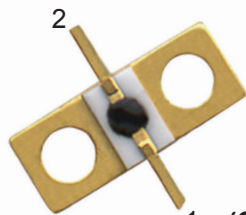


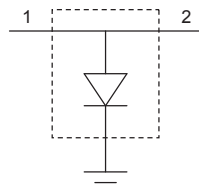
MSWSH-100-30

PIN Diode Shunt Switch Element



1 (CM22)

Heat sink is cathode, epoxy encapsulation



Description

A broadband, high linearity, high power shunt switch element in a 10 x 4 mm bolt channel metal package. This device is designed for WiMax, Wibro, WLAN, TD-SCDMA and other wireless infrastructure applications. It is also suited for 0.1 ~ 6 GHz applications with up to 100 watts of power.

Features

- Supports up to 100 watts when hot switched
- Supports up to 300 watts when cold switched
- Low insertion loss 0.15 dB typical up to 2.7 GHz
- High isolation 31 dB typical up to 2.7 GHz

Electrical Specifications, $T_A = +25^\circ\text{C}$, RF Parameters from Product Test Board

SYMBOL	TEST CONDITIONS		MIN	TYPICAL	MAX	UNITS
V_{BR}	$I_R = 10 \mu\text{A}$		700	—	—	V
V_F	$I_F = 100 \text{ mA}$		—	850	—	mV
C_J	$V_R = 50 \text{ V}$	$F = 1 \text{ MHz}$	—	0.4	—	pF
R_S	$I_F = 100 \text{ mA}$	$F = 500 \text{ MHz}$	—	0.4	0.6	Ω
τ	$I_F = 10 \text{ mA}$	$I_R = 6 \text{ mA } 50 \%$	—	3400	—	ns
W	I - Layer		—	80	—	μm
IL	$V_R = 50 \text{ volts}$	$F = 2.3 \sim 2.7 \text{ GHz}$	—	0.15	0.25	dB
		$F = 6.0 \text{ GHz}$	—	0.35	0.45	dB
IRL	$V_R = 50 \text{ volts}$	$F = 2.3 \sim 2.7 \text{ GHz}$	15	22	—	dB
		$F = 6.0 \text{ GHz}$	10	15	—	dB
Iso	$I_F = 100 \text{ mA}$	$F = 2.3 \sim 2.7 \text{ GHz}$	28	31	—	dB
		$F = 6.0 \text{ GHz}$	23	26	—	dB

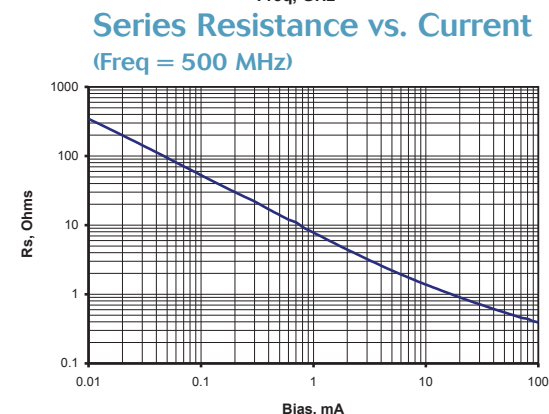
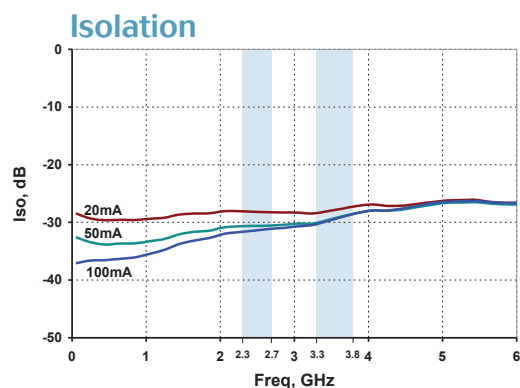
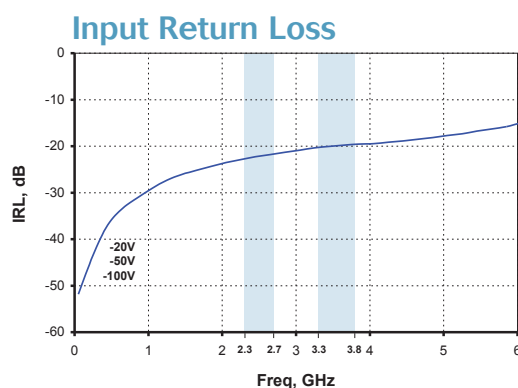
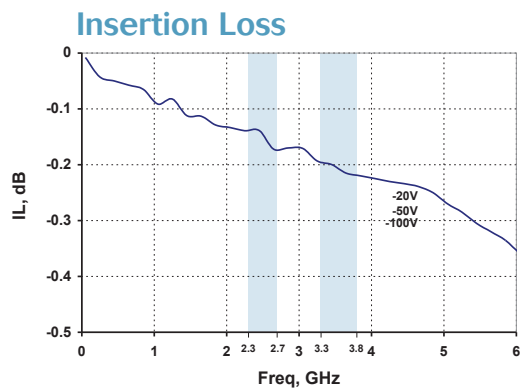
Absolute Maximum Ratings

