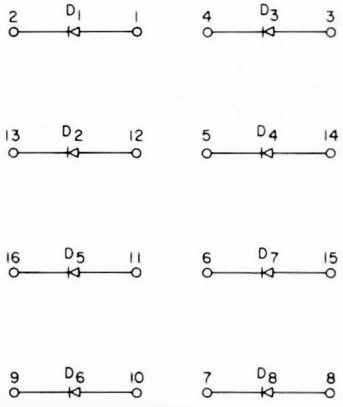
EIGHT SINGLE DIODES (ESD-1A)
MODULE P/N 841531

IBM INDUSTRIAL PRODUCTS

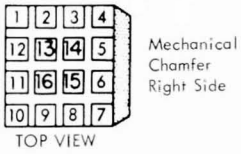
Functional Description

The Eight Single Diodes, ESD-1A, module consists of eight individual diodes with the anode and cathode terminating at specific pins. The individual diodes offer the circuit designer a uniformity of circuit packaging with other SLT modules and the additional design flexibility his application may require. The ESD-1A SLT diodes can be used for clamps and AND extending.

Schematic



Terminal Configuration



NOTE – 16 PIN MODULE

Maximum Ratings

Maximum current = 5.0 milliamps
Breakdown Voltage = 13 Volts

ESD-1A Module Functional Tests

INDIVIDUAL DEVICE PARAMETER TESTS						
TESTS	COM-PONENTS	TESTS CONDITIONS	T °C	LIMITS MIN	LIMITS MAX	UNITS
Q_S	$D_1 - D_8$	I_F = 3.0ma See Fig. 1	25		23	PC
FWD RECOVERY PEAK AMPLITUDE	$D_1 - D_8$	I_F = 2.0ma See Fig. 2	25		0.85	V
V_F	$D_1 - D_8$	I_F = 0.1ma	25	.51		V
V_F	$D_1 - D_8$	I_F = 0.5ma	25	.58		V
V_F	$D_1 - D_8$	I_F = 1.0ma	25	.61		V
V_F	$D_1 - D_8$	I_F = 3.0ma	25		.84	V
V_F	$D_1 - D_8$	I_F = 5.0ma	25		.87	V
BV_R	$D_1 - D_8$	I_R = 10 μa	25	13		V
I_R	$D_1 - D_8$	V_R = 12V	75		0.5	μa
DIODE CAPACITANCE	$D_1 - D_8$	OV BIAS, f = 1 ± 0.5mhz AC SIGNAL ≤ 50mv P-P	25		3.5	pf

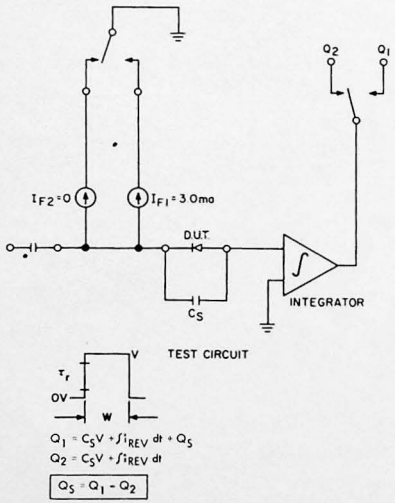


FIGURE 1

Store Charge Test

V-PULSE AMPLITUDE: 5V ± 25%
W-PULSE WIDTH: - > 50ns
RISE TIME: 1% - 50% < 0.5ns
10%-90% < 0.4ns
SOURCE IMPEDANCE < 10 OHMS
I_{F1} -FORWARD CURRENT = 3.0ma ± 0.3%
IF2 -FORWARD CURRENT = 0ma
C_S - SHUNT CAPACITY < 50 pf
INTEGRATOR RESPONSE ≤ 1ns
Q_1 -CHARGE WHEN D.U.T. IS FORWARD BIASED WITH I_{F1} = 3.0ma
Q_2 -CHARGE WHEN D.U.T. IS FORWARD BIASED WITH I_{F2} = 0ma
Q_S - STORED CHARGE
I_{REV} -DIODE LEAKAGE CURRENT

Forward Recovery

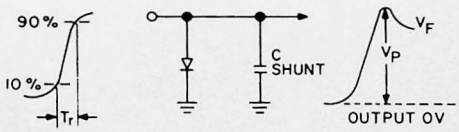


FIGURE 2

Notes

For this test the diode shunt capactiy (incl Probe) shall be 10.5 ± pf with a 50 Ω HF Resistor in place of the Diode, the rise time, tr, of the input voltage wave form shall be ≤ 2 ns, the operating frequency ≤50KH_Z,pulse width ≤ 50ns, Bandwidth of detector ≥ 750MH_Z.
Turn on is from Vf = 0.