



TEST REPORT

ON

0.5 TO 18 GHz

SINGLE POLE SINGLE THROW

REFLECTIVE SWITCH MODULE

AMC MODEL No:

SWN-AGRA-1DR-TTL-GAK1-LVT

OPTION 500M18, B02

Serial Numbers: 1MS405084 THRU 1MS405087

DESIGNED

BY

R. Afable

TESTED

BY

J. McBride

REPORTED

BY

E. Elder

November 11, 2004

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ISO9001 : 2000 CERTIFIED

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**SINGLE POLE SINGLE THROW
REFLECTIVE SWITCH MODULE
AMC MODEL No:
SWN-AGRA-1DR-TTL-GAK1-LVT OPT 500M18, B02**

FEATURES:

- **0.5 TO 18 GHz FREQUENCY RANGE**
- **LOW INSERTION LOSS**
- **HIGH ISOLATION**
- **INTEGRAL TTL DRIVER**
- **DESIGNED FOR LOW VIDEO TRANSIENTS**

SPECIFICATIONS:

- **FREQUENCY** : 0.5 TO 18 GHz
- **INSERTION LOSS** : 2.5 dB MAXIMUM
- **ISOLATION** : 70 dB MINIMUM
- **VSWR** : 2.0:1
- **SPEED** : RISE: 5 ns MAXIMUM
: FALL: 5 ns MAXIMUM
: DELAY ON: 12 ns TYPICAL
: DELAY OFF: 12 ns TYPICAL
- **POWER INPUT** : +15 dBm CW MAXIMUM @ 2 GHz TO 18 GHz
- **RF CONNECTORS** : SMA FEMALE
- **DC POWER SUPPLY** : +5 VDC @ 60 mA MAXIMUM
: -15 VDC @ 60 mA MAXIMUM
- **CONTROL** : TTL LOGIC "1"=ON, "0"=OFF
- **WEIGHT** : 1.5 OUNCES TYPICAL
- **SIZE** : 1.00 (L) x 1.00 (W) x 0.50 (H)

PRODUCT FEATURE

ZONE	REV.	DESCRIPTION	DATE	APPROVED
	1	ORIGINAL RELEASE, JOB# 402026PE-2	4/1/04	

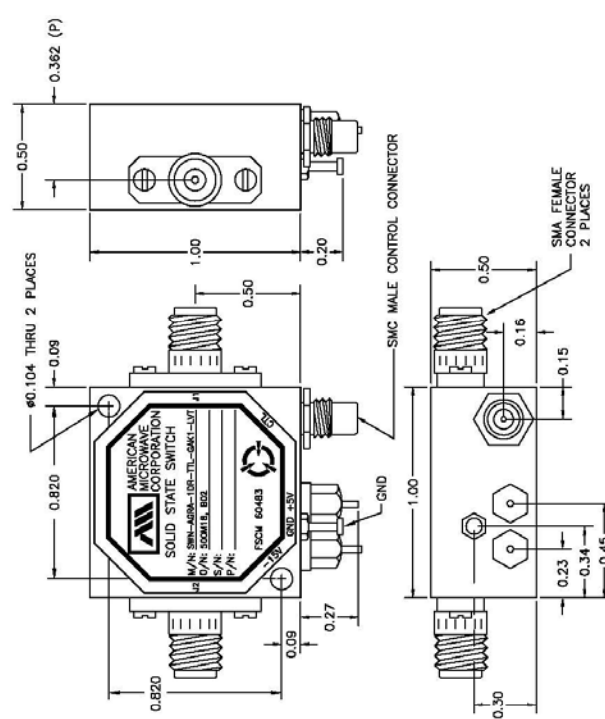
DESCRIPTION:
 AMC MODEL SWN-AGRA-1DR-TTL-GAK1-LVT OPT. 500M18, B02 IS A SINGLE POLE SINGLE THROW, REFLECTIVE SWITCH MODULE WITH VERY LOW INSERTION LOSS, HIGH ISOLATION AND WITH INTEGRAL TTL DRIVER, DESIGNED FOR LOW VIDEO TRANSIENTS AND DESIGNED FOR THE 0.5 GHz TO 18 GHz BANDWIDTH.

