Fairview Microwave
an INFINITe brand

SP6T Electromechanical Relay Normally Open Switch, DC to 26.5 GHz, 2M Lifecycles, 20W, 12V, SMA, Solder Pins

The FMSW6486 is a Single Pole Six Throw (SP6T) electromechanical relay switch that operates across a wide frequency range from DC to 26.5 GHz and can handle up to 20W of average power in a break before make condition. The 50 Ohm design is rated for 2 million lifecycles and features a Normally Open Actuator where the selected position remains active with constant voltage, all positions are open when voltage is removed. Impressive typical performance includes 0.4 dB insertion loss and isolation greater than 70 dB. This switch requires +12Vdc bias voltage and operates over a temperature range of -25°C to +65°C. The rugged and compact package assembly supports SMA female connectors and solder terminal pins for DC control. And for highly reliable operation, the model is guaranteed to meet MIL-STD-202 environmental test conditions for shock and random vibration.

Electrical Specifications (TA = +25°C, DC Voltage = +12 Vdc)

Switch Type   SP6T
Actuator Type   Normally Open

Description	Min	Typ	Max	Units
Frequency Range	DC		26.5	GHz
Operating Voltage		+12		Volts
Actuating Current @ +12 Volts			250	mA
VSWR		1.2:1	1.8:1	
Insertion Loss		0.4	0.8	dB
Isolation	50	70		dB
Input Power (CW) (at 26.5 GHz)			20	Watts

Performance by Frequency

Description	F1	F2	F3	F4	F5	Units
Frequency Range	DC - 6	6 - 12	12 - 18	18 - 26.5		GHz
VSWR, Max	1.25:1	1.4:1	1.5:1	1.8:1		
Insertion Loss, Max	0.2	0.4	0.5	0.8		dB
Isolation, Min	70	60	60	50		dB

Mechanical Specifications
Size
Length   1.75 in [44.45 mm]
Width/Diameter   1.75 in [44.45 mm]
Height   1.75 in [44.45 mm]
Weight   0.4 lbs [181.44 g]

Connectors
RF Connector Type   SMA Female
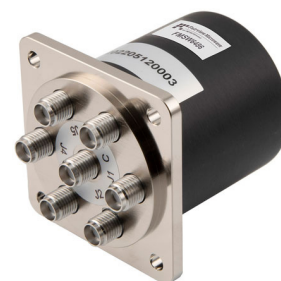
Features:
- Transfer Electromechanical Relay Switch
- DC to 26.5 GHz Frequency Range
- Normally Open Actuator
- 2M Lifecycle Rating
- Insertion Loss 0.4 dB typ
- Isolation > 70 dB typ
- VSWR as low as 1.25:1 max
- +12 Volt DC Bias
- Solder Terminal Pins for DC Comand Control
- SMA Female Connectors
- -25°C to +65°C Operating Temperature
- Up to 20 Watt average Power Handling
- 50 Ohm Design
- Hot Switching Capability - Consult Factory
- S-Parameter Data available upon request
- Rugged Design meets Mil-STD-202 Test Conditions

Applications:
- Aerospace & Defense
- Test & Measurement
- Microwave Radio Systems
- Military & Commercial Communication Systems
- Research & Development
- SATCOM
- Wireless Communications
- Enterprise
- IoT

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www.fairviewmicrowave.com
sales@fairviewmicrowave.com

