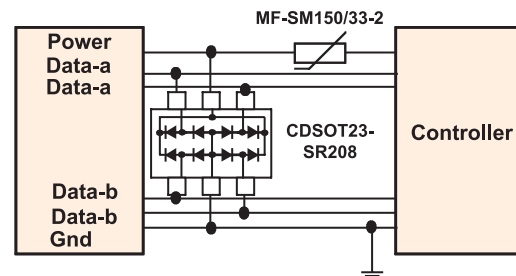


Array Solution

## IEEE1394 (Firewire, i.Link) Protection

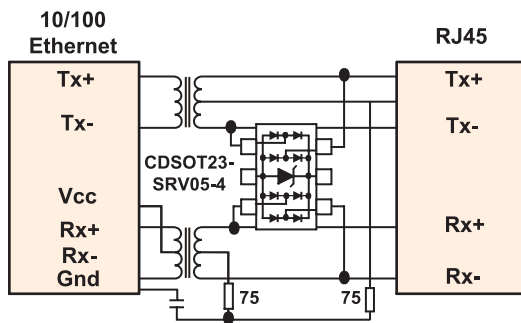


Discrete Solution

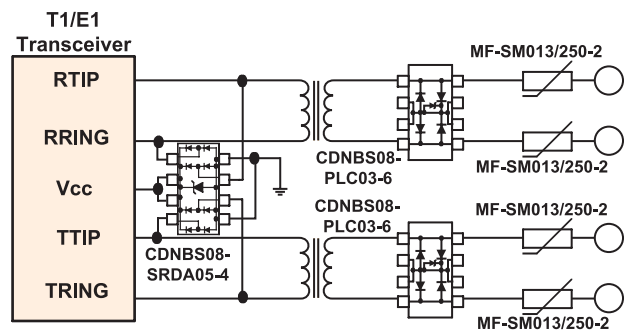


Array Solution

## Ethernet 10/100 Protection















## T1/E1 Intra Building Protection



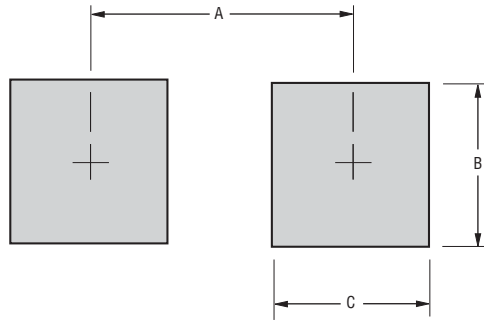
# Package Comparison

Bourns	Competition	Same Package	Same Footprint
CD0402	0402	No	Yes
CD0603	SOD-523	No	Yes
CD1005	SOD-323 MicroMELF	No	Yes
CD1206	SOD-80C MiniMELF	No	Yes
CD1408	SOD-87	No	Yes
CD1607	SOD-123 MiniSMA	No	Yes
CD2010	SOD-106 SMA DO-214AA	No	Yes
CD214A	SMA DO-214AA	Yes	Yes
CD214B	SMB DO-214AC	Yes	Yes
CD214C	SMC DO-214AB	Yes	Yes
CD216A	DO-216AA	No	Yes
CDSOT143	SOT-143A	Yes	Yes
CDSOT23	SOT23	Yes	Yes
CDSOT236	SOT23-6	Yes	Yes
CD2419	4L NSOIC	No	Yes
CDNBS04	4L NSOIC	Yes	Yes
CDNBS08	8L NSOIC	Yes	Yes
CDNBS16	16L NSOIC	Yes	Yes
CDWBS16	16L WSOIC	Yes	Yes

Bourns	Part	Equivalent	Competition
0402			SOD-523
1005			MicroMELF/ SOD-323
1206			SOD-80C MiniMELF

Bourns	Part	Equivalent	Competition
1408			SOD-87
1607			SOD-123
2010			SOD-106 SMA

