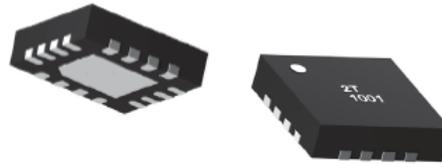


Features

- Supports up to 20 W Power
- Low Insertion Loss: 0.3 dB @ 6 GHz
- High Isolation: 24 dB @ 6 GHz
- RoHS* Compliant



Plastic Molded 16L 3x3 QFN
(Package paddle electrical & thermal ground)

Description

A SPDT switch in a plastic 16-ld 3 mm QFN package. Each port is electrical series and thermal direct to ground (EST2G). This device is designed for wireless infrastructure, test instruments and other RF & microwave applications from 100 MHz to 6 GHz.

Electrical Specifications: $T_C = +25^\circ\text{C}$ (unless otherwise specified)

Parameter	Test Conditions	Units	Min.	Typ.	Max.
Breakdown Voltage (V_{BR})	$I_R = 10 \mu\text{A}$	V	125	—	—
Series Resistance (R_S)	$I_F = 100 \text{ mA}$, 500 MHz	Ω	—	1.7	—
Total Capacitance (C_T)	$V_R = -20 \text{ V}$, 1 MHz	pF	—	0.05	—
Lifetime (t)	$I_F = 10 \text{ mA}$, $I_R = 6 \text{ mA}$, @ 50%	ns	—	90	—
I-Region (w)	I-Layer	μm	—	8	—
IP3	$I_F = 50 \text{ mA}$, $F_1 = 1.27 \text{ GHz}$, $F_2 = 1.28 \text{ GHz}$, $P = 40 \text{ dBm}$	dBm	—	68	—
Input Return Loss (IR_L)	$I_F = 100 \text{ mA}$, 2.3 - 2.7 GHz $I_F = 100 \text{ mA}$, 6 GHz	dB	21 15	25 18	—
Output Return Loss (OR_L)	$I_F = 100 \text{ mA}$, 2.3 - 2.7 GHz $I_F = 100 \text{ mA}$, <6 GHz	dB	21 15	25 18	—
Insertion Loss (I_L)	$I_F = 100 \text{ mA}$, 2.3 - 2.7 GHz $I_F = 100 \text{ mA}$, <6 GHz	dB	—	0.2 0.3	0.3 —
Isolation (I_{SO})	$V_R = -10 \text{ V}$, 2.3 - 2.7 GHz $V_R = -10 \text{ V}$, <6 GHz	dB	26 19	30 23	—

* Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.

Absolute Maximum Ratings^{1,2}

Parameter	Absolute Maximum
Breakdown Voltage (V_R)	125 V
Forward Current (I_F)	200 mA
Theta (θ_{JC})	130°C/W
Junction Temperature (T_J)	+175°C
Storage Temperature (T_{STG})	-65°C to +150°C
Mounting Temperature (T_{MTG})	+260°C per JEDEC STD-J-20C

1. Exceeding any one or combination of these limits may cause permanent damage to this device.
2. MACOM does not recommend sustained operation near these survivability limits.

Handling Procedures

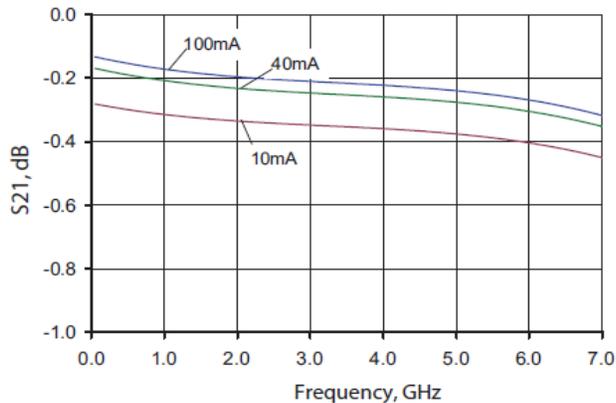
Please observe the following precautions to avoid damage:

Static Sensitivity

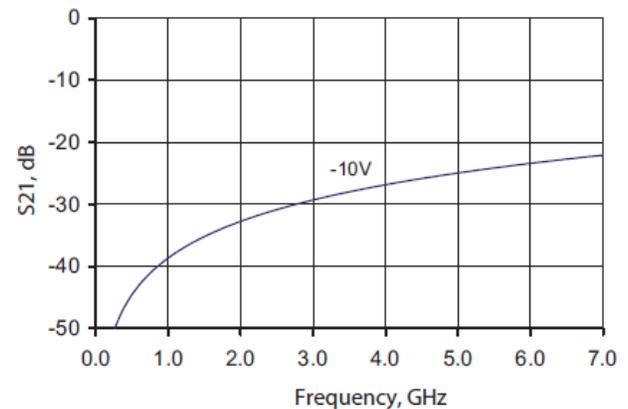
These electronic devices are sensitive to electrostatic discharge (ESD) and can be damaged by static electricity. Proper ESD control techniques should be used when handling these Class 0 (HBM) devices.