Environmental Specifications

Temperature

Operating Range	-25 to +65 deg C
Storage Range	-55 to +100 deg C

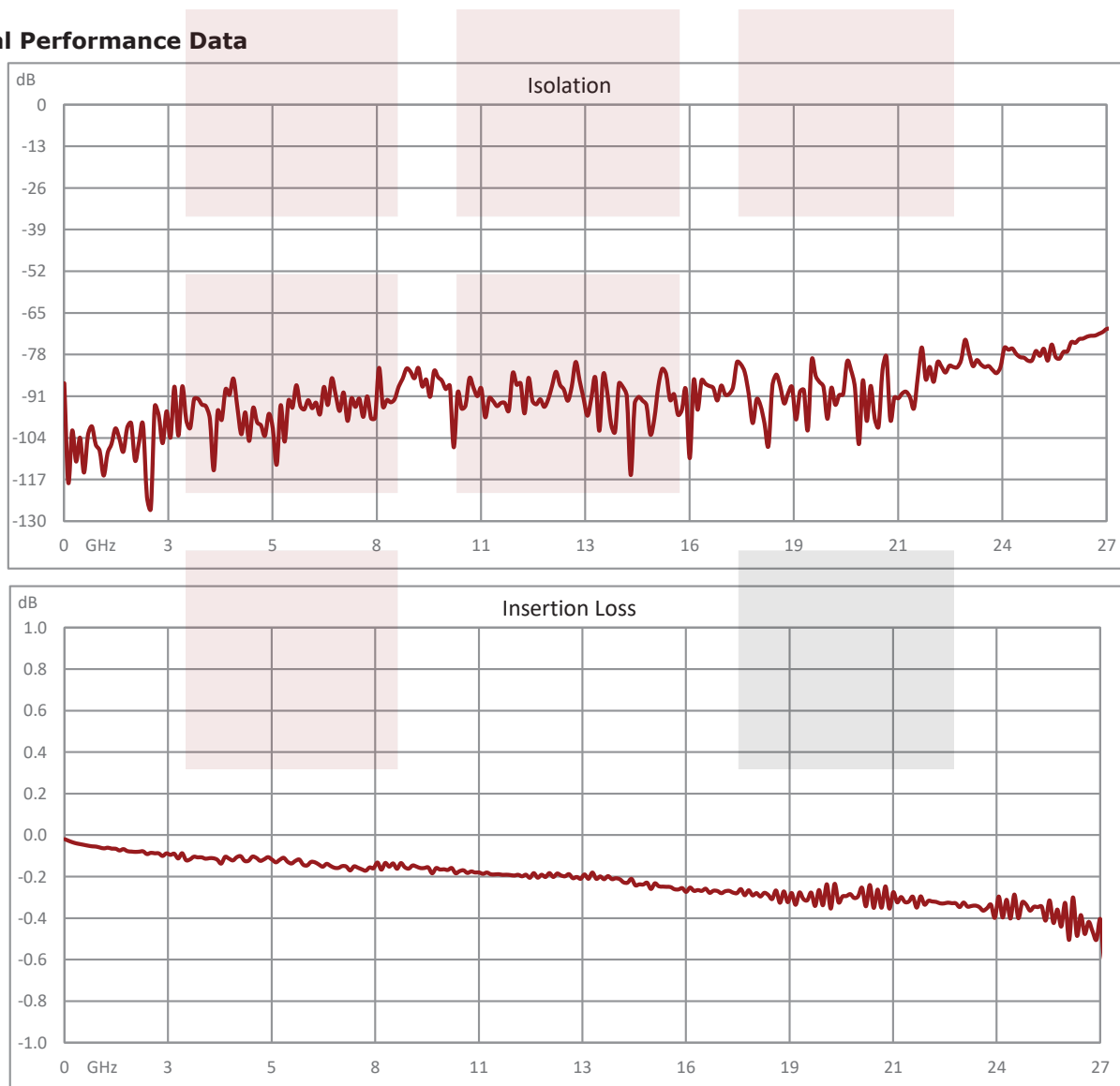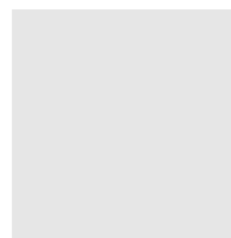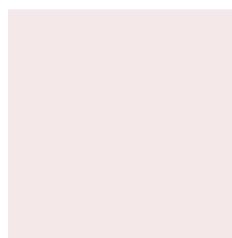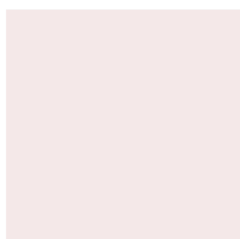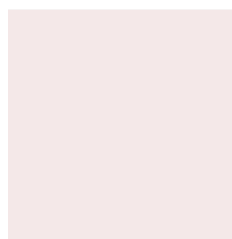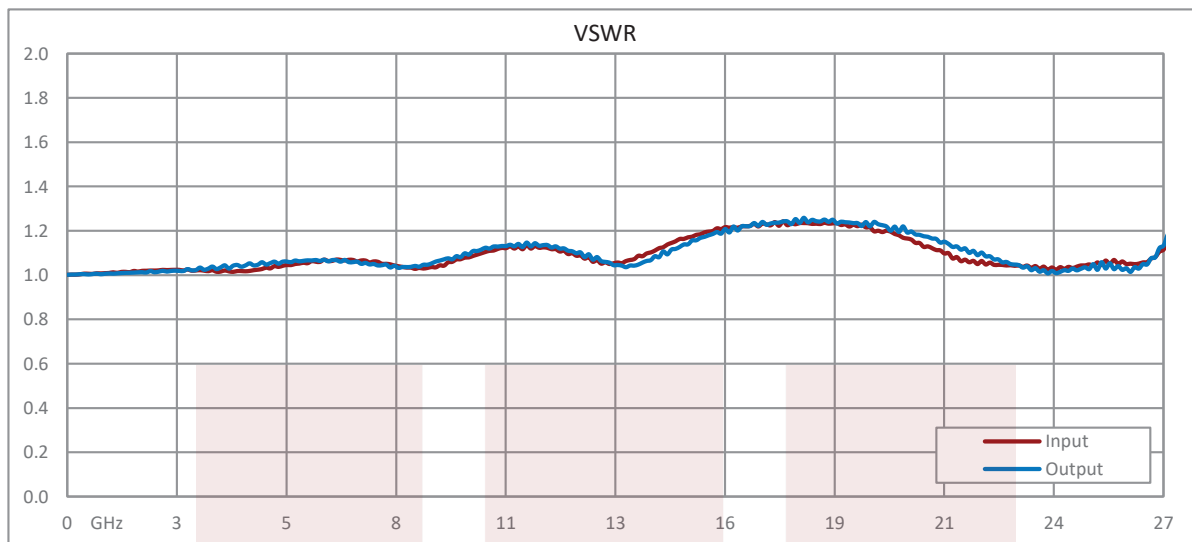|	
Shock	MIL-STD-202 Method 213, Condition D, 500G (non oper)
Vibration	MIL-STD-202 Method 204, Condition D, 10G RMS (non oper)

