TEST REPORT

ON

7 TO 10 GHz

SINGLE POLE SINGLE THROW

ABSORPTIVE / NON-REFLECTIVE SWITCH MODULE

AMC MODEL No:

SWN-2183-1AT

OPTION V+19, V-19, 710, 103-5mV

Serial Numbers: 1MS908272 THRU 1MS908279

DESIGNED BY
Dr. A. Gorwara

TESTED BY
R. Butler

REPORTED BY
E. Elder

August 9, 2004

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ISO9001 : 1994 CERTIFIED

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T13-EJE-SW-0804

SINGLE POLE SINGLE THROW, ABSORPTIVE/ NON-REFLECTIVE SWITCH MODULE AMC MODEL No: SWN-2183-1AT OPTIONS V+19, V-19, 710, 103-5mV

FEATURES:

- 2.0 TO 10.0 GHz FREQUENCY RANGE
- 5.0 dB LOW INSERTION LOSS
- 80 dB HIGH ISOLATION
- 5 mV LOW VIDEO TRANSIENTS
- REFLECTIVE / NON-ABSORPTIVE

TYPICAL SPST SWITCH

SPECIFICATIONS:

FREQUENCY	:	7 GHz TO 10 GHz
INSERTION LOSS	:	3.5 dB MAXIUMU, 3.0 dB TYPICAL
ISOLATION	:	80 dB MINIMUM
VSWR	:	IN/OUT, OUT/OFF: 2.0:1
SPEED	:	DELAY ON: 50 nS MAXIMUM
	:	DELAY OFF: 50 nS MAXIMUM
POWER SUPPLY	:	+19 V @ 100 mA MAXIMUM
	:	-19 V @ 50 mA MAXIUMUM
CONTROL	:	TTL LOGIC "0"=ON, "1"=OFF
VIDEO TRANSIENTS	:	5 mV PEAK TO PEAK @ 20 MHz BANDWIDTH

ENVIRONMENTAL RATINGS (STANDARD):

TEMPERATURE	:	-65^{O}C TO +110^{O}C OPERATING
	:	-65^{O}C TO +125^{O}C NON-OPERATING
HUMIDITY	:	MIL-STD-202F, METHOD 103B
SHOCK	:	MIL-STD-202F, METHOD 213B
VIBRATION	:	MIL-STD-202F, METHOD 204D
ALTITUDE	:	MIL-STD-202F, METHOD 105C
TEMPERATURE CYCLE	:	MIL-STD-202F, METHOD 107D