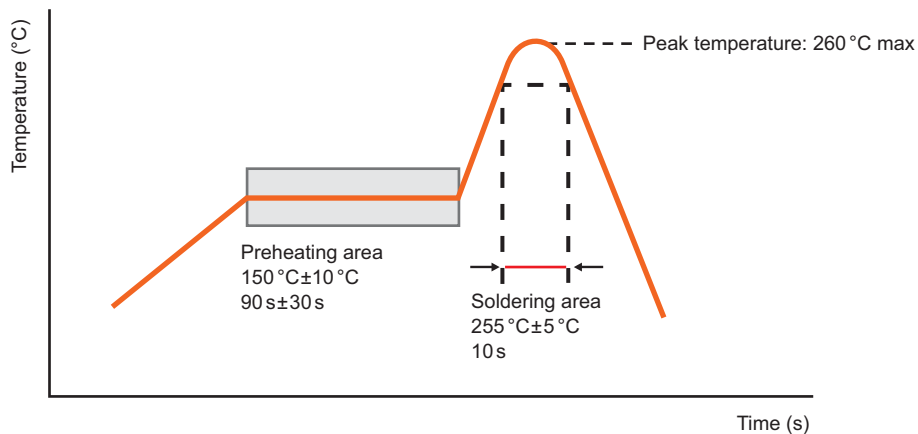
# Recommended Pad Layout



Package	CD0402	CD0603	CD1005	CDS0D323	CD1206	CD1408
Competition Package	0402 SOD-882	SOD-523	SOD-323 MicroMELF	SOD-323	SOD-80C Mini SMA	SOD-87
A (Max.)	0.69 (0.027)	1.70 (0.067)	2.10 (0.082)	2.10 (0.082)	3.00 (0.118)	3.30 (0.129)
B (Max.)	0.69 (0.027)	0.80 (0.031)	1.20 (0.047)	1.20 (0.047)	1.60 (0.063)	1.90 (0.075)
C (Max.)	0.46 (0.018)	0.60 (0.024)	1.20 (0.047)	1.20 (0.047)	1.40 (0.055)	2.00 (0.079)

Package	CD1607	CD2010	CD214A	CD214B	CD214C
Competition Package	SOD-123 MiniSMA	SOD-106 SMA	SMA DO-214C	SMB DO-214AA	SMC DO-214AB
A (Max.)	3.50 (0.138)	3.70 (0.146)	3.70 (0.146)	3.96 (0.156)	6.21 (0.245)
B (Max.)	1.50 (0.059)	2.10 (0.083)	2.10 (0.083)	2.10 (0.083)	3.07 (0.121)
C (Max.)	1.50 (0.059)	1.27 (0.050)	1.27 (0.050)	1.27 (0.050)	1.52 (0.060)

# Recommended Pb Free Reflow Profile



Note: For wave soldering, please contact Bourns Customer Service.

# Available Diode Packages



*CD0402*



*CD0603*



*CD1005*



*CDSOD323*



*CD1206*



*CD1408*



*CD1607*



*CD2010*



*CD214A*



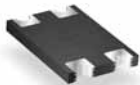
*CD214B*



*CD214C*



*CD216A*



*CD2149*



*CDSOT23*



*CDSOT236*



*CD143A*



*CDNBS08*



*CDNBS16*



*CDWBS16*

# Diode Products

The Bourns® Diode product family includes small-signal High-Speed Switching Diodes, Schottky Barrier Diodes, Zener Diodes, Schottky Rectifier Diodes, High Voltage Rectifier Diodes, Fast Response Rectifier Diodes and Transient Voltage Suppressor (TVS) Diodes. The Chip Diode products are designed to meet the industry demand for smaller electronic components with extremely low power consumption and maximum stand-by time.

