RECTIFIERS

1N645 Series • 400mA Rectifiers in D0-35 Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (B_V) Volts	Maximum Average Rectified Current (I_O) 25° C Amps	Maximum Average Rectified Current (I_O) 150° C Amps	Forward Voltage Drop (V_F) @ I_F = 400mA (MIN.) Volts	Forward Voltage Drop (V_F) @ I_F = 400mA (MAX.) Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25 C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150° C µA	Maximum Surge Current (I_{FSM}) (NOTE 1) Amps	Maximum Junction Capacitance @ -4V (C_O) pF
1N645-1 ✔	**225**	**270**	**0.4**	**0.15**	**0.80**	**1.0**	**.050**	**25**	**5**	**20**
1N647-1 ✔	**400**	**480**	**0.4**	**0.15**	**0.80**	**1.0**	**.050**	**25**	**5**	**20**
1N649-1	600	720	0.4	0.15	0.80	1.0	.050	25	5	20
1N645 ✔	**225**	**270**	**0.4**	**0.15**	**—**	**1.0**	**.025**	**15**	**5**	**20**
1N647 ✔	**400**	**480**	**0.4**	**0.15**	**—**	**1.0**	**.025**	**15**	**5**	**20**
1N649	600	720	0.4	0.15	—	1.0	.050	25	5	20

Note 1: T_A = 150° C, I_o = 150mAdc, 10 surges of 8.3 msec

1N4001 Series • 1 Amp Rectifiers in DO-41 Package

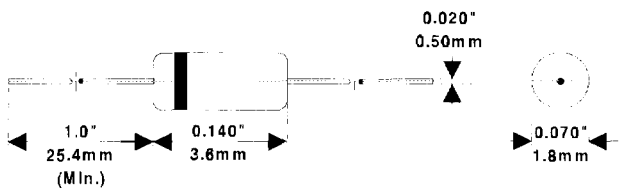
Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ 1.0A Volts	Maximum Reverse Current (I_R) @ PIV µA	Maximum Surge Current (I_{FSM}) Amps
1N4001	50	1.0	1.1	5.0	30
1N4002	100	1.0	1.1	5.0	30
1N4003	200	1.0	1.1	5.0	30
1N4004	400	1.0	1.1	5.0	30

LL4001 Series • 1 Amp Rectifiers in LL-41 Surface Mount Package

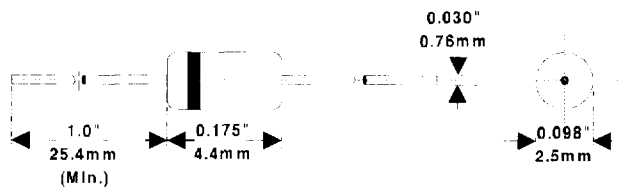
Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ 1.0A Volts	Maximum Reverse Current (I_R) @ PIV µA	Maximum Surge Current (I_{FSM}) Amps
LL4001	50	1.0	1.1	5.0	25
LL4002	100	1.0	1.1	5.0	25
LL4003	200	1.0	1.1	5.0	25
LL4004	400	1.0	1.1	5.0	25

✔ *Mil-Approved Devices, See Page 5 for Level of Qual*

DO-35 Glass Package
(nominal dimensions)



DO-41 Glass Package
(nominal dimensions)



1N4933 Series • Miniature Fast Recovery Rectifiers in DO-41 Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ 1.0A Volts	Maximum Reverse Current (I_R) @ PIV µA	Maximum Surge Current (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 1) t_{rr} nS
1N4933	50	1.0	1.2	5.0	30	200
1N4934	100	1.0	1.2	5.0	30	200
1N4935	200	1.0	1.2	5.0	30	200
1N4936	400	1.0	1.2	5.0	30	200

Note 1: I_F = 1.0A, I_R = 30V, di/dt = 50 A/µS

LL4933 Series • Miniature Fast Recovery Rectifiers in LL-41 Surface Mount Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current I_O Amps	Maximum Forward Voltage Drop (V_F) @ 1.0A Volts	Maximum Reverse Current (I_R) @ PIV µA	Maximum Surge Current (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 1) t_{rr} nS
LL4933	50	1.0	1.2	5.0	25	200
LL4934	100	1.0	1.2	5.0	25	200
LL4935	200	1.0	1.2	5.0	25	200
LL4936	400	1.0	1.2	5.0	25	200

