

**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 ( $\Delta I_R$ Maximum) (Note 3)	Forward Voltage Match ( $\Delta V_F$ Maximum)	Assembly Type Number		
				Pair	Quad	
FD1389	10 $\mu$ A to 1.0 mA		3.0 mV	FA2310U	FA4310U	
FD1389	10 $\mu$ 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 $\mu$ A to 1.0 mA		3.0 mV	FA2320U	FA4320U	
FD2389	10 $\mu$ 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 $\mu$ A to 1.0 mA	(2.0 + 0.064 $V_R$ ) nA	10 mV	FA2330U	FA4330U	
FD3389	1.0 mA to 10 mA		15 mV	FA2331U	FA4331U	
FD3389	10 mA to 100 mA		20 mV	FA2332U	FA4332U	
FD3389	10 $\mu$ 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 <sub>RRM</sub>	Breakdown Voltage	I <sub>R</sub> = 5.0 $\mu$ A I <sub>R</sub> = 100 $\mu$ A	100		200		150		75		V V
I <sub>R</sub>	Reverse Current	V <sub>R</sub> = WIV V <sub>R</sub> = WIV, T <sub>A</sub> = 150°C		100 100		100 100		1.0 3.0		100 100	nA $\mu$ A
V <sub>F</sub>	Forward Voltage	I <sub>F</sub> = 200 mA I <sub>F</sub> = 100 mA I <sub>F</sub> = 50 mA I <sub>F</sub> = 20 mA I <sub>F</sub> = 10 mA I <sub>F</sub> = 5.0 mA I <sub>F</sub> = 2.0 mA I <sub>F</sub> = 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 <sub>R</sub> = 0, f = 1 MHz		2.0		5.0		6.0		3.0	pF
t <sub>rr</sub>	Reverse Recovery Time	I <sub>F</sub> = I <sub>R</sub> = 10 mA Recover to 1.0 mA I <sub>F</sub> = I <sub>R</sub> = 30 mA Recover to 1.0 mA I <sub>F</sub> = I <sub>R</sub> = 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 ( $\Delta I_R$ ) is the difference in reverse current between the diode having the highest I<sub>R</sub> and that having the lowest I<sub>R</sub> in a given assembly. The reverse voltage (V<sub>R</sub>) in the  $\Delta I_R$  calculation can be any value up to 125V. For example, the maximum  $\Delta I_R$  for an FA2330U at V<sub>R</sub> of 10 V is (2.0 + 0.064  $\times$  10) nA or 2.64 nA.

Note 4: The Forward Current Matching Ranges between 10  $\mu$ A 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.