SPECIFICATIONS:

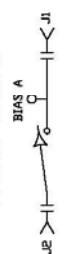
- FREQUENCY: 0.5 GHz TO 18 GHz
- INSERTION LOSS: 2.5 dB MAX
- ISOLATION: 70 dB MIN
- VSWR: 2.0:1
- SPEED: RISE: 5 nS MAXIMUM
FALL: 5 nS MAXIMUM
DELAY ON: 12 nS MAXIMUM
DELAY OFF: 12 nS MAXIMUM
- POWER INPUT: +15 dBm CW MAXIMUM @ 2 GHz TO 18 GHz
- RF CONNECTORS: SMA FEMALE
- DC POWER SUPPLY: -15VDC @ 60 mA MAXIMUM
- CONTROL: TTL LOGIC "1"=ON "0"=OFF
- WEIGHT: 1.5 OUNCES TYPICAL
- SIZE: 1.00 (L) X 1.00 (W) X 0.50 (H)

OPTIONS:

- 500M18 OPTIMIZED FOR 0.5 TO 18 GHz
- B02 -15 V POWER SUPPLY



BLOCK DIAGRAM



ENVIRONMENTAL RATINGS:

- TEMPERATURE: -10°C TO +55°C (OPERATING)
-40°C TO +71°C (STORAGE)
- HUMIDITY: 85% OVER TEMPERATURE
- SHOCK: MIL-STD-202F, METHOD 213B COND. B
- VIBRATION: MIL-STD-202F, METHOD 204D COND. B
- ALTITUDE: MIL-STD-202F, METHOD 105C COND. B
- TEMPERATURE CYCLE: MIL-STD-202F, METHOD 107D COND. A