Compliance Certifications (see product page for current document)
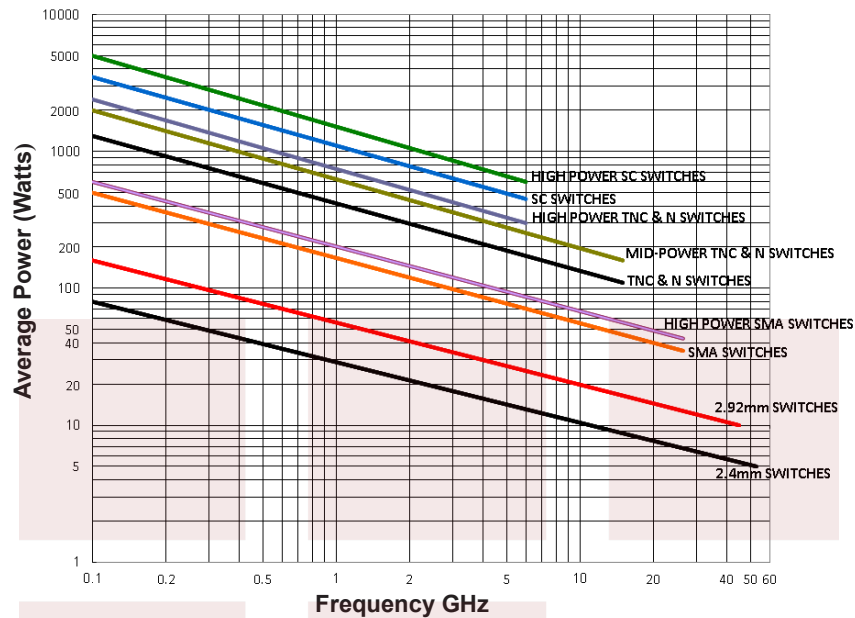
Plotted and Other Data

