

- $B_V \dots 200 \text{ V (Min)}$
- $I_r \dots 1.0 \text{ ns (Max) @ } 125 \text{ V}$

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature	150°C
Operating Junction Temperature	150°C

Power Dissipation (Notes 2 & 3)

Total Device Dissipation at $T_A = 25^\circ \text{C}$	0.350 mW
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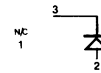
Voltages & Currents (Note 4)

W_{IV} Working Inverse Voltage	150 V
I_O Average Rectified Current	200 mA
I_F DC Forward Current	300 mA
i_F Recurrent Peak Forward Current	400 mA

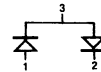
Connection Diagram



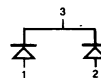
1201



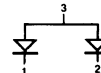
1202



1203



1204



1205

PACKAGE

FDSO1201	TO-236AA/AB
FDSO1202	TO-236AA/AB
FDSO1203	TO-236AA/AB
FDSO1204	TO-236AA/AB
FDSO1205	TO-236AA/AB

ELECTRICAL CHARACTERISTICS (25°C Ambient Temperature unless otherwise noted) (Note 5)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
B_V	Breakdown Voltage	100		V	$I_R = 100 \mu\text{A}$
I_R	Reverse Current		25 50 5.0	nA nA nA	$V_R = 20 \text{ V}$ $V_R = 50 \text{ V}$ $V_R = 50 \text{ V}, T_J = 150^\circ \text{C}$
V_F	Forward Voltage	0.55 0.66 0.82 0.87	0.60 0.74 0.92 1.0 1.1	V V V V V	$I_F = 1.0 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 200 \text{ mA}$ $I_F = 300 \text{ mA}$
t_{rr}	Reverse Recovery Time		4.0	ns	$I_F = I_R = 10 \text{ mA}, R_L = 100 \Omega,$ $I_{RR} = 1.0 \text{ mA}$
C	Capacitance		2.0	pF	$V_R = 0, f = 1.0 \text{ MHz}$

NOTES:

1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings give a maximum junction temperature of 150°C and junction-to-ambient thermal resistance of 357°C/W (derating factor of 2.8 mW/°C).
4. Rating refers to a high current point where collector to emitter voltage is lowest.
5. For product family characteristic curves, refer to Curve Set D-1.

FDSO1401 - 1405

High Voltage General Purpose Diode

- $P_D \dots 350 \text{ mW @ } T_A = 25^\circ \text{ C}$
- $B_V \dots 200 \text{ V (Min)}$
- $V_F \dots 1.1 \text{ V (Max) @ } 300 \text{ mA}$

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature	150° C
Operating Junction Temperature	150° C

Power Dissipation (Notes 2 & 3)

Total Device Dissipation at $T_A = 25^\circ \text{ C}$	0.350 mW
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Voltages & Currents

W_{IV} Working Inverse Voltage	200 V
I_o Average Rectified Current	200 mA
I_f DC Forward Current	300 mA
i_f Recurrent Peak Forward Current	400 mA

Connection Diagram



PACKAGE

FDSO1401	TO-236AA/AB
FDSO1402	TO-236AA/AB
FDSO1403	TO-236AA/AB
FDSO1404	TO-236AA/AB
FDSO1405	TO-236AA/AB

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 4)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
B_V	Breakdown Voltage	200		V	$I_R = 100 \mu\text{A}$
I_R	Reverse Voltage Leakage Current		40 100	nA nA	$V_R = 120 \text{ V}$ $V_R = 175 \text{ V}$
V_F	Forward Voltage	0.76	0.80 0.92 1.0 1.1	V V V V	$I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 200 \text{ mA}$ $I_F = 300 \text{ mA}$
C	Capacitance		2.0	pF	$V_R = 0, f = 1.0 \text{ MHz}$
t_{rr}	Reverse Recovery Time		50	ns	$I_F = 30 \text{ mA}, I_{rr} = 1.0 \text{ mA}, R_L = 100 \Omega$

- NOTES:**
1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
 2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
 3. These ratings give a maximum junction temperature of 150° C and junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/° C).
 4. For product family characteristic curves, refer to Curve Set D-2.

FDSO1501 - 1505

High Conductance Low Leakage Diode

- $P_D \dots 350 \text{ mW @ } T_A = 25^\circ \text{C}$
- $B_V \dots 200 \text{ V (Min)}$
- $I_R \dots 1.0 \text{ nA (Max) @ } 125 \text{ V}$

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature	150° C
Operating Junction Temperature	150° C

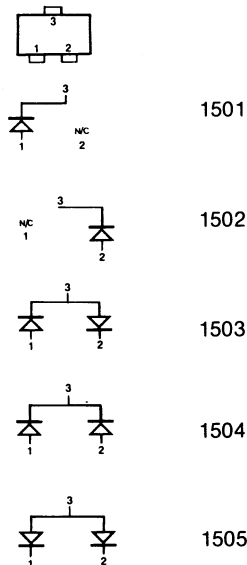
Power Dissipation (Notes 2 & 3)