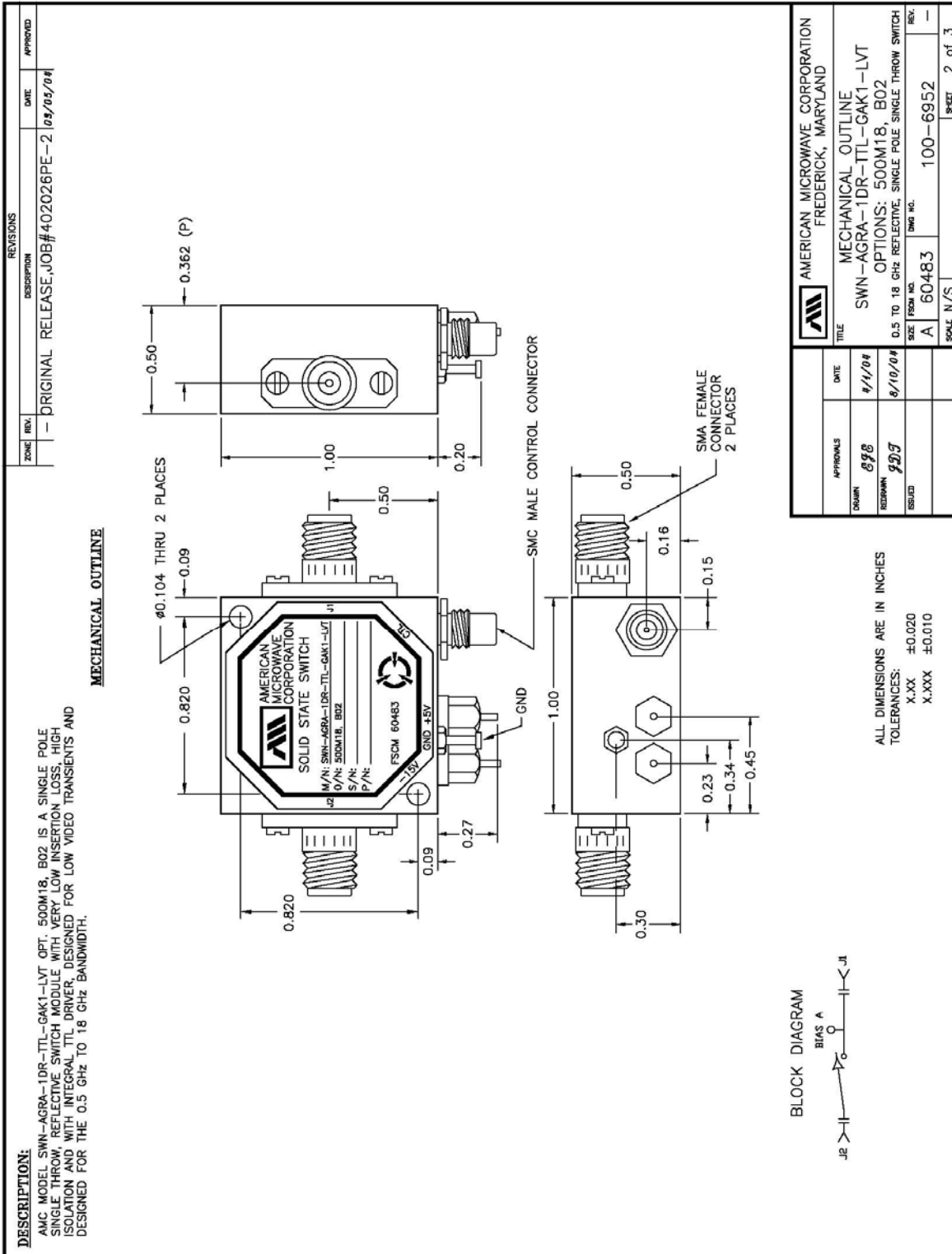
NOTE: SPECIFICATIONS WILL VARY OVER OPERATING TEMPERATURE.
 NOTE: THE ABOVE SPECIFICATIONS ARE SUBJECT TO CHANGE OR REVISION