J1 - J2 Typical RF Performance @ $T_A = 25^\circ\text{C}$, $Z_O = 50 \Omega$, -10 dBm Small Signal

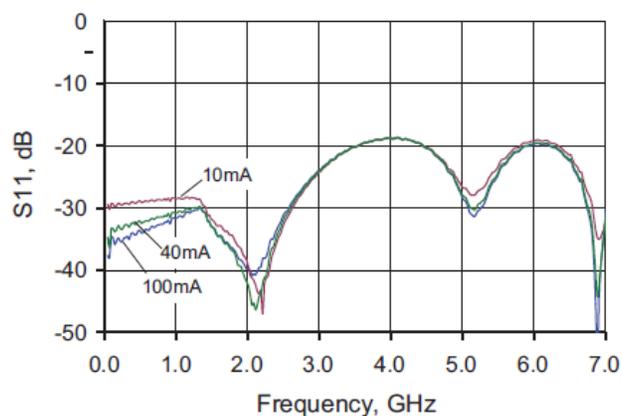
Insertion Loss



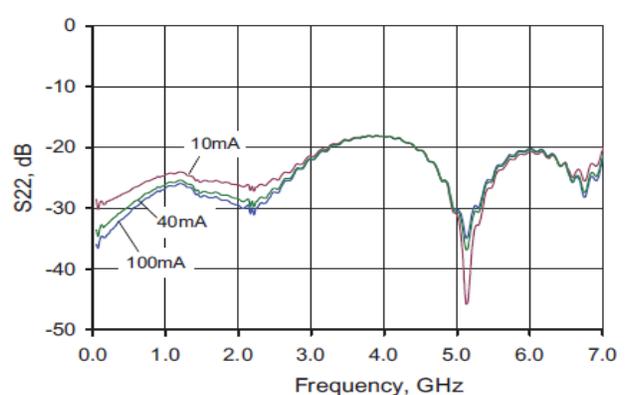
Isolation



Input Return Loss

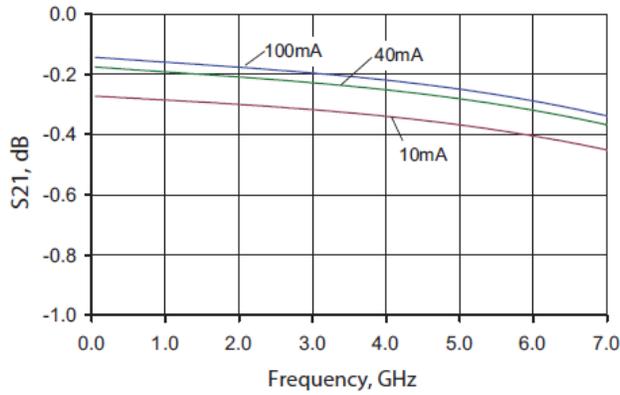


Output Return Loss

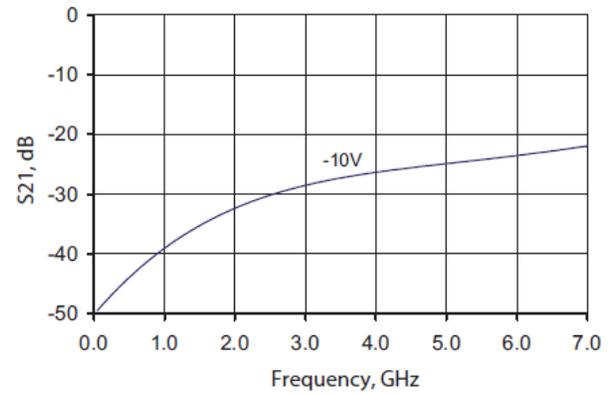


J1 - J3 Typical RF Performance @ $T_A = 25^\circ\text{C}$, $Z_O = 50 \Omega$, -10 dBm Small Signal