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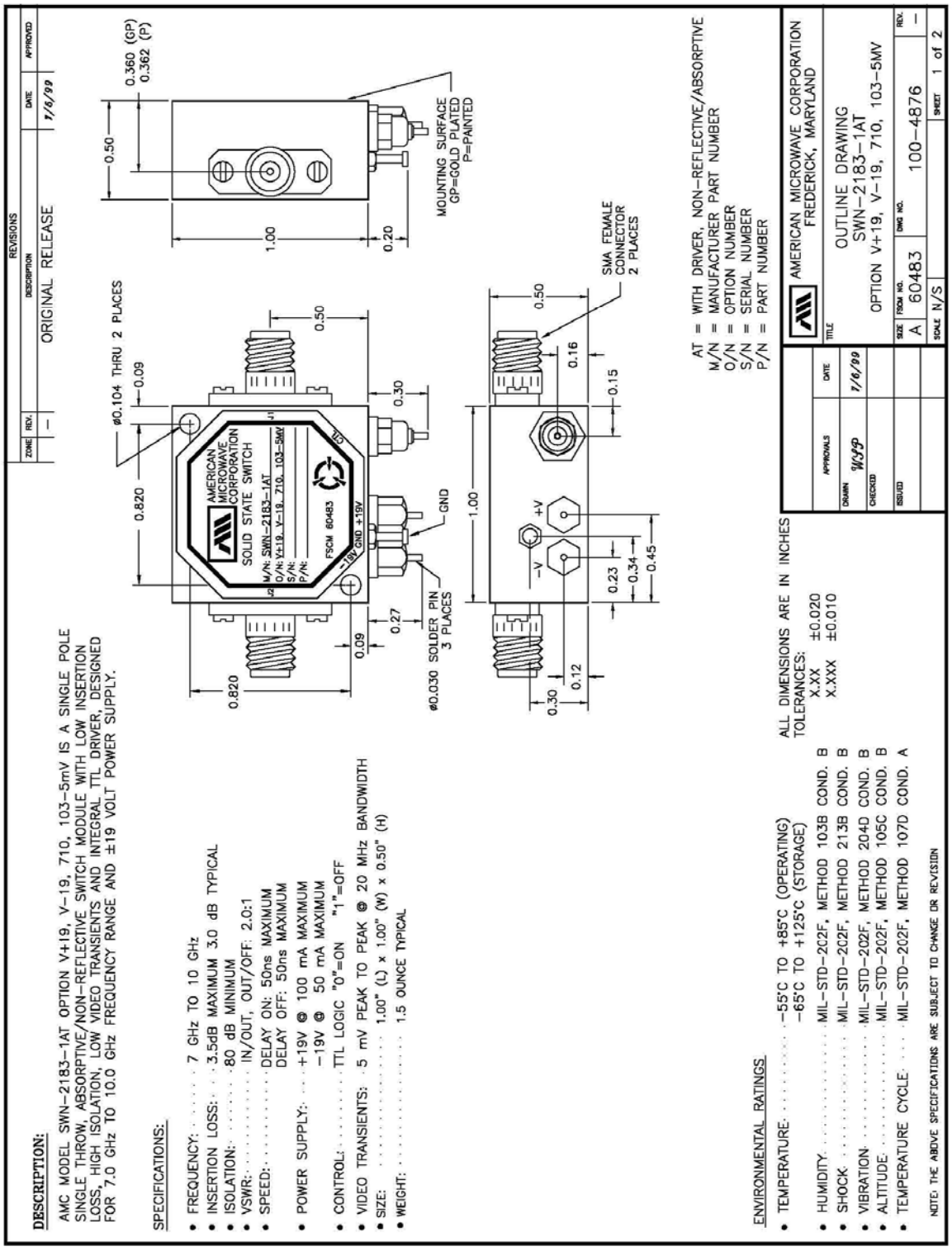
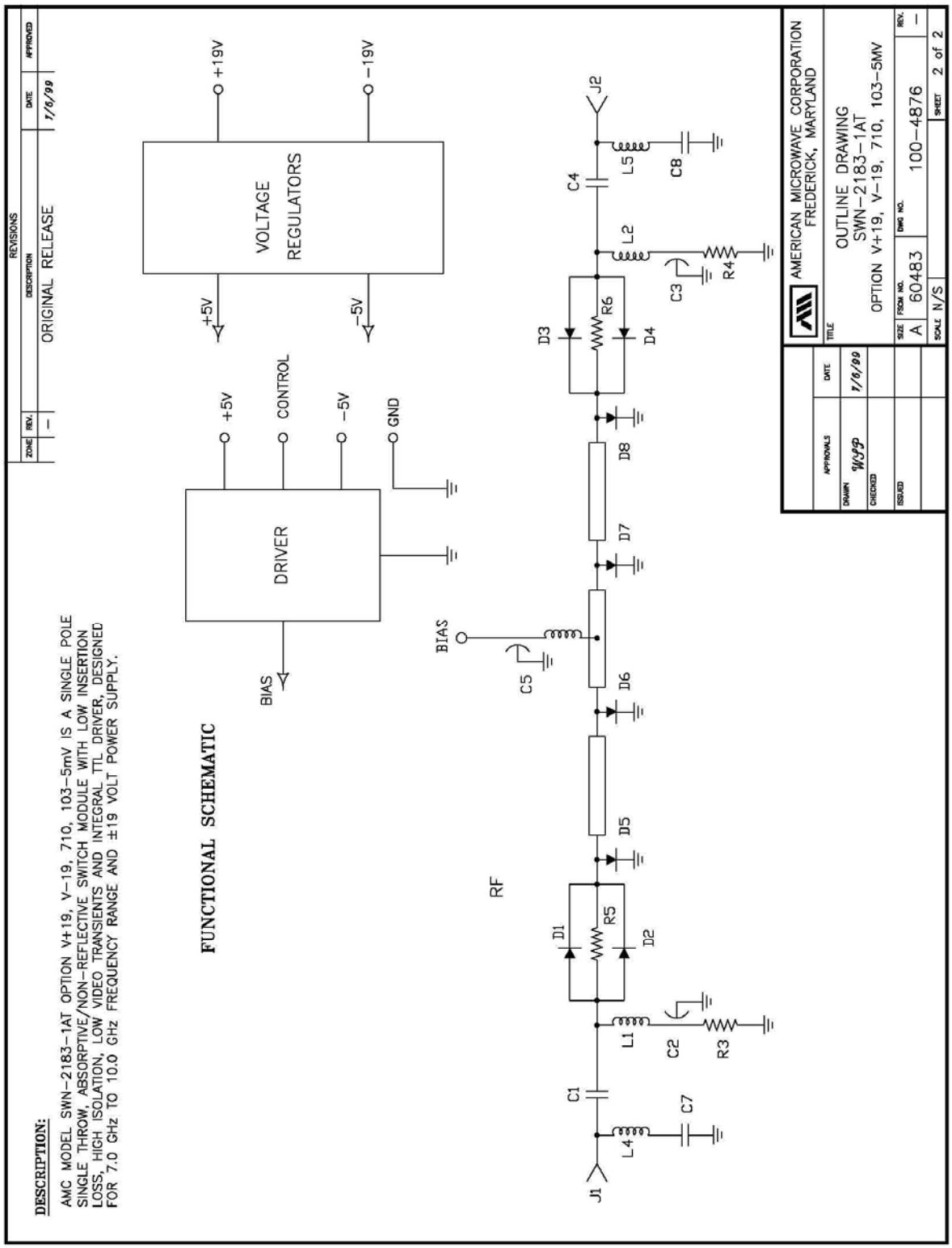
PRODUCT FEATURE