ALL DIMENSIONS ARE IN INCHES
 TOLERANCES:
 X.XX ±0.020
 X.XXX ±0.010

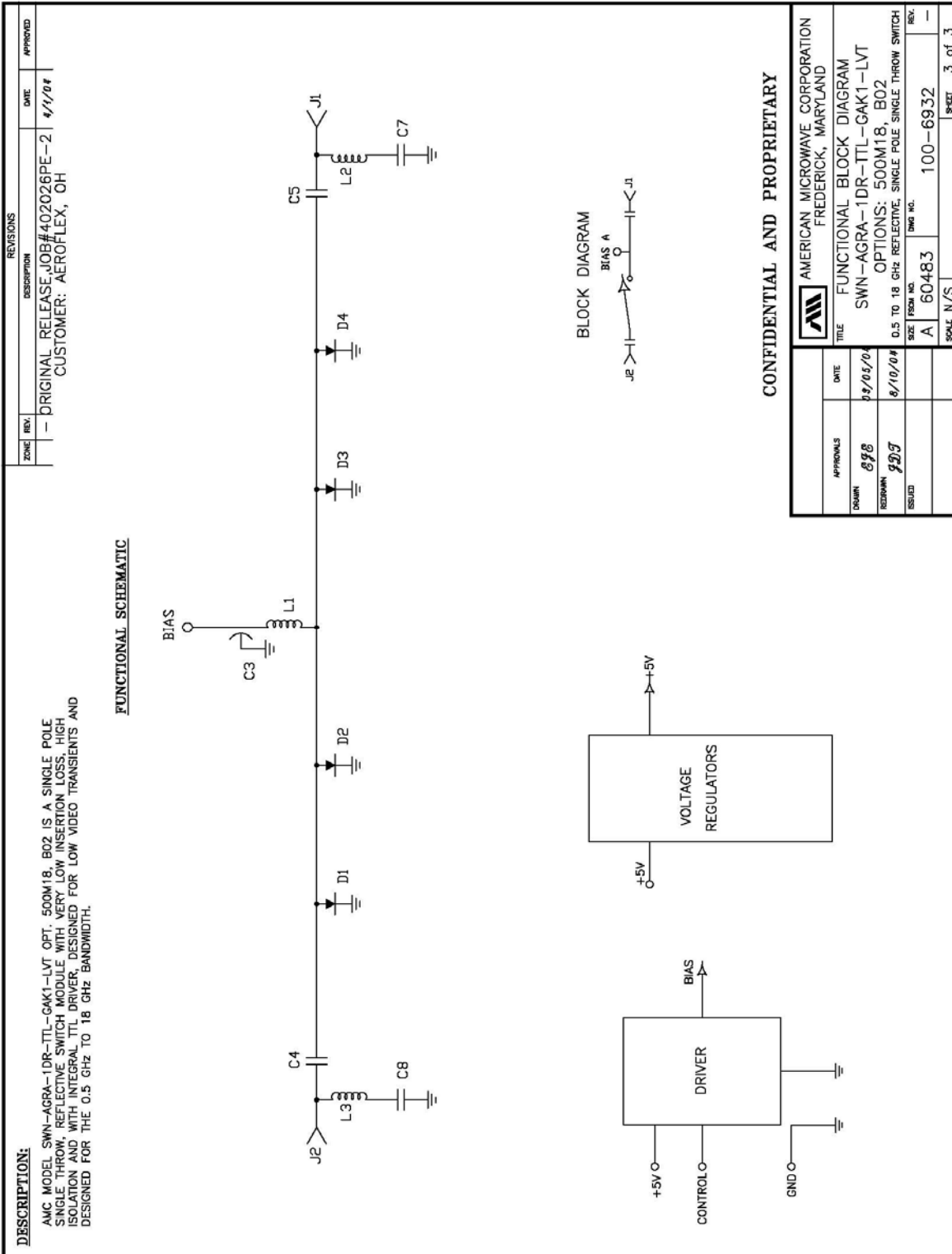
APPROVALS	DATE	TITLE	REV.	SHEET
DESIGN	4/1/04	PRODUCT FEATURE		1 of 3
DESIGN	8/10/04	SWN-AGRA-1DR-TTL-GAK1-LVT		
DESIGN	8/10/04	OPTIONS: 500M18, B02		
DESIGN		0.5 TO 18 GHz REFLECTIVE, SINGLE POLE SINGLE THROW SWITCH		
		SIZE FROM NO.	100-6952	
		REV.		
		SCALE	N/S	
		DWG NO.	60483	



OUTLINE DRAWING



FUNCTIONAL SCHEMATIC



FINAL TEST DATA

FINAL TEST DATA SHEETS

FOR

AMC MODEL NUMBER

**SWN-AGRA-1DR-TTL-GAK1-LVT
OPTION 500M18, B02**

Serial Numbers:

1MS405084 THRU 1MS405087



FINAL TEST DATA

AMC MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT OPTION 500M18, B02
 SERIAL NUMBER: 1MS405084

FORM: 497-SW-DTA
 DATE: 7/7/04



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FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: AEROFLEX, OH
 JOB NO: 402026PE-2
 MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT
 SERIAL NO: 1MS405084
 CURRENT DRAW: + 5 VDC @ 60 mA; - 15 VDC @ 60 mA

