

Rectifier Selection Guide



Definitions and Terms

(1) General-Purpose Rectifiers

Plastic mold type
Various product line from $I_F = 1A$ to $6A$
Needs meet to lead formed products
Needs meet to tape packed products
The material used in the manufacture of these rectifiers is 94V-0, which has been approved by the UL.

(2) High-Speed Rectifiers

SBDs (Schottky Barrier Diode)

Voltage Rating: $V_{RRM} = 20V, 30V, 40V$ and $60V, 80V, 100V$

Current Rating: $I_O = 1$ to $16A$

Forward Voltage Drop: $V_{FM} = 0.45V$ typ..... $V_{RRM} = 30V$

$V_{FM} = 0.50V$ typ..... $V_{RRM} = 40V$

$V_{FM} = 0.70V$ typ..... $V_{RRM} = 60V$

$V_{FM} = 0.85V$ typ..... $V_{RRM} = 100V$

All three types supports high-efficiency design of switching power supplies with low V_{FM} and low I_R .

Current Balance: Center-tap SBDs are monolithic in structure and capable of parallel operation.

FRDs (Fast Recovery Diode)

Voltage Rating: $V_{RRM} = 50\sim 1000V$

Current Rating: $I_{F(AV)} = 1$ to $6A$

High-Speed Switching: Reverse recovery time (t_{rr}) 500 ns max

HEDs (High Efficiency Diode)

Voltage Rating: $V_{RRM} = 100\sim 1000V$

Current Rating: $I_O = 1$ to $16A$

High-Speed Switching: Reverse Recovery Time (t_{rr}) 75 ns max

S-FRDs (Super Fast Recovery Diode)

Voltage Rating: $V_{RRM} = 50V\sim 600V$

Current Rating: $I_{F(AV)} = 1$ to $16A$

High-Speed Switching: Reverse recovery time (t_{rr}) 50 ns max

Bridge Rectifiers

Voltage Rating: $V_{RRM} = 50\sim 1000V$

Current Rating: $I_{F(AV)} = 1$ to $25A$

Selection Guide by Product Categories

General-Purpose Rectifiers and Fast Recovery Rectifiers

General-Purpose Rectifiers

	Package	Peak Repetitive Reverse Voltage							
		50V	100V	200V	400V	600V	800V	1000V	
Average Forward Current	1A	R-1	1A1	1A2	1A3	1A4	1A5	1A6	1A7
		DO-41	1N4001	1N4002	1N4003	1N4004	1N4005	1N4006	1N4007
		SMA	GS1A	GS1B	GS1D	GS1G	GS1J	GS1K	GS1M
	1.5A	DO-15	1N5391	1N5392	1N5393	1N5395	1N5397	1N5398	1N5399
	2A	DO-15	RL201	RL202	RL203	RL204	RL205	RL206	RL207
		SMA	GS2A/A	GS2B/A	GS2D/A	GS2G/A	GS2J/A	GS2K/A	GS2M/A
		SMB	GS2A/B	GS2B/B	GS2D/B	GS2G/B	GS2J/B	GS2K/B	GS2M/B
	3A	DO-201AD	1N5400	1N5401	1N5402	1N5404	1N5406	1N5407	1N5408
		SMA	GS3A/A	GS3B/A	GS3D/A	GS3G/A	GS3J/A	GS3K/A	GS3M/A
		SMC	GS3A/C	GS3B/C	GS3D/C	GS3G/C	GS3J/C	GS3K/C	GS3M/C
	6A	R-6	6A1	6A2	6A3	6A4	6A6	6A8	6A10

Fast Recovery Diodes (FRDs)