Total Device Dissipation at $T_A = 25^\circ \text{C}$	0.350 mW
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Voltages & Currents

W_{IV} Working Inverse Voltage	150 V
I_O Average Rectified Current	200 mA
I_f DC Forward Current	300 mA
i_f Recurrent Peak Forward Current	400 mA

Connection Diagram



PACKAGE

FDSO1501	TO-236AA/AB
FDSO1502	TO-236AA/AB
FDSO1503	TO-236AA/AB
FDSO1504	TO-236AA/AB
FDSO1505	TO-236AA/AB

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 4)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
B_V	Breakdown Voltage	200		V	$I_R = 5 \mu\text{A}$
I_R	Reverse Voltage Leakage Current		1.0 10 5.0 3.0	nA nA μA μA	$V_R = 125 \text{ V}$ $V_R = 180 \text{ V}$ $V_R = 180 \text{ V}, T_A = 150^\circ \text{C}$ $V_R = 125 \text{ V}, T_A = 150^\circ \text{C}$
V_F	Forward Voltage	0.60 0.69 0.80 0.83 0.87 0.90	0.68 0.80 0.88 0.92 1.0 1.15	V mV mV mV mV mV	$I_F = 1.0 \text{ mA}$ $I_F = 10 \text{ mA}$ $I_F = 50 \text{ mA}$ $I_F = 100 \text{ mA}$ $I_F = 200 \text{ mA}$ $I_F = 300 \text{ mA}$
C_T	Diode Capacitance		4.0	pF	$V_R = 0, f = 1.0 \text{ MHz}$

- NOTES:**
1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
 2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
 3. These ratings give a maximum junction temperature of 150° C and junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/°C).
 4. For product family characteristic curves, refer to Curve Set D-2.

- $P_D \dots 350 \text{ mW} @ T_A = 25^\circ \text{C}$
- $C_T \dots 1.0 \text{ pf (Max)} @ V_R = 0, f = 1.0 \text{ MHz}$
- $t_{rr} \dots 700 \text{ ps (Max)} @ I_f = I_r = 10 \text{ mA}, R_L = 100 \Omega$

ABSOLUTE MAXIMUM RATINGS (Note 1)

Temperatures

Storage Temperature	150° C
Operating Junction Temperature	150° C

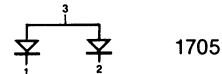
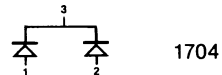
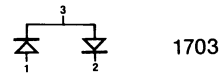
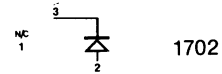
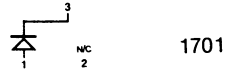
Power Dissipation (Notes 2 & 3)

Total Device Dissipation at $T_A = 25^\circ \text{C}$	0.350 mW
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Voltages & Currents

W_{IV} Working Inverse Voltage	20 V
I_o Average Rectified Current	50 mA
I_f DC Forward Current	150 mA
I_r Recurrent Peak Forward Current	150 mA

Connection Diagram



PACKAGE

FDSO1701	TO-236AA/AB
FDSO1702	TO-236AA/AB
FDSO1703	TO-236AA/AB
FDSO1704	TO-236AA/AB
FDSO1705	TO-236AA/AB

ELECTRICAL CHARACTERISTICS (25° C Ambient Temperature unless otherwise noted) (Note 4)

SYMBOL	CHARACTERISTIC	MIN	MAX	UNITS	TEST CONDITIONS
B_V	Breakdown Voltage	30		V	$I_R = 5.0 \mu\text{A}$
I_R	Reverse Voltage Leakage Current	50		nA	$V_R = 20 \text{ V}$
V_F	Forward Voltage	0.42	0.50	V	$I_F = 10 \mu\text{A}$
		0.52	0.61	V	$I_F = 100 \mu\text{A}$
		0.64	0.74	V	$I_F = 1.0 \text{ mA}$
		0.76	0.88	V	$I_F = 10 \text{ mA}$
		0.81	0.95	V	$I_F = 20 \text{ mA}$
		0.89	1.1	V	$I_F = 50 \text{ mA}$
C_T	Diode Capacitance		1.0	pF	$V_R = 0, f = 1.0 \text{ MHz}$
t_{rr}	Reverse Recovery Time		700	ps	$I_F = I_R = 10 \text{ mA}, I_{RR} = 1.0 \text{ mA}, R_L = 100 \Omega$

NOTES:

1. These ratings are limiting values above which the serviceability of any individual semiconductor device may be impaired.
2. These are steady state limits. The factory should be consulted on applications involving pulsed or low duty cycle operations.
3. These ratings give a maximum junction temperature of 150° C and junction-to-ambient thermal resistance of 357° C/W (derating factor of 2.8 mW/° C).
4. For product family characteristic curves, refer to Curve Set D-3.