TECHNICIAN: Justin McBride *JLM 7/7/04*
 OPTION NO: 500M18, B02
 SPECIFICATION:
 FREQUENCY RANGE: 0.5 - 18.0 GHz

INSERTION LOSS (WORST CASE)		RETURN LOSS (WORST CASE)					
		INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J1-J2	2.43 dB @ 0.5-18.0 GHz	12.16 dB	1.65: 1	11.48 dB	1.73: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	41.40 dB @ 0.5-2.0 GHz	10 nS		4 nS	12 nS	5 nS	
J1-J2	80.00 dB @ 2.0-18.0 GHz	10 nS		4 nS	12 nS	5 nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	
	dB @ GHz	nS		nS	nS	nS	

NOTE: Any additional test data on back

TESTED ON: WILTRON 37347A
 QA/QC APPROVAL: *M. Neumann for KJ* DATED: *07/07/04*

FINAL TEST DATA

AMC MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT OPTION 500M18, B02
 SERIAL NUMBER: 1MS405085

FORM: 497-SW-DTA
 DATE: _____



AMERICAN MICROWAVE CORPORATION
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 E-MAIL: SALES@AMERICANMICROWAVECORP.COM

FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: AEROFLEX, OH
 JOB NO: 402026PE-2
 MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT
 SERIAL NO: 1MS405085

TECHNICIAN: Justin McBride *JCM 7/14/04*
 OPTION NO: 500M18, B02
 SPECIFICATION:
 FREQUENCY RANGE: 0.5 - 18.0 GHz

CURRENT DRAW: + 5 VDC @ 60 mA; - 15 VDC @ 60 mA

INSERTION LOSS (WORST CASE)		RETURN LOSS (WORST CASE)					
		INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J1-J2	2.47 dB @ 0.5-18.0 GHz	10.63 dB	1.83: 1	9.97 dB	1.93: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	43.64 dB @ 0.5-2.0 GHz	8 nS	4 nS	11 nS	4 nS		
J1-J2	76.00 dB @ 2.0-18.0 GHz	8 nS	4 nS	11 nS	4 nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		

NOTE: Any additional test data on back

TESTED ON: 7/6/04

QA/QC APPROVAL: *McNair asin for KV* DATED: 07/10/04



FINAL TEST DATA

AMC MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT OPTION 500M18, B02
 SERIAL NUMBER: 1MS405086

FORM: 497-SW-DTA
 DATE: _____



AMERICAN MICROWAVE CORPORATION
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FINAL TEST DATA
 ON
 MICROWAVE SWITCH

CUSTOMER: AEROFLEX, OH
 JOB NO: 402026PE-2
 MODEL NO: SWN-AGRA-1DR-TTL-GAK1-LVT
 SERIAL NO: 1MS405086
 CURRENT DRAW: + 5 VDC @ 60 mA; - 15 VDC @ 60 mA

TECHNICIAN: Justin McBride *JKM 7/6/04*
 OPTION NO: 500M18, B02
 SPECIFICATION:
 FREQUENCY RANGE: 0.5 - 18.0 GHz

INSERTION LOSS (WORST CASE)		RETURN LOSS (WORST CASE)					
		INPUT dB	INPUT VSWR	OUTPUT ON db	OUTPUT ON VSWR	OUTPUT OFF db	OUTPUT OFF VSWR
J1-J2	2.48 dB @ 0.5-18.0 GHz	11.03 dB	1.78: 1	11.25 dB	1.75: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
	dB @ GHz	dB 1.	: 1	dB 1.	: 1	dB 1.	: 1
ISOLATION		SWITCHING SPEED					
		DELAY ON	RISE TIME	DELAY OFF	FALLTIME		
J1-J2	48.18 dB @ 0.5-2.0 GHz	9 nS	4 nS	10 nS	4 nS		
J1-J2	78.89 dB @ 2.0-18.0 GHz	9 nS	4 nS	10 nS	4 nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		
	dB @ GHz	nS	nS	nS	nS		

NOTE: Any additional test data on back

TESTED ON: 7/6/04

QA/QC APPROVAL: *M. N. S. for RV* DATED: 07/07/04