	Package	Reverse Recovery Time	Peak Repetitive Reverse Voltage							
			50V	100V	200V	400V	600V	800V	1000V	
Average Forward Current	1A	150,250,500	1F1	1F2	1F3	1F4	1F5	1F6	1F7	
		150,250,500	FR101	FR102	FR103	FR104	FR105	FR106	FR107	
		150,250,500	RS1A	RS1B	RS1D	RS1G	RS1J	RS1K	RS1M	
	1.5A	DO-15	150,250,500	FR151	FR152	FR153	FR154	FR155	FR156	FR157
	2A	DO-15	150,250,500	FR201	FR202	FR203	FR204	FR205	FR206	FR207
		SMA	150,250,500	RS2A/A	RS2B/A	RS2D/A	RS2G/A	RS2J/A	RS2K/A	RS2M/A
		SMB	150,250,500	RS2A/B	RS2B/B	RS2D/B	RS2G/B	RS2J/B	RS2K/B	RS2M/B
	3A	DO-201AD	150,250,500	FR301	FR302	FR303	FR304	FR305	FR306	FR307
		SMA	150,250,500	RS3A/A	RS3B/A	RS3D/A	RS3G/A	RS3J/A	RS3K/A	RS3M/A
		SMC	150,250,500	RS3A/C	RS3B/C	RS3D/C	RS3G/C	RS3J/C	RS3K/C	RS3M/C
	6A	R-6	150,250,500	FR601	FR602	FR603	FR604	FR605	FR606	FR607

High Efficiency Recovery Diodes (HEDs)

	Package	Reverse Recovery Time	Peak Repetitive Reverse Voltage								
			50V	100V	200V	300V	400V	600V	800V	1000V	
Average Forward Current	1A	50,75	1H1	1H2	1H3	1H4	1H5	1H6	1H7	1H8	
		50,75	HER101	HER102	HER103	HER104	HER105	HER106	HER107	HER108	
		50,75	US1A	US1B	US1D		US1G	US1J	US1K	US1M	
	1.5A	DO-15	50,75	HER151	HER152	HER153	HER154	HER155	HER156	HER157	HER158
	2A	DO-15	50,75	HER201	HER202	HER203	HER204	HER205	HER206	HER207	HER208
		SMA	50,75	US2A/A	US2B/A	US2D/A		US2G/A	US2J/A	US2K/A	US2M/A
		SMB	50,75	US2A/B	US2B/B	US2D/B		US2G/B	US2J/B	US2K/B	US2M/B
	3A	DO-201AD	50,75	HER301	HER302	HER303	HER304	HER305	HER306	HER307	HER308
		SMA	50,75	US3A/A	US3B/A	US3D/A		US3G/A	US3J/A	US3K/A	US3M/A
		SMC	50,75	US3A/C	US3B/C	US3D/C		US3G/C	US3J/C	US3K/C	US3M/C
	5A	DO-201AD	50,75	HER501	HER502	HER503	HER504	HER505	HER506	HER507	HER508
	8A	TO-220AC	60,100	HER802	HER802	HER803	HER804	HER805	HER806		
16A	TO-220AB	60,100	HER16A	HER16B	HER16D	HER16F	HER16G	HER16J			

Super fast Rectifiers and Schottky Barrier Rectifiers and Bridge rectifiers

Super Fast Diodes(S-FRDs)

	Package	Reverse Recovery Time	Peak Repetitive Reverse Voltage							
			50V	100V	150V	200V	300V	400V	600V	
Average Forward Current	1A	DO-41	35	SF11	SF12	SF13	SF14	SF15	SF16	SF17
		SMA	35	ES1A	ES1B	ES1C	ES1D	ES1F	ES1G	ES1J
	2A	DO-15	35	SF21	SF22	SF23	SF24	SF25	SF26	SF27
		SMA	35	ES2A/A	ES2B/A	ES2C/A	ES2D/A	ES2F/A	ES2G/A	ES2J/A
	3A	SMB	35	ES2A/B	ES2B/B	ES2C/B	ES2D/B	ES2F/B	ES2G/B	ES2J/B
		DO-201AD	35	SF31	SF32	SF33	SF34	SF35	SF36	SF37
		SMA	35	ES3A/A	ES3B/A	ES3C/A	ES2D/A	ES3F/A	ES3G/A	ES3J/A
	5A	DO-201AD	35	SF51	SF52	SF53	SF54	SF55	SF56	SF57
		SMA	35	ES3A/C	ES3B/C	ES3C/C	ES2D/C	ES3F/C	ES3G/C	ES3J/C
	8A	TO-220AC	35,50	SF81	SF82	SF83	SF84	SF85	SF86	SF87
16A	TO-220AB	35,50	SF16A	SF16B	SF16C	SF16D	SF16F	SF16G		