RATING	LIMITS	UNITS
I_p	1.0	A
θ_{JC}	5.0	$^\circ\text{C/W}$
T_J	+175	$^\circ\text{C}$
T_{STG}	-65 to +150	$^\circ\text{C}$
T_{SOLDER}	+230 $^\circ\text{C}$ for 30 seconds	



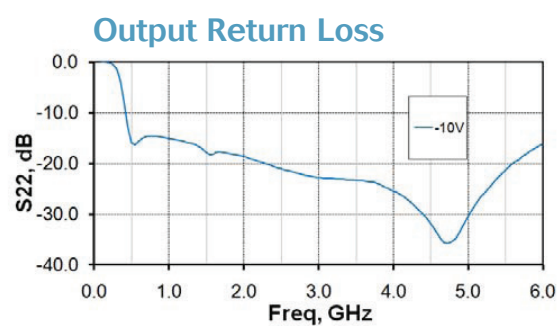
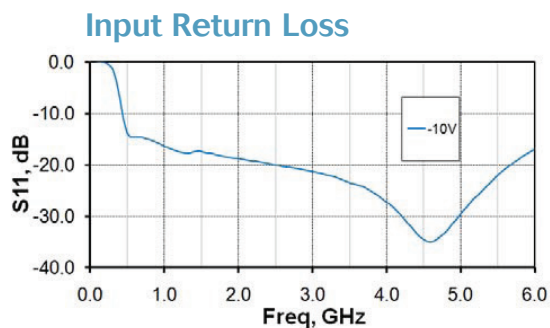
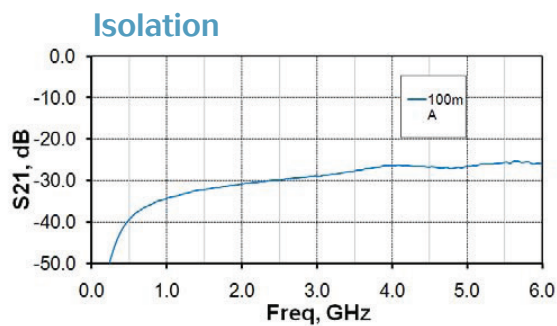
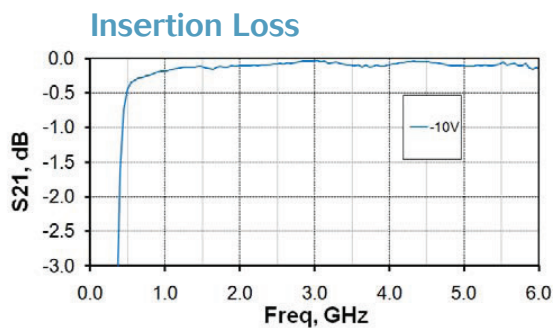
Typical RF Performance on product test board

$T_A = 25\text{ }^{\circ}\text{C}$, $Z_0 = 50\text{ }\Omega$, -10 dBm Small Signal (Unless Otherwise Specified)