Note 1: I_F = 1.0A, I_R = 30V, di/dt = 50 A/µS

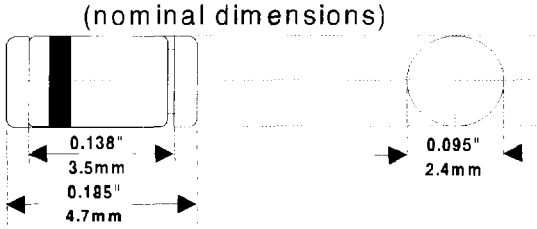
1N3611 Series • General Purpose Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (B_V) Volts	Maximum Average Rectified Current (I_O) 100° C Amps	Maximum Average Rectified Current (I_O) 150° C Amps	Maximum Forward Voltage Drop (V_F) @ 1A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25°C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150°C µA	Maximum Surge Current (NOTE 1) (I_{FSM}) Amps
1N3611	200	240	1.0	0.3	1.1	1.0	300	30
1N3612	400	480	1.0	0.3	1.1	1.0	300	30
1N3613	600	720	1.0	0.3	1.1	1.0	300	30
1N3614	800	920	1.0	0.3	1.1	1.0	300	30

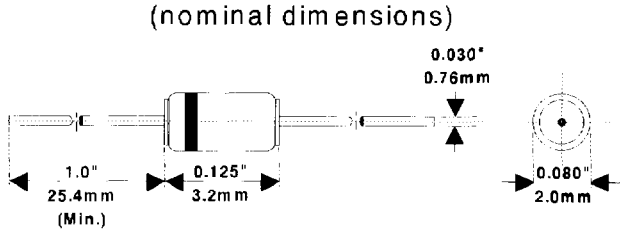
Note 1: T_A = 150° C, F = 60 Hz, I_o = 300mA, 10 surges of 8.3 msec. @ 1/minute

Note 2: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

LL-41 MELF
Surface Mount Package
(nominal dimensions)



A Body
Voidless Glass Package
(nominal dimensions)



1N4245 Series • General Purpose Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (B_V) Volts	Maximum Average Rectified Current (I_O) 100° C Amps	Maximum Average Rectified Current (I_O) 150° C Amps	Maximum Forward Voltage Drop (V_F) @ 3A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150° C µA	Maximum Surge Current (NOTE 1) (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 2) (t_{rr}) µS
1N4245	200	240	1.00	0.333	1.3	1.0	150	25	5.0
1N4246	400	480	1.00	0.333	1.3	1.0	150	25	5.0
1N4247	600	720	1.00	0.333	1.3	1.0	150	25	5.0
1N4248 ■	800	960	1.00	0.333	1.3	1.0	150	25	5.0
1N4249 ■	1000	1150	1.00	0.333	1.3	1.0	150	25	5.0

Note 1: T_A = 100° C, F = 60 Hz, I_o = 1.0A, 10 surges of 8.3 msec. @ 1/minute

Note 2: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 3: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

1N5614 Series • General Purpose Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (BV) Volts	Maximum Average Rectified Current (I_O) 55° C Amps	Maximum Average Rectified Current (I_O) 100° C Amps	Maximum Forward Voltage Drop (V_F) @ 3A (MIN.) Volts	Maximum Forward Voltage Drop (V_F) @ 3A (MAX.) Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150° C µA	Maximum Surge Current (NOTE 1) (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 2) (t_{rr}) µS
1N5614	200	220	1.00	0.750	0.8	1.3	1.0	25	30	2.0
1N5616	400	440	1.00	0.750	0.8	1.3	1.0	25	30	2.0
1N5618	600	660	1.00	0.750	0.8	1.3	1.0	25	30	2.0
1N5620 ■	800	880	1.00	0.750	0.8	1.3	1.0	25	30	2.0
1N5622 ■	1000	1100	1.00	0.750	0.8	1.3	1.0	25	30	2.0