FUNCTIONAL SCHEMATIC



T13-EJE-SW-0804

FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

SWN-2183-1AT

Options V+19, V-19, 710, 103-5mV

Serial Numbers:

1MS908272 THRU 1MS908279

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FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908272

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908272
CURRENT DRAW: +19 VDC @ 65 mA; -19 VDC @ 50 mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5
FREQUENCY RANGE: 7GHz TO 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.56 dB	13.02 dB	1.58 : 1	14.29 dB	1.48 : 1	13.92 dB	1.50 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	42 ns	—	20 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350B/8757A HP

TEST: E #30

QA/QC:

DATED: AUG 18 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908273

ORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

USTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908273
URRENT DRAW: +17VDC @ 65 mA; -19VDC @ 50mA

TECHNICIAN: R Butler
OPTION: V+19, V-19, 710, 103.5m
FREQUENCY RANGE: 7GHz TO 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.83 dB	13.34 dB	1.55 : 1	15.60 dB	1.40 : 1	14.17 dB	1.49 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	42 ns	—	20 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350B/8757A HP

TEST 03 E #30

QA/QC: RM

AUG 1 0 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908274

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908274
CURRENT DRAW: +19VDC @ 65 mA; -19VDC @ 50mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5m
FREQUENCY RANGE: 7GHz TO 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.64 dB	12.08 dB	1.66 : 1	12.67 dB	1.61 : 1	14.89 dB	1.44 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	40 ns	—	20 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350 B/8757A HP

TEST: E#30
QA/QC: Q3 PM
AUG 18 1999

T13-EJE-SW-0804

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908275

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908275
CURRENT DRAW: +19VDC @65 mA; -19VDC @50mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5m
FREQUENCY RANGE: 7GHz to 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.86 dB	14.74 dB	1.45 : 1	15.51 dB	1.40 : 1	18.19 dB	1.28 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	45 ns	—	22 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350B/8757A HP

TEST: E #30

QA/QC: PA

AUG 18 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908276

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908276
CURRENT DRAW: +19 VDC @ 65 mA; -19 VDC @ 50 mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5m
FREQUENCY RANGE: 7GHz TO 10 GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.96 dB	13.65 dB	1.52 : 1	16.19 dB	1.37 : 1	16.13 dB	1.37 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	40 ns	—	20 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350 B/8757A HP

TEST: E #30
QA/QC: RS
DATED: AUG 18 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908277

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908277
CURRENT DRAW: +19 VDC @ 65 mA; -19 VDC @ 50 mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5m
FREQUENCY RANGE: 7GHz TO 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.89 dB	13.62 dB	1.53 : 1	14.86 dB	1.44 : 1	13.49 dB	1.54 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	412 ns	—	20 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350 B/8757A HP

TEST: Q3 E #30
QA/QC: PJ
DATED: AUG 18 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908278

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-17-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrup Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908278
CURRENT DRAW: +19 VDC @ 65 mA; -19 VDC @ 50 mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103,5m
FREQUENCY RANGE: 7GHz TO 10GHz
SPECIFICATIONS:

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.57 dB	12.38 dB	1.63 : 1	14.12 dB	1.49 : 1	16.10 dB	1.37 : 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	42 ns	—	22 ns	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8350 B/8757A HP

TEST: E #30

QA/QC: PZ

DATED: AUG 18 1999

FINAL TEST DATA

AMC MODEL NO: SWN-2183-1AT OPTIONS V+19, V-19. 710, 103-5mV, SERIAL NUMBER: 1MS908279

FORM: SW-DATA 27/0199

AMERICAN MICROWAVE CORPORATION

DATE: 8-16-99

FINAL TEST DATA
ON
MICROWAVE SWITCH

CUSTOMER: Northrop Grumman
JOB NO: 906110E
MODEL NO: SWN-2183-1AT
SERIAL NO: 1MS908279
CURRENT DRAW: +19VDC @ 70mA; -19VDC @ 50mA

TECHNICIAN: R. Butler
OPTION: V+19, V-19, 710, 103-5mV
FREQUENCY RANGE: 7.0 - 10.0 GHz
SPECIFICATIONS: MIL-STD 454

MAXIMUM INSERTION LOSS	RETURN LOSS					
	MIN. INPUT dB	INPUT VSWR	MIN. OUTPUT ON dB	OUTPUT ON VSWR	MIN. OUTPUT OFF dB	OUTPUT OFF VSWR
J1-J2 1.23 dB	14.99 dB (ON)	1.43 : 1	16.47 dB	1.35 : 1	16.48 dB	1.35 : 1
dB	15.99 dB (OFF)	1.37 : 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1
dB	dB	: 1	dB	: 1	dB	: 1

MINIMUM ISOLATION	SWITCHING SPEED			
	DELAY ON	RISE TIME	DELAY OFF	FALL TIME
J1-J2 > 80 dB	52 nS	—	23 nS	—
dB				
dB				
dB				
dB				
dB				
dB				
dB				

NOTE: Any additional test data on back

TESTED ON: 8757A/8350B (HP)

TEST [signature] E #29

QA/QC [signature]

DATE AUG 18 1999