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# FOUR DUAL DIODES (FDD-1A) MODULE P/N 841559

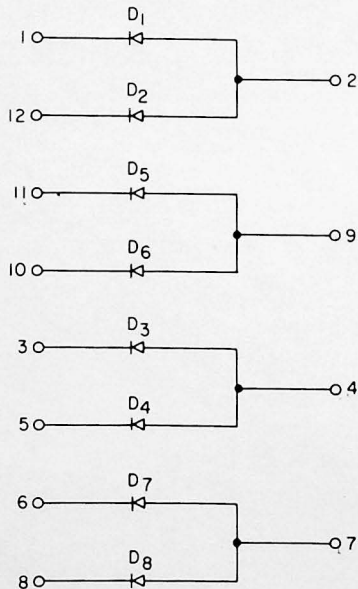
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**IBM** INDUSTRIAL  
PRODUCTS

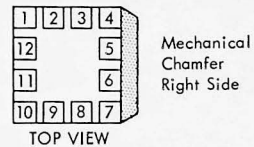
## Functional Description

The Four Dual Diodes, FDD-1A, module consists of four pairs of two diodes with common anodes between pairs. The common anodes and individual cathodes are terminated at the module pins thereby offering the circuit designer uniformity of circuit packaging as well as flexibility in application with other SLT modules. In addition, each pair of diodes can be used in applications where diodes with matched characteristics are required.

## Schematic



## Terminal Configuration



# Maximum Ratings

Maximum Current = 25ma  
 Breakdown Voltage = 13V

# FDD-1A Module Functional Tests

INDIVIDUAL DEVICE PARAMETER TESTS						
TESTS	COM- PONENTS	TEST CONDITIONS	T °C	LIMITS		UNITS
				MIN	MAX	
Q <sub>S</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 3,0ma, See Fig. 1	25		23	PC
V <sub>P</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 2,0ma, See Fig 2	25		0,35	V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 0,1ma	25	0,51		V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 0,5ma	25	0,58		V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 1,0ma	25	0,61		V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 3,0ma	25		0,84	V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 5,0ma	25		0,87	V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 15ma	25		1,05	V
V <sub>F</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>F</sub> = 25ma	25	0,83	1,10	V
BV <sub>R</sub>	D <sub>1</sub> - D <sub>8</sub>	I <sub>R</sub> = 10µa	25	13		V
I <sub>R</sub>	D <sub>1</sub> - D <sub>8</sub>	V <sub>R</sub> = 12V	75		0,5	µa
DIODE CAPACITANCE	D <sub>1</sub> - D <sub>8</sub>	OV BIAS, f = 1 ± 0,5mhz AC SIGNAL ≤ 50mv P-P	25		3,5	pf

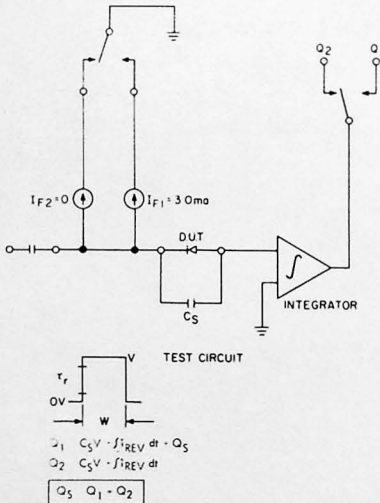


FIGURE 1

## Notes

For this test the diode shunt capacity (incl Probe) shall be  $10.5 \pm 1$  pf with a 50Ω HF Resistor in place of the Diode, the rise time,  $\tau_r$ , of the input voltage wave form shall be  $\leq 2$  ns, the operating frequency  $\leq 50$ KHz, pulse width  $\leq 50$ ns, Bandwidth of detector  $\geq 750$ MHz. Turn on is from  $V_f = 0$ .

## Store Charge Test

- V-PULSE AMPLITUDE:  $5V \pm 25\%$
- W-PULSE WIDTH:  $> 50$ ns
- RISE TIME:  $1\% - 50\% < 0,5$ ns  
 $10\% - 90\% < 0,4$ ns
- SOURCE IMPEDANCE  $< 10$  OHMS
- I<sub>F1</sub> -FORWARD CURRENT =  $3,0ma \pm 0,3\%$
- I<sub>F2</sub> -FORWARD CURRENT =  $0ma$
- C<sub>S</sub> - SHUNT CAPACITY  $< 50$  pf
- INTEGRATOR RESPONSE  $\leq 1$ ns
- Q<sub>1</sub> -CHARGE WHEN D. U. T. IS FORWARD BIASED WITH I<sub>F1</sub> =  $3,0ma$
- Q<sub>2</sub> -CHARGE WHEN D. U. T. IS FORWARD BIASED WITH I<sub>F2</sub> =  $0ma$
- Q<sub>S</sub> - STORED CHARGE
- I<sub>REV</sub> -DIODE LEAKAGE CURRENT

## Forward Recovery

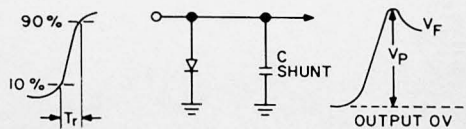


FIGURE 2