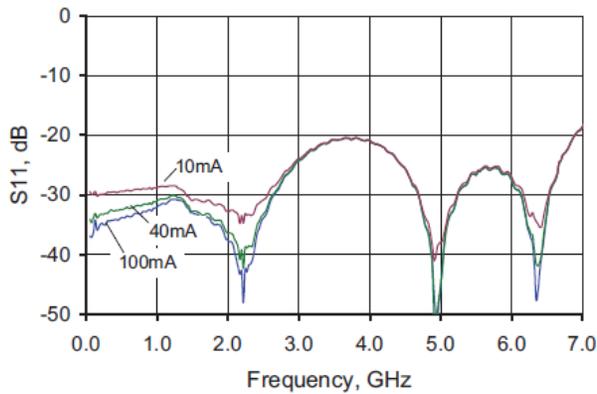
Insertion Loss



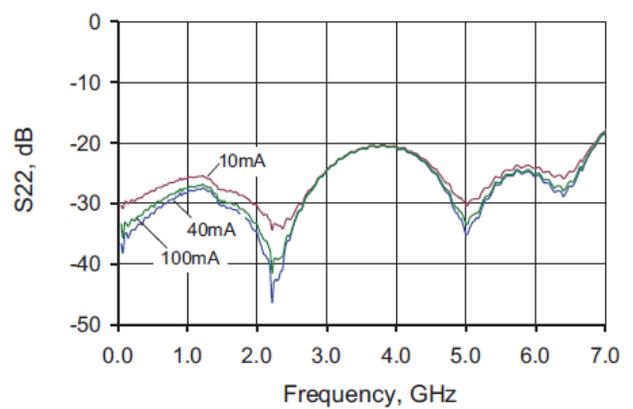
Isolation



Input Return Loss

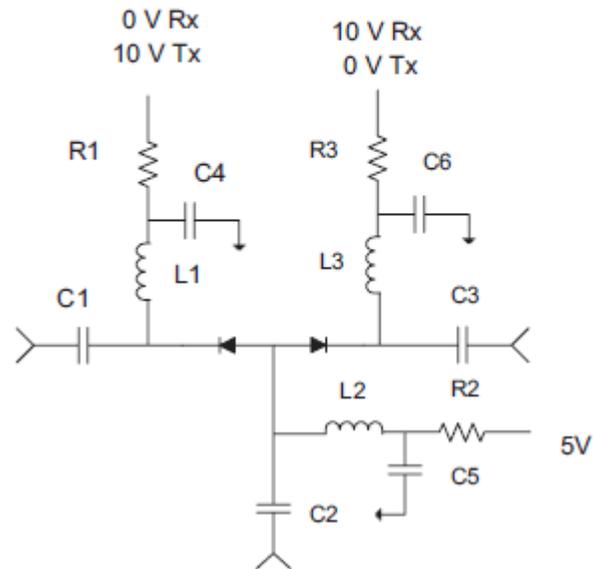
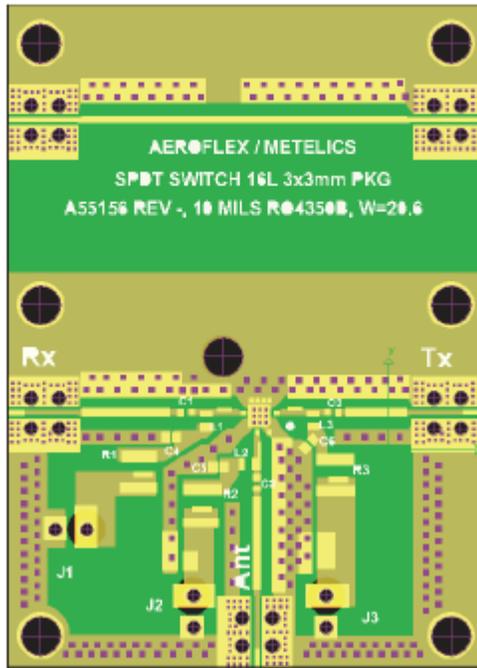


Output Return Loss



Typical RF Performance on Demo Board @ $T_A = 25^\circ\text{C}$, $Z_0 = 50 \Omega$, -10 dBm Small Signal

Demo Board Outline, Dimensions and Schematic



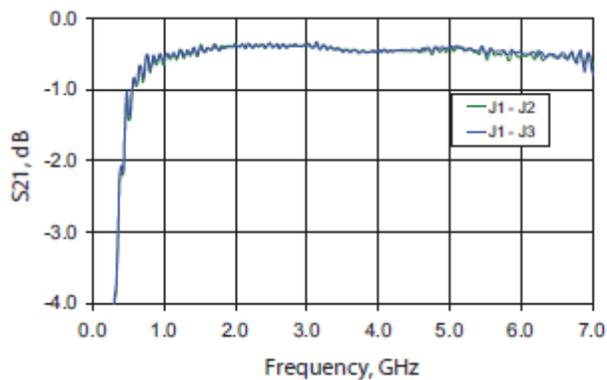
Dimensions: 1.50 in (3.81 cm) X 2.10 in (5.33 cm)