Note 1: T_A = 100° C, F = 60 Hz, I_o = 0.75A 10 surges of 8.3 msec. @ 1/minute

Note 2: I_F = 0.5A, I_R = 1.0A = t_{rr} @ 0.25A

Note 3: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

1N5615 Series • Fast Recovery Rectifiers in "A" Body Package

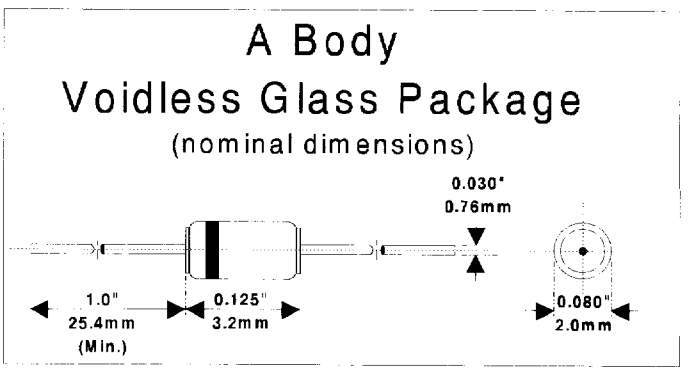
Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 50 µA (B_V) Volts	Maximum Average Rectified Current (I_O) 55° C Amps	Maximum Average Rectified Current (I_O) 100° C Amps	Maximum Forward Voltage Drop (V_F) @ 1A (MIN.) Volts	Maximum Forward Voltage Drop (V_F) @ 1A (MAX.) Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150° C µA	Maximum Capacitance @ -12V (C_O) pF	Maximum Surge Current (NOTE 1) (I_{FSM})) Amps	Maximum Reverse Recovery (NOTE 2) (t_{rr}) nS
1N5615	200	220	1.00	0.750	0.8	1.6	0.5	25	45	25	150
1N5617	400	440	1.00	0.750	0.8	1.6	0.5	25	35	25	150
1N5619	600	660	1.00	0.750	0.8	1.6	0.5	25	25	25	250
1N5621 ■	800	880	1.00	0.750	0.8	1.6	0.5	25	20	25	300
1N5623 ■	1000	1100	1.00	0.750	0.8	1.6	0.5	25	15	25	500

Note 1: T_A = 100° C, F = 60 Hz, I_o = 750 mA, 10 surges @ 8.3 msec. @ 1 minute

Note 2: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 3: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

■ *Under Development, Please Consult Factory*



1N4942 Series • Fast Switching Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 50 µA (B_V) Volts	Maximum Average Rectified Current (I_O) 55° C Amps	Maximum Average Rectified Current (I_O) 100° C Amps	Maximum Forward Voltage Drop (V_F) @ 1A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 150° C µA	Maximum Capacitance @ -12V (C_O) pF	Maximum Surge Current (NOTE 1) (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 2) (t_{rr}) nS
1N4942	200	220	1.0	0.750	1.3	1.0	200	45	15	150
1N4944	400	440	1.0	0.750	1.3	1.0	200	35	15	150
1N4946	600	660	1.0	0.750	1.3	1.0	200	25	15	250
1N4947 ■	800	880	1.0	0.750	1.3	1.0	200	25	15	250
1N4948 ■	1000	1100	1.0	0.750	1.3	1.0	200	15	15	500

Note 1: T_A = 100° C, F = 60 Hz, I_o = 750 mA, 10 surges @ 8.3 msec. @ 1 minute

Note 2: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 3: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

BES1001 Series • Fast Switching Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 25° C Volts	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 100° C Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 100° C µA	Maximum Surge Current (I_{FSM}) Amps	Maximum Reverse RecoverY (NOTE 1) (t_{rr}) nS
BES1001	50	1.0	0.975	0.895	2	50	30	25
BES1002	100	1.0	0.975	0.895	2	50	30	25
BES1003	150	1.0	0.975	0.895	2	50	30	25