The Bourns® Chip Diode product range provides distinct competitive advantages such as:

- *Package Size: The 0603, 1005, 1206, 1408 and 2010 Chip Diodes are leadless, allowing designers to make real estate savings on PCB layouts.*
- *Environmental: All diode terminations are Pb free and RoHS compliant. Units meet many worldwide industry and government regulations on lead free components.*
- *Manufacturing Friendly: Bourns® Diodes conform to JEDEC standards, are easy to handle on standard pick and place equipment and their flat configuration minimizes roll away.*

Chip Diodes are the economical choice for applications in the telecom, industrial, automotive and computer markets. Typical end product applications for the Chip Diode product series include Cellular Phones, PDAs, Desktop PCs, Notebooks, Digital Cameras and MP3 Players.

## High-Speed Switching Chip Diode Series

Bourns offers small-signal high-speed Switching Diodes for switching digital signal applications in compact chip package 0603, 1005 and 1206 size formats, which offer PCB real estate savings and have a lower profile than most competitive parts.

## Schottky Barrier Chip Diode Series

Bourns offers small-signal Schottky Barrier Diodes for switching and rectification applications in compact chip package 0603 and 1005 size formats, which offer PCB real estate savings and lower profiles than some competitive parts.

## Schottky Rectifier Chip Diode Series

Bourns offers Schottky Rectifier Diodes for rectification applications in standard chip package formats such as SMA (DO-214AC), SMB (DO-214AA), SMC (DO-214AB), 1607 (MiniSMA) and 2010 and DO-216AA size formats.

## High Voltage Rectifier Diode Series

High Voltage Glass Passivated Rectifiers offer the designer a forward current of 1 A, 2 A and 3 A with a choice of repetitive peak reverse voltages of 50 V up to 1600 V in SMA, SMB and SMC packaging.

## Fast Response Rectifier Diode Series

Fast Response Schottky Rectifiers for high speed current rectification applications offer the designer a forward current of 1 A, 2 A and 3 A with a choice of repetitive peak reverse voltage of 50 V up to 1000 V, a maximum reverse recovery time of 35 ns, in SMA, SMB and SMC packaging.

## Transient Voltage Suppressor Diode Series

The Transient Voltage Suppressor (TVS) series offers a choice of working peak reverse voltages from 5 V up to 170 V and breakdown voltages up to 200 V. Various discrete and array configurations in packages such as 0402, SMA, SMB, SMC, 8L NSOIC, 16L NSOIC, 16L WSOIC are available.

## Steering Diode Array Series

The Steering Diode Arrays in SOT23-6 and SOT143A packages provide low capacitance ESD protection solutions.

## Zener Diode Series

The small-signal Zener Diodes in 2 V to 39 V range, for voltage reference applications in compact chip package 0603 and 1005 size formats, which offer PCB real estate savings and lower profiles than some competitive parts.

The Chip Diode products, available in 7 inch and 13 inch tape & reel packaging, are compatible with standard pick and place SMT processing equipment.

# Symbols & Terms

$I_O$	Average Rectified Current
$I_F$	Forward Current
$I_R$	Reverse Current
$I_{SURGE}$	Non-Repetitive Forward Peak Current
$V_F$	Forward Voltage
$V_R$	Reverse Voltage

$V_{RRM}$	Repetitive Reverse Peak Voltage
$T_{RR}$	Reverse Recovery Time
$C_T$	Diode Capacitance
$P_D$	Power Dissipation
$T_J$	Junction Temperature
$T_{STG}$	Storage Temperature



### Worldwide Sales Offices

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Benelux:	+31 (0)70 300 4333	+31 (0)70 300 4345
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Germany:	+49 (0)69 800 78212	+49 (0)69 800 78299
Hong Kong:	+852 2411 5599	+852 2412 3611
Ireland:	+44 (0)1276 691087	+44 (0)1276 691088
Italy:	+390 2 389 00041	+390 2 389 00042
Japan:	+81 49 269 3204	+81 49 269 3297
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Malaysia (Penang Office):	+604 6581771	+604 6582771
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Taiwan:	+886 2 25624117	+886 2 25624116
UK:	+44 (0)1276 691087	+44 (0)1276 691088
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