Notes:

Typical Performance Data

VSWR

Power Handling vs. Frequency

Axis label: Average Power (Watts) vs Frequency GHz

Curve labels:
- HIGH POWER SC SWITCHES
- SC SWITCHES
- HIGH POWER TNC & N SWITCHES
- MID-POWER TNC & N SWITCHES
- TNC & N SWITCHES
- HIGH POWER SMA SWITCHES
- SMA SWITCHES
- 2.92mm SWITCHES
- 2.4mm SWITCHES

Power Handling De-rating vs. Load VSWR
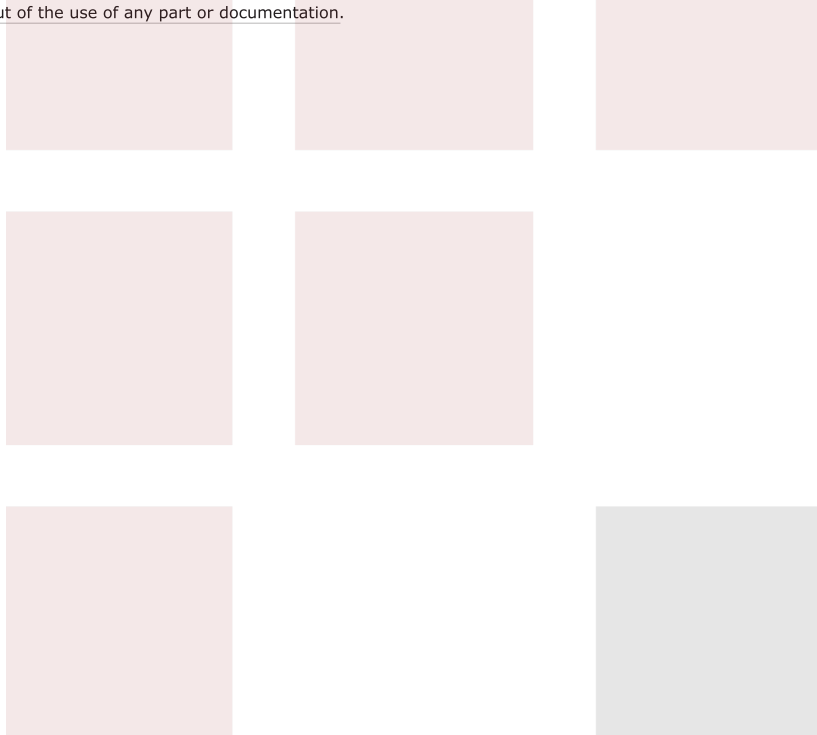

Axis label: Load VSWR

Power Handling Chart and Derating Curves based
on the following Test and Environmental Conditions:
 Ambient temperature: 20-25°C
 Altitude: Sea Level to 1,000 feet
 Relative Humidity: 50-55%
 Load VSWR: ≤ 1.20:1
 Operation: Cold Switching