Note 1: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 2: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

BES1101 Series • Fast Switching Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 25° C Volts	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 100° C Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 100° C µA	Maximum Surge Current (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS
BES1101	50	2.5	0.975	0.875	2	50	35	25
BES1102	100	2.5	0.975	0.875	2	50	35	25
BES1103	150	2.5	0.975	0.875	2	50	35	25

Note 1: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 2: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

BES1104 Series • Fast Switching Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Average Rectified Current (I_O) Amps	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 25° C Volts	Maximum Forward Voltage Drop (V_F) @ I_F @ 1A 100° C Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 100° C µA	Maximum Surge Current (I_{FSM}) Amps	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS
BES1104	200	1.0	1.25	1.15	10	200	20	50
BES1105	300	1.0	1.25	1.15	10	200	20	50
BES1106	400	1.0	1.25	1.15	10	200	20	50

Note 1: I_F = 0.5A, I_R = 1.0A, t_{rr} @ 0.25A

Note 2: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

■ *Under Development, Please Consult Factory*

1N5802 Series • Fast Switching Rectifiers in "A" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (BV) Volts	Maximum Average Rectified Current (I_O) @ 55° C Amps	Maximum Forward Voltage Drop (V_F) @ IR =1.0A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 100° C µA	Maximum Surge Current (NOTE 1) (I_{FSM}) Amps	Typical Junction Capacitance @ -10V (C_O) pF	Maximum Reverse Recovery (NOTE 2) (t_{rr}) nS
1N5802 ✔	**55**	**55**	**2.5**	**0.875**	**1.0**	**50**	**35**	**15**	**25**
1N5803	80	80	2.5	0.875	1.0	50	35	15	25
1N5804 ✔	**110**	**110**	**2.5**	**0.875**	**1.0**	**50**	**35**	**15**	**25**
1N5805	135	135	2.5	0.875	1.0	50	35	15	25
1N5806 ✔	**160**	**160**	**2.5**	**0.875**	**1.0**	**50**	**35**	**15**	**25**

Note 1: T_A = 55° C @ rated I_o, 10 surges of 8.3 msec., V_{RWM} = Rated PIV

Note 2: $I_F = I_R$ = 0.5A, t_{rr} @ .05A

Note 3: Commercial versions available in glass/dumet DO-41 and LL-41 packages. Consult factory.

1N5550 Series • General Purpose Rectifiers in "B" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 50 µA (B_V) Volts	Maximum Average Rectified Current (I_O) @ 55° C Amps	Forward Voltage Drop (V_F) @ 9A (pk) (MIN.) Volts	Forward Voltage Drop (V_F) @ 9A (pk) (MAX.) Volts	Maximum Reverse Current (I_R) @ PIV µA	Maximum Reverse Recovery (t_{rr}) µS
1N5550	200	240	5.0	0.6	1.2	1.0	2.0
1N5551	400	480	5.0	0.6	1.2	1.0	2.0
1N5552	600	660	5.0	0.6	1.2	1.0	2.0
1N5553 ■	800	880	5.0	0.6	1.2	1.0	2.0
1N5554 ■	1000	1100	5.0	0.6	1.2	1.0	2.0

1N5415 Series • Switching Rectifiers in "B" Body Package

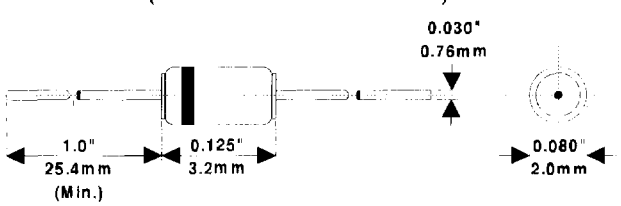
Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 50 µA (B_V) Volts	Forward Voltage Drop (V_F) 1.5A Volts	Forward Voltage Drop (V_F) 9A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	Maximum Reverse Leakage Current (I_R) @ PIV 100° C µA	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS	Maximum Surge Current 100° C (I_{FSM}) A(pk)
1N5415	50	55	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	150	80
1N5416	100	110	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	150	80
1N5417	200	220	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	150	80
1N5418	400	440	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	150	80
1N5419	500	550	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	250	80
1N5420	600	660	0.5 - 1.2	0.6 - 1.5 (pk)	1.0	20	400	80

