

DowKey™

Microwave Switches

Company Profile

Dow-Key Microwave, a subsidiary of Dover Corporation and a leader in the design and fabrication of switching products, has supplied the aerospace, military and communication industry with state-of-the-art products to direct RF energy since 1945. To date, thousands of designs have been created and manufactured at its facility located in Ventura, California, USA. Dow-Key offers switching products to four major markets – Commercial, Military, Avionics, and Hi-Rel/Space. These products include individual coaxial, waveguide, board mount, and MEMS switches along with custom integrated assemblies and switch matrices.

Location

Dow-Key Microwave is located in Ventura, California approximately one hour north of the Los Angeles International Airport with ready access to the 101 Ventura Highway.

Capabilities and Facilities

Dow-Key constantly maintains and updates in-house capability in design, machining, processing, assembly, and test of existing and new products. The company operates in a new 40,000 square foot building containing administrative, quality, engineering, and manufacturing groups. In support of manufacturing functions, Dow-Key has a class 100 and a 100K clean room, machine shop, environmental test lab, CAD design center, and production test areas. Its test labs use the most current RF test equipment and place an emphasis on developing test automation utilizing the latest industry tools.

Engineering

With many years of combined switch experience, Dow-Key's engineering team is considered by many to be the switch industry's best in both design and manufacturing support. Innovative engineering solutions achieved through active participation in customer design efforts along with direct technical support help to insure program success. Please feel free to contact Dow-Key's technical staff for all of your design support needs.

Quality Management

Dow-Key Microwave has developed and implemented a quality management system to satisfy the requirements of its customers. This also results in the ability to streamline internal and external company processes, improve product reliability and reduce cost. Its quality system has been registered through the ISO accreditation councils of the RvA and ANSI-RAB QMS, assuring that Dow-Key's Quality system is compliant to the ISO 9001 standard.

General

At Dow-Key you are not limited to the catalog products on the pages that follow. Requests for modification of standard items and their specifications in order to meet specific customer needs are always welcome. Inquiries regarding custom integrated components or switch assemblies are also always appreciated.

New product information is constantly being added in the form of industry publication press releases and through the corporate website at www.dowkey.com. Please visit this site for general company information and standard product descriptions and specifications. Dow-Key Microwave, "*The Solutions Company*", is waiting to assist you with all of your switch requirements.

This catalog is intended to be used as a guide in selecting the proper type of switch product or switching function for a given application and is subject to change without notification at any time. Please refer to our website for catalog updates and corrections along with new product information.

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Ordering:

The information found in this catalog or on our Website, www.dowkey.com, should be sufficient for you to select a particular Dow-Key product. In those cases where additional information is required, call Dow-Key directly or our local Dow-Key Sales Representative who will provide you with price and delivery information.

When placing your order, please include the part number, product name, quantity, and shipping instructions. In the case of a non-standard product, a full description of desired features must accompany your order to avoid any error.

Send Orders to:

Dow-Key Microwave
4822 McGrath Street
Ventura, CA 93003 U.S.A.

Or send them in care of our Sales Representative in your area. A complete listing of our Representatives can be found on our Website www.dowkey.com.

Orders will be accepted by way of U.S. mail, telephone, Fax, or Email. Confirmation of orders on your standard Purchase Order is required.

Telephone: (805) 650-0260
Fax: (805) 650-1734
Email: ASKDK@DowKey.com

Domestic Terms:

Net 30 days, F.O.B. Dow-Key plant, Ventura, California, U.S.A. unless otherwise specified. Shipments made to firms are on a C.O.D. basis unless credit has been established or on receipt of advance payment. American Express, MasterCard and Visa are also accepted

Export Terms:

Unless other terms have been agreed upon in advance, export terms are either payment in advance of shipment or against a confirmed irrevocable letter of credit. All prices are F.O.B. Ventura, California, U.S.A.

Shipping:

Orders within the United States and Canada will be shipped via United Parcel Service Ground unless other instructions are received. Shipment to all other countries will be by customer direction.

Packaging:

All products shipped from Dow-Key Microwave, Ventura, California are packaged in accordance with best commercial practices unless otherwise specified in the contract or purchase order.

Delivery:

Most standard products are available from stock or within our typical manufacturing lead-time of 4 to 8 weeks after receipt of order.

Source Inspection:

Should Customer Source Inspection of product be required, a charge of \$250.00 per occurrence will apply.

Application and Technical Assistance:

Dow-Key provides a knowledgeable and experienced engineering staff to work closely with customers in product design and application development as well as minor modifications to existing standard products. This service is also available for the design of individual specialized switching components or complex switching systems.