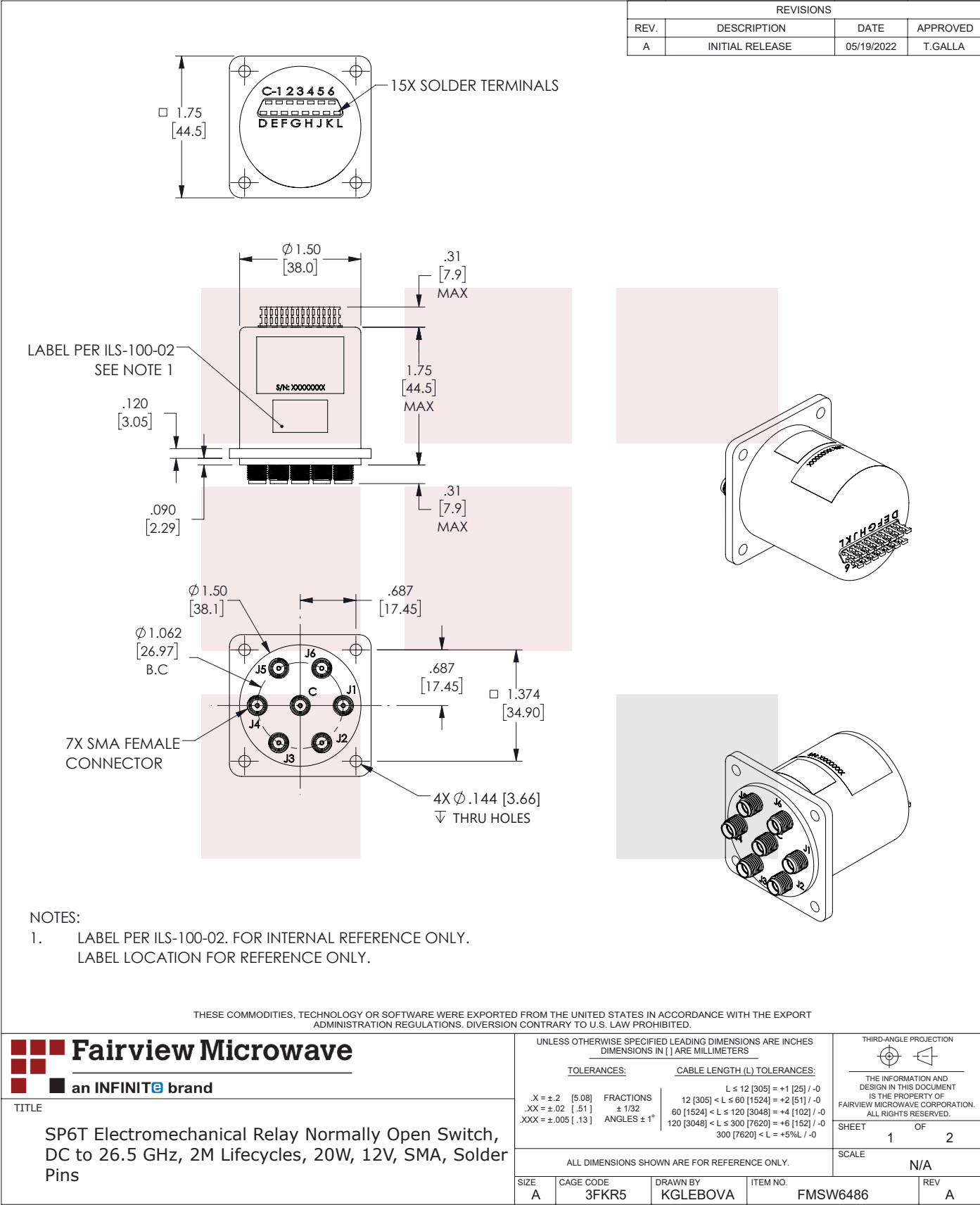
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SP6T Electromechanical Relay Normally Open Switch, DC to 26.5 GHz, 2M Lifecycles, 20W, 12V, SMA, Solder Pins from Fairview Microwave is in-stock and available to ship same-day. All of our RF/microwave products are available off-the-shelf from our ISO 9001:2008 certified facilities in Lewisville, Texas. Fairview Microwave is RF on-demand.
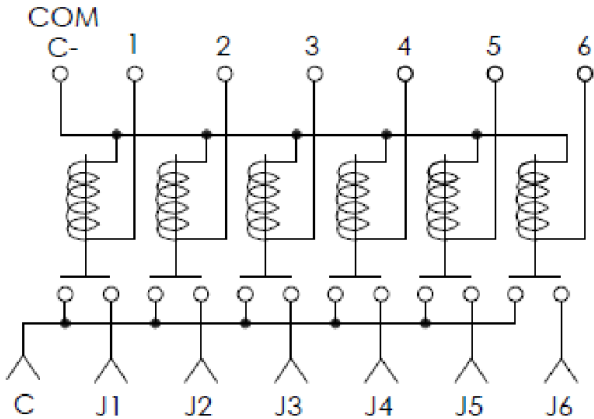
For additional information on this product, please click the following link: SP6T Electromechanical Relay Normally Open Switch, DC to 26.5 GHz, 2M Lifecycles, 20W, 12V, SMA, Solder Pins FMSW6486