Note 1: $I_F = I_R$ = 1.0A, t_{rr} @ 0.25A

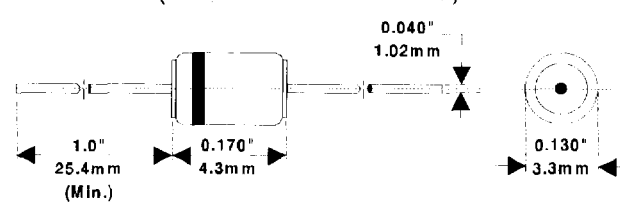
✔ *Mil-Approved Devices, See Page 5 for Level of Qual*

■ *Under Development, Please Consult Factory*

A Body
Voidless Glass Package
(nominal dimensions)



B Body
Voidless Glass Package
(nominal dimensions)



1N5186 Series • Switching Rectifiers in "B" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 50 µA (B_V) Volts	Maximum Forward Voltage Drop (V_F) @ 3A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	100° C µA	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS	Maximum Surge Current 25° C (I_{FSM}) A(pk)
1N5186	100	120	1.1	2.0	100	250	80
1N5187	200	240	1.1	2.0	100	250	80
1N5188	400	440	1.1	2.0	100	300	80
1N5189	500	550	1.1	2.0	100	300	80
1N5190	600	650	1.1	2.0	100	400	80

Note 1: $I_F = I_R = 1.0A$. t_{rr} @ 0.5A

1N5807 Series • Fast Switching Rectifiers in "B" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Breakdown Voltage (MIN.) @ 100µA (B_V) Volts	Maximum Average Rectified Current (I_O) @ 75° C Amps	Maximum Forward Voltage Drop (V_F) @ 4A Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	75° C µA	Maximum Surge Current (I_{FSM}) Amps	Typical Junction Capacitance @ -10V (C_O) pF	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS
1N5807 ✔	**50**	**55**	**6.0**	**0.875**	**5**	**150**	**125**	**45**	**30**
1N5808	75	80	6.0	0.875	5	150	125	45	30
1N5809 ✔	**100**	**110**	**6.0**	**0.875**	**5**	**150**	**125**	**45**	**30**
1N5810	125	135	6.0	0.875	5	150	125	45	30
1N5811 ✔	**150**	**160**	**6.0**	**0.875**	**5**	**150**	**125**	**45**	**30**

Note 1: $I_F = I_R = 1.0A$, t_{rr} @ 0.1A

BES1301 Series • Fast Switching Rectifiers in "B" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Forward Voltage Drop (V_F) @ I_F = 6A 25° C Volts	100° C Volts	Maximum Reverse Leakage Current (I_R) @ Rated V_R 25° C µA	100° C µA	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS
BES1301	50	0.925	0.050	5	150	30
BES1302	100	0.925	0.050	5	150	30
BES1303	150	0.925	0.050	5	150	30

Note 1: Measured in circuit $I_F = 0.5A$, $I_R = 1.0A$, t_{rr} @ 0.25A

BES1304 Series • Fast Switching Rectifiers in "B" Body Package

Type	Peak Inverse Voltage (MIN.) (PIV) Volts	Maximum Forward Voltage Drop (V_F) @ I_F = 3A 25° C Volts	100° C Volts	Maximum Reverse Leakage Current (I_R) @ PIV 25° C µA	100° C µA	Maximum Reverse Recovery (NOTE 1) (t_{rr}) nS
BES1304	200	1.25	1.15	20	500	50
BES1305	300	1.25	1.15	20	500	50
BES1306	400	1.25	1.15	20	500	50

Note 1: Measured in circuit $I_F = 0.5A$, $I_R = 1.0A$, t_{rr} @ 0.25A

✔ *Mil-Approved Devices, See Page 5 for Level of Qual*