Warranty:

Dow-Key Microwave Corporation warrants all switch products to be free of defects in material and workmanship for a period of one year after the date of initial shipment. The limit of liability under this warranty is to repair, replace or refund purchase price on any product or part thereof that is returned by the purchaser and proves to be defective after examination by Dow-Key. This warranty does not extend to any products mishandled, misused or subjected to abuse or neglect in storage, transportation or use. Repairs or alterations made without consent or knowledge of Dow-Key Microwave Corporation will invalidate this warranty. This warranty supercedes all others, either expressed or implied.

Return Material Authorization:

Please call Dow-Key to receive a Return Material Authorization (RMA) number prior to returning any item for service. Items returned to Dow-Key without a RMA number are subject to return without evaluation or any work being done. Dow Key will not accept COD freight charges for returned items.

Dow-Key Terms and Conditions:

Dow-Key Microwave Corporation Terms and Conditions apply to all orders unless other provisions have been previously agreed upon. A copy of Dow-Key's Terms and Conditions can be found at www.dowkey.com.

Certificate of Compliance:

If requested at order placement, a certificate of compliance is available upon shipment.

Minimum Order Amount:

Dow-Key's minimum order amount is \$250.00

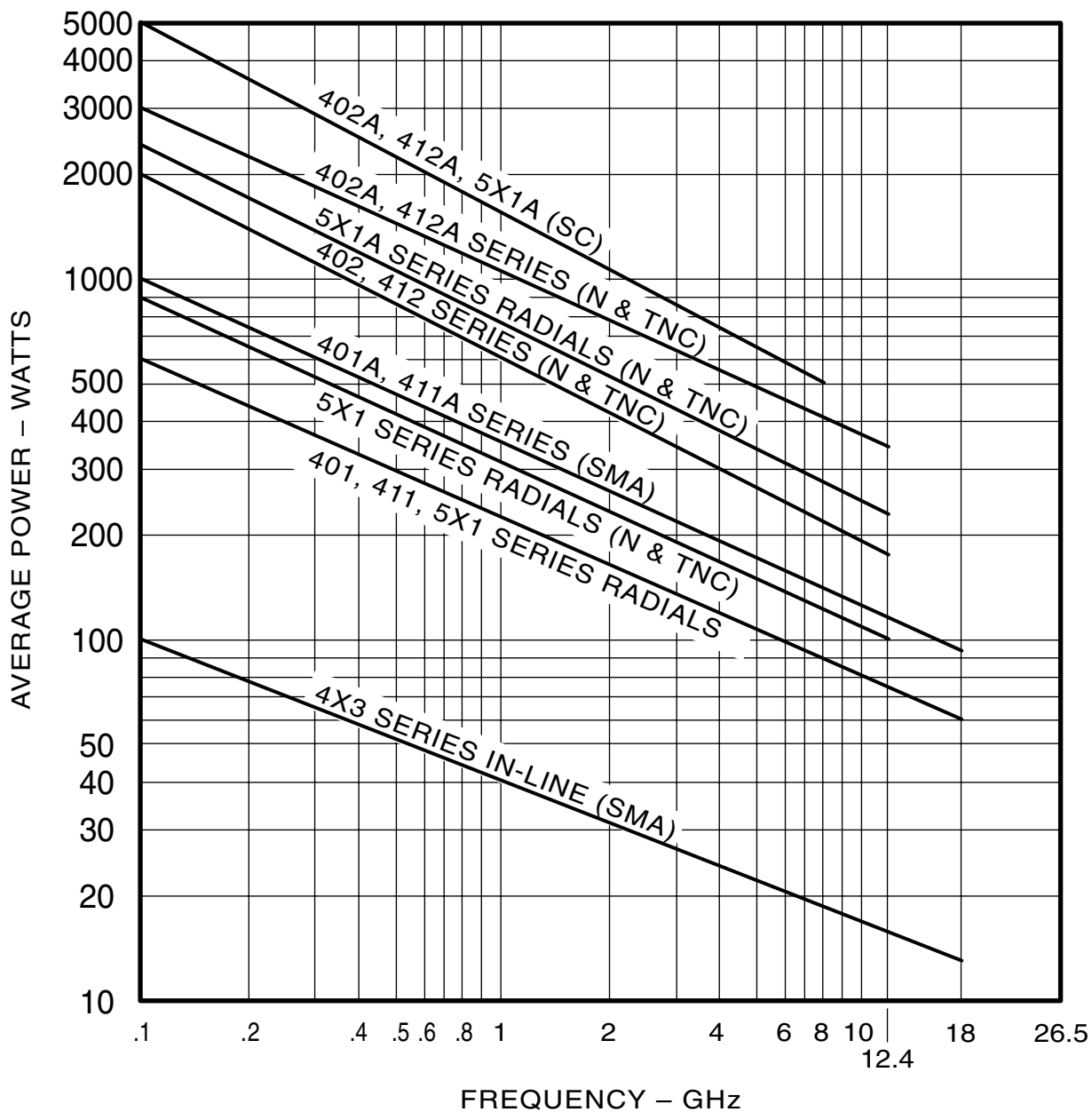
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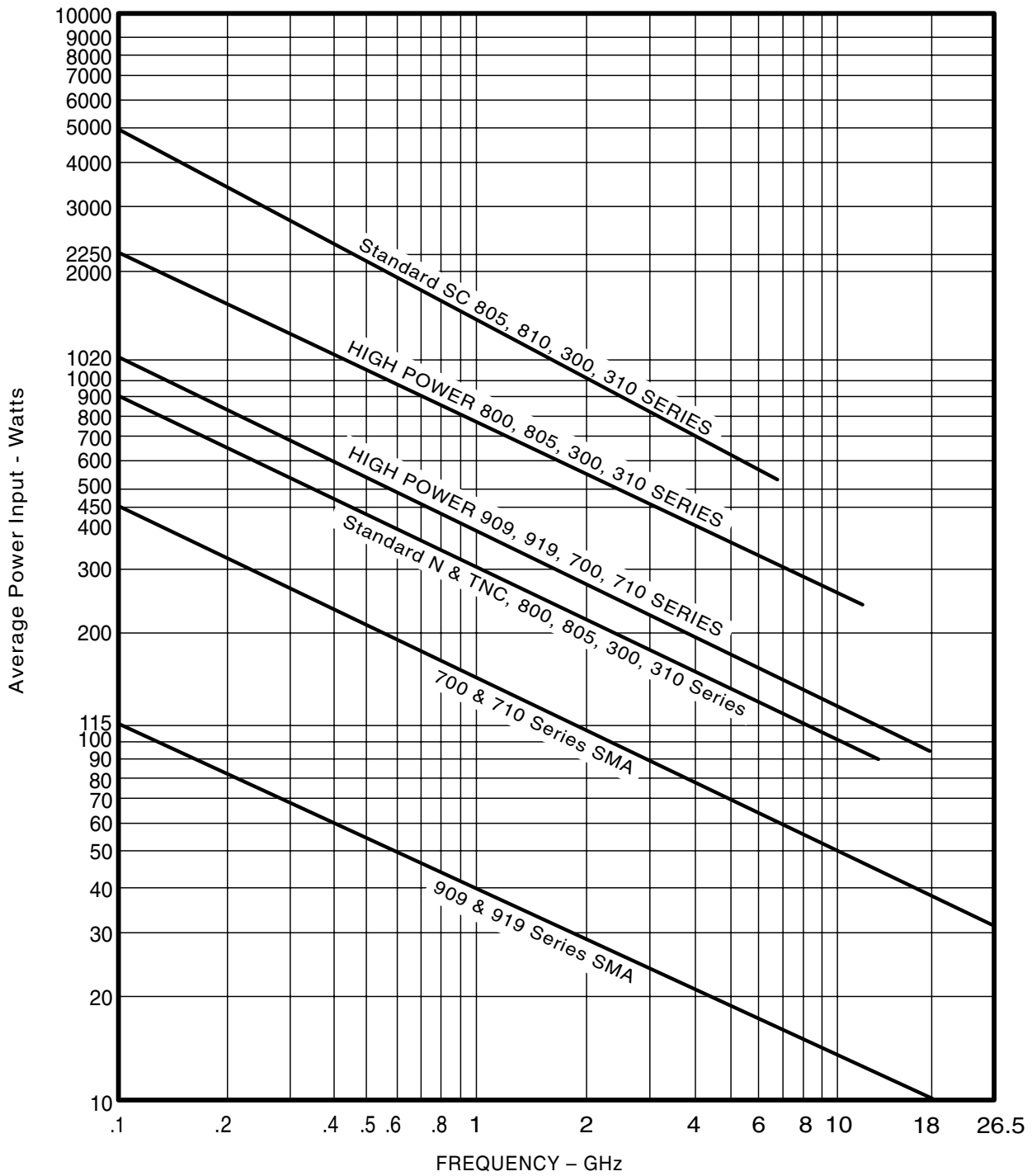
Dow-Key Microwave Corporation continually improves products as new technologies, materials and processes become available. We, therefore, reserve the right to alter, amend, discontinue, or replace any product and or specifications in this catalog at our sole discretion without prior notice.

Power Chart

This chart is based on the following conditions:
Ambient Temperature= 40° C; Altitude= Sea Level; VSWR= 1.0:1; Non-switching
UHF connectors are not recommended for applications above 300MHz.