Schottky Barrier Diodes(SBDs)

	Package	Peak Repetitive Reverse Voltage							
		20V	30V	40V	50V	60V	80V	100V	
Average Forward Current	1A	R-1	1S20	1S30	1S40	1S50	1S60		
		DO-41	1N5817	1N5818	1N5819				
		DO-41	SB120	SB130	SB140	SB150	SB160	SB180	SB1100
		SMA	SS12	SS13	SS14	SS15	SS16	SS18	SS110
	2A	DO-15	SB220	SB230	SB240	SB250	SB260	SB280	SB2100
		SMA	SS22/A	SS23/A	SS24/A	SS25/A	SS26/A	SS28/A	SS210/A
		SMB	SS22/B	SS23/B	SS24/B	SS25/B	SS26/B	SS28/B	SS210/B
	3A	DO-201AD	1N5820	1N5821	1N5822				
		DO-201AD	SB320	SB330	SB340	SB350	SB360	SB380	SB3100
		SMA	SS32/A	SS33/A	SS34/A	SS35/A	SS36/A	SS38/A	SS310/A
		SMA	SS32/C	SS33/C	SS34/C	SS35/C	SS36/C	SS38/C	SS310/C
	5A	DO-201AD	SB520	SB530	SB540	SB550	SB560	SB580	SB5100
	8A	TO-220AC	SB820	SB830	SB840	SB850	SB860	SB880	SB3100
	10A	TO-220AB	SB1020	SB1030	SB1040	SB1050	SB1060	SB1080	SB10B
	16A	TO-220AB	SB1620	SB1630	SB1640	SB1650	SB1660	SB1680	SB16B

Bridge Rectifiers

Average Forward Current	Package	Peak Repetitive Reverse Voltage							
		50V	100V	200V	400V	600V	800V	1000V	
0.5A	TO-269AA		B2S		B4S	B6S			
1A	DFM	DB101M	DB102M	DB103M	DB104M	DB106M	DB108M	DB110M	
	DFS	DB101S	DB102S	DB103S	DB104S	DB106S	DB108S	DB110S	
	WOM	W001	W002	W003	W04	W06	W08	W10	
1.5A	WOM	W01M	W02M	W03M	W04M	W06M	W08M	W10M	
2A	WOG	2W01	2W02	2W03	2W04	2W06	2W08	2W10	
	KBPM	KBPM201	KBPM202	KBPM203	KBPM204	KBPM205	KBPM206	KBPM207	
4A	KBL	RS401	RS402	RS403	RS404	RS405	RS406	RS407	
	KBJ	RS401G	RS402G	RS403G	RS404G	RS405G	RS406G	RS407G	
6A	KBU	RS601	RS602	RS603	RS604	RS605	RS606	RS607	
	GBJ	RS601G	RS602G	RS603G	RS604G	RS605G	RS606G	RS607G	
8A	GBJ	RS801G	RS802G	RS803G	RS804G	RS805G	RS806G	RS807G	
15A	GBJ	RS1501G	RS1502G	RS1503G	RS1504G	RS1505G	RS1506G	RS1507G	
20A	GBJ	RS2001G	RS2002G	RS2003G	RS2004G	RS2005G	RS2006G	RS2007G	
25A	GBJ	RS2501G	RS2502G	RS2503G	RS2504G	RS2505G	RS2506G	RS2507G	