Parts Lists

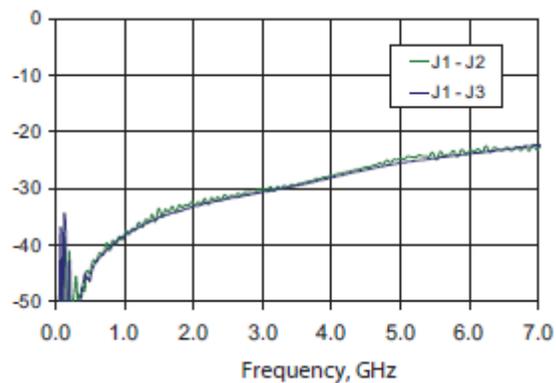
Item	Value	Description	MFG	Part Number
R1, R3	0 Ohm	Chip Short Resistor		
R2	39 Ohm	Chip Resistor, 0.5 W, 5%		
C1, C2, C3	30 pF	Chip DC BLK Capacitor, 0402 PLG, 20%	DiLabs	P42BL300M5S
C4, C5, C6	47 pF	Chip Capacitor, 0603 PKG, 20%	ATC	600S470MT250XT
L1, L2, L3	27 nH	Chip Inductor, 0402 PKG, 5%	CoilCraft	0402CS-27NX_LU
PCB	na	Demo Board, 10 mils Rogers RO4350B	Metelics	A55156 rev -

Typical RF Performance on Demo Board @ $T_A = 25^\circ\text{C}$, $Z_O = 50 \Omega$, -10 dBm Small Signal

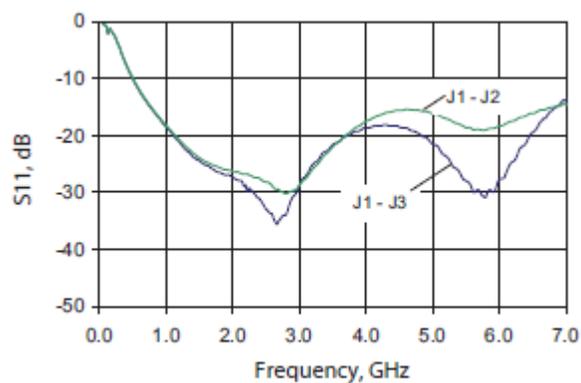
Insertion Loss



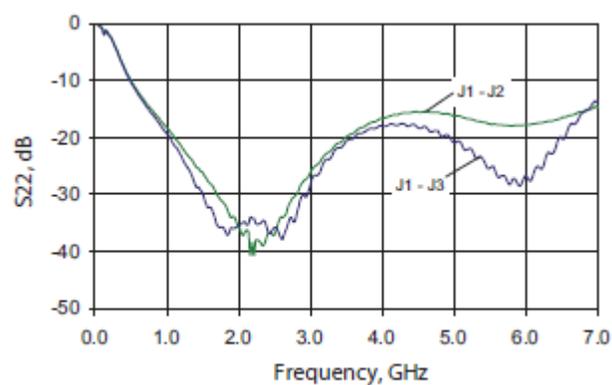
Isolation



Input Return Loss



Output Return Loss



M/A-COM Technology Solutions Inc. All rights reserved.

Information in this document is provided in connection with M/A-COM Technology Solutions Inc ("MACOM") products. These materials are provided by MACOM as a service to its customers and may be used for informational purposes only. Except as provided in MACOM's Terms and Conditions of Sale for such products or in any separate agreement related to this document, MACOM assumes no liability whatsoever. MACOM assumes no responsibility for errors or omissions in these materials. MACOM may make changes to specifications and product descriptions at any time, without notice. MACOM makes no commitment to update the information and shall have no responsibility whatsoever for conflicts or incompatibilities arising from future changes to its specifications and product descriptions. No license, express or implied, by estoppel or otherwise, to any intellectual property rights is granted by this document.

THESE MATERIALS ARE PROVIDED "AS IS" WITHOUT WARRANTY OF ANY KIND, EITHER EXPRESS OR IMPLIED, RELATING TO SALE AND/OR USE OF MACOM PRODUCTS INCLUDING LIABILITY OR WARRANTIES RELATING TO FITNESS FOR A PARTICULAR PURPOSE, CONSEQUENTIAL OR INCIDENTAL DAMAGES, MERCHANTABILITY, OR INFRINGEMENT OF ANY PATENT, COPYRIGHT OR OTHER INTELLECTUAL PROPERTY RIGHT. MACOM FURTHER DOES NOT WARRANT THE ACCURACY OR COMPLETENESS OF THE INFORMATION, TEXT, GRAPHICS OR OTHER ITEMS CONTAINED WITHIN THESE MATERIALS. MACOM SHALL NOT BE LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL, OR CONSEQUENTIAL DAMAGES, INCLUDING WITHOUT LIMITATION, LOST REVENUES OR LOST PROFITS, WHICH MAY RESULT FROM THE USE OF THESE MATERIALS.

MACOM products are not intended for use in medical, lifesaving or life sustaining applications. MACOM customers using or selling MACOM products for use in such applications do so at their own risk and agree to fully indemnify MACOM for any damages resulting from such improper use or sale.