Please consult factory for additional information.





| VSWR | Derating Factor | VSWR | Derating Factor |
|-------|-----------------|-------|-----------------|
| 1.5:1 | .96 | 3.5:1 | .70 |
| 2.0:1 | .88 | 4.0:1 | .64 |
| 2.5:1 | .84 | 4.5:1 | .60 |
| 3.0:1 | .75 | 5.0:1 | .56 |

Dow-Key Part Numbering System

X A B C - D E FG H I J

(X) RELAY FAMILY

4/5 50 Ohm System

(A) CONFIGURATION

| | | | |
|---|----------|---|-------|
| 0 | SPDT | A | SP10T |
| 1 | Transfer | B | SP11T |
| 2 | SPST | C | SP12T |
| 3 | SP3T | E | SP14T |
| 4 | SP4T | F | SP16T |
| 5 | SP5T | | |
| 6 | SP6T | | |
| 7 | SP7T | | |
| 8 | SP8T | | |
| 9 | SP9T | | |

(B) SIZE

| | |
|---|---|
| 1 | Std. Case, normally SMA connectors (Radial) |
| 2 | Std. Case, normally N Connectors |
| 3 | Small Case, normally SMA (Multithrow) |
| 4 | Intermediate Cavity, SMA/TNC |
| 5 | Miniature Radial |
| 6 | Std. Case, normally N connectors (Radial) |
| 7 | Microminiature Radial |
| 9 | Microminiature Switch |

(C) SPECIAL OPTIONS

| | | | |
|---|--------------------------|---|--------------------------------|
| A | High Power | K | 26.5 GHz |
| B | Bypass (2-4) | L | Flange Mount Cavity |
| C | Special Mounting Bracket | M | Fast Switching |
| D | Bypass (1-2) | N | Remove STD Mounting Bracket |
| E | Bypass (3-4) | P | Power Connector |
| F | Bypass (1-3) | R | Reverse Polarity |
| G | Make Before Break | | |
| H | HI-REL | S | Seal, Enhanced Epoxy or Gasket |
| I | Immersion Seal | T | -55°C to +85°C |
| J | "D" Type Connector | V | Laser Seal |

(D) ACTUATOR COIL TYPE

| | |
|---|------------------------------------|
| 1 | Manual |
| 2 | Failsafe, Position 1 |
| 3 | Pulse Latching |
| 4 | Latching, Self Cutoff |
| 5 | Normally Open |
| 6 | Failsafe, Suppression Diodes |
| 7 | Pulse Latching, Suppression Diodes |
| 8 | Latching Reset, Suppression Diodes |
| 9 | Normally Open, Suppression Diodes |

(J) SPECIAL OPTIONS

| | |
|---|---|
| A | TTL HI, Commercial (2.4 - 5.5 Vdc) |
| B | TTL HI, Military (2.4 - 5.5 Vdc) |
| E | CMOS BCD Decoding Logic & MOSFET Driver, Commercial |
| L | TTL Logic Low, Commercial (0.0 - 0.8 Vdc) |
| N | CANBUS |
| T | Ethernet |

(I) TERMINATIONS

| | | | |
|---|-------|---|-------------------|
| 1 | Short | 5 | 50Ω, 5W |
| 2 | Open | 7 | 50Ω, Term, Port 1 |
| 3 | 50 Ω | 8 | 50Ω, SMA |
| 4 | 75 Ω | | |

(H) AUXILIARY/INDICATOR CONTACTS

| | |
|---|-----------------|
| 0 | None |
| 2 | Mechanical SPST |
| 3 | Mechanical SPDT |
| 5 | Optical |
| 6 | Electronic |

(FG) CONNECTORS

| | |
|----|-------------------------|
| 01 | N |
| 02 | BNC |
| 03 | TNC |
| 04 | UHF |
| 05 | C |
| 06 | GPO* |
| 07 | BMA (OSP) |
| 08 | SMA |
| 09 | 3.5mm (SMA Interface) |
| 12 | SMB |
| 14 | TPS |
| 19 | Pins (PC Board Drop-in) |
| 51 | HN |
| 53 | SC |
| 54 | 7/16 |
| 71 | SMB |

* GPO is a trademark of Gilbert Engineering

(E) ACTUATOR COIL VOLTAGE

| | | | |
|---|--------|---|--------|
| 0 | Manual | 7 | 20 Vdc |
| 1 | 6 Vdc | 8 | 24 Vdc |
| 2 | 12 Vdc | 9 | 15 Vdc |
| 3 | 28 Vdc | | |
| 4 | 48 Vdc | | |