

FA Series

T-43-24

Matched Pair and Quad Assemblies Diodes PACKAGE All Devices DO-7

MATCHING CHARACTERISTICS Apply over temperature range of -55°C to +100°C

| Basic Diode (See Specification Below) | Forward Current Matching Range (Notes 4 & 6) | Reverse Current Match (ΔI_R Maximum) (Note 3) | Forward Voltage Match (ΔV_F Maximum) | Assembly Type Number | |
|--|---|--|--|----------------------|---------|
| | | | | Pair | Quad |
| FD1389 | 10 μ A to 1.0 mA | | 3.0 mV | FA2310U | FA4310U |
| FD1389 | 10 μ A to 1.0 mA | | 10 mV | FA2311U | FA4311U |
| FD1389 | 1.0 mA to 10 mA | | 5.0 mV | FA2312U | FA4312U |
| FD1389 | 1.0 mA to 10 mA | | 15 mV | FA2313U | FA4313U |
| FD2389 | 10 μ A to 1.0 mA | | 3.0 mV | FA2320U | FA4320U |
| FD2389 | 10 μ A to 1.0 mA | | 10 mV | FA2321U | FA4321U |
| FD2389 | 1.0 mA to 10 mA | | 5.0 mV | FA2322U | FA4322U |
| FD2389 | 1.0 mA to 10 mA | | 15 mV | FA2323U | FA4323U |
| FD2389 | 10 mA to 100 mA | | 10 mV | FA2324U | FA4324U |
| FD2389 | 10 mA to 100 mA | | 20 mV | FA2325U | FA4325U |
| FD3389 | 10 μ A to 1.0 mA | (2.0 + 0.064 V_R) nA | 10 mV | FA2330U | FA4330U |
| FD3389 | 1.0 mA to 10 mA | (2.0 + 0.064 V_R) nA | 15 mV | FA2331U | FA4331U |
| FD3389 | 10 mA to 100 mA | (2.0 + 0.064 V_R) nA | 20 mV | FA2332U | FA4332U |
| FD3389 | 10 μ A to 1.0 mA | (4.0 + 0.128 V_R) nA | 10 mV | FA2333U | FA4333U |
| FD3389 | 1.0 mA to 10 mA | (4.0 + 0.128 V_R) nA | 15 mV | FA2334U | FA4334U |
| FD3389 | 10 mA to 100 mA | (4.0 + 0.128 V_R) nA | 20 mV | FA2335U | FA4335U |
| FD6389 | 10 mA to 100 mA | | 10 mV | FA2360U | FA4360U |
| FD6389 | 10 mA to 100 mA | | 20 mV | FA2361U | FA4361U |

BASIC DIODE ELECTRICAL CHARACTERISTICS 25°C Ambient Temperature unless otherwise noted

| Symbol | Parameter | Test Conditions | FD1389 | | FD2389 | | FD3389 | | FD6389 | | Units |
|-----------|-----------------------|---|--------|------------|--------|--|--------|--|--------|--|--------------------------------------|
| | | | Min | Max | Min | Max | Min | Max | Min | Max | |
| V_{RRM} | Breakdown Voltage | $I_R = 5.0 \mu A$ $I_R = 100 \mu A$ | 100 | | 200 | | 150 | | 75 | | V V |
| I_R | Reverse Current | $V_R = WIV$ $V_R = WIV, T_A = 150^\circ C$ | | 100 100 | | 100 100 | | 1.0 3.0 | | 100 100 | nA μA |
| V_F | Forward Voltage | $I_F = 200 mA$ $I_F = 100 mA$ $I_F = 50 mA$ $I_F = 20 mA$ $I_F = 10 mA$ $I_F = 5.0 mA$ $I_F = 2.0 mA$ $I_F = 1.0 mA$ | | | | 1.000 0.925 0.860 0.790 0.875 0.800 0.725 0.670 | | 1.000 0.930 0.880 0.840 0.810 0.770 0.730 0.710 | | 1.000 0.920 0.880 0.790 0.750 0.710 0.670 0.630 | V V V V V V V V |
| C | Capacitance (Note 5) | $V_R = 0, f = 1 MHz$ | | 2.0 | | 5.0 | | 6.0 | | 3.0 | pF |
| t_{rr} | Reverse Recovery Time | $I_F = I_R = 10 mA$ Recover to 1.0 mA $I_F = I_R = 30 mA$ Recover to 1.0 mA $I_F = I_R = 200 mA$ Recover to 20 mA | | 4.0 | | 50 | | | | 4.0 | ns ns ns |

Note 1: These are Limiting values above which life or satisfactory performance may be impaired.

Note 2: These are steady state Limits. The factory should be consulted on applications involving pulsed or low duty-cycle operation.

Note 3: The Reverse Current Match (ΔI_R) is the difference in reverse current between the diode having the highest I_R and that having the lowest I_R in a given assembly. The reverse voltage (V_R) in the ΔI_R calculation can be any value up to 125V. For example, the maximum ΔI_R for an FA2330U at V_R of 10 V is (2.0 + 0.064 x 10) nA or 2.64 nA.

Note 4: The Forward Current Matching Ranges between 10 μA and 10 mA may be applied either as a dc current or a pulse current. Above 10 mA, however, the matching characteristics are guaranteed only for low duty cycle ($\leq 1\%$) pulse current. Conditions of test are shown in the characteristic curve and test circuit section of this book.

Note 5: For product family characteristics curves for the basic diodes used in the assemblies, refer to the following:
FD1389 D4, FD2389 D1, FD3389 D2 and FD6389 D4.