URL: https://www.fairviewmicrowave.com/sp6t-normally-open-26.5-ghz-electro-mechanical-relay-switch-20w-12v-sma-fmsw6486-p.aspx

REVISIONS			
REV.	DESCRIPTION	DATE	APPROVED
A	INITIAL RELEASE	05/19/2022	T.GALLA

15X SOLDER TERMINALS

□ 1.75 [44.5]

C-123456
DEFGHJKL

Ø 1.50 [38.0]

.31 [7.9] MAX

LABEL PER ILS-100-02 SEE NOTE 1

S/N: XXXXXXXX

1.75 [44.5] MAX

.120 [3.05]

.090 [2.29]

.31 [7.9] MAX

Ø 1.50 [38.1]

.687 [17.45]

Ø 1.062 [26.97] B.C

.687 [17.45]

□ 1.374 [34.90]

J6
J5   J1
C
J4   J2
J3

7X SMA FEMALE CONNECTOR

4X Ø .144 [3.66] ⟱ THRU HOLES

NOTES:
1.   LABEL PER ILS-100-02. FOR INTERNAL REFERENCE ONLY.
     LABEL LOCATION FOR REFERENCE ONLY.

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TITLE

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UNLESS OTHERWISE SPECIFIED LEADING DIMENSIONS ARE INCHES
DIMENSIONS IN [ ] ARE MILLIMETERS

TOLERANCES:

.X = ±.2   [5.08]   FRACTIONS
.XX = ±.02 [.51] ± 1/32
.XXX = ±.005 [.13] ANGLES ± 1°

CABLE LENGTH (L) TOLERANCES:
L ≤ 12 [305] = +1 [25] / -0
12 [305] < L ≤ 60 [1524] = +2 [51] / -0
60 [1524] < L ≤ 120 [3048] = +4 [102] / -0
120 [3048] < L ≤ 300 [7620] = +6 [152] / -0
300 [7620] < L = +5%L / -0

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

THIRD-ANGLE PROJECTION

SHEET	OF
1	2

SCALE: N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	KGLEBOVA	FMSW6486	A

T-Rev.D

COM
C-   1   2   3   4   5   6

C   J1   J2   J3   J4   J5   J6

RF POSITION

SCHEMATIC

TRUTH TABLE/PIN ASSIGNMENT :
PIN ASSIGNMENT

TERMINALS / PIN ASSIGNMENT	RF PATH					
	J1	J2	J3	J4	J5	J6
1	ON	OFF	OFF	OFF	OFF	OFF
2	OFF	ON	OFF	OFF	OFF	OFF
3	OFF	OFF	ON	OFF	OFF	OFF
4	OFF	OFF	OFF	ON	OFF	OFF
5	OFF	OFF	OFF	OFF	ON	OFF
6	OFF	OFF	OFF	OFF	OFF	ON

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THIRD-ANGLE PROJECTION

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SHEET	OF
2	2

ALL DIMENSIONS SHOWN ARE FOR REFERENCE ONLY.

SCALE
N/A

SIZE	CAGE CODE	DRAWN BY	ITEM NO.	REV
A	3FKR5	KGLEBOVA	FMSW6486	A

T-Rev.D