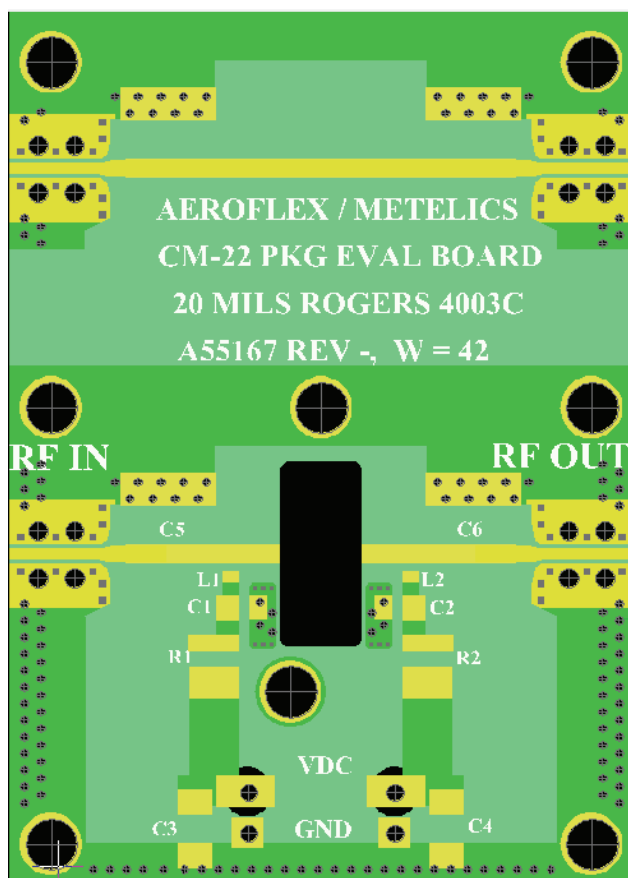


Typical RF Performance on Demo Board

$T_A = 25\text{ }^{\circ}\text{C}$, $Z_0 = 50\text{ }\Omega$, -10 dBm Small Signal, 100 mA Bias

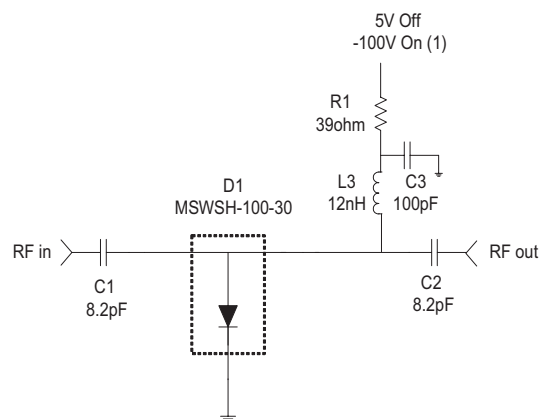
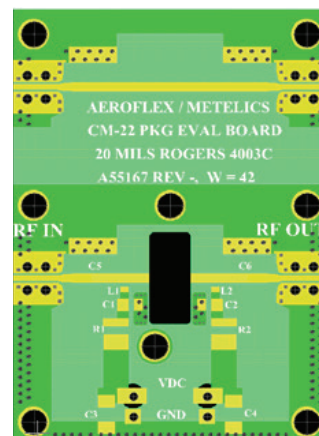


Demo Board Outline, Dimensions & Schematic



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

Actual Size

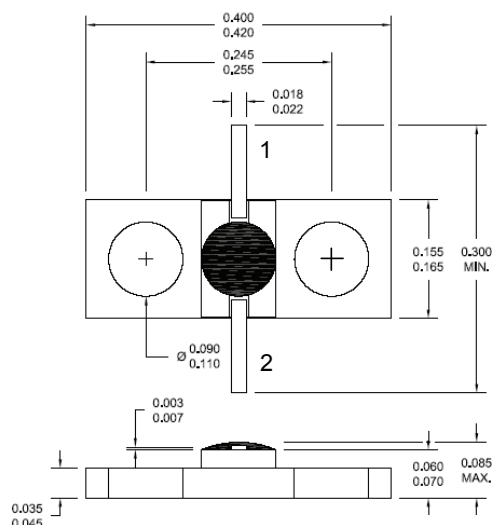


notes:
(1) Different Input power require
different reverse bias voltage

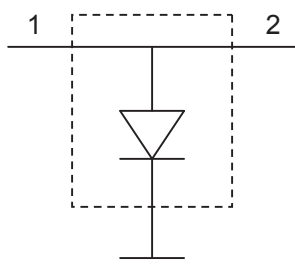
Parts List

COMPONENT	VALUE	DESCRIPTION	MANUFACTURE	P/N
R1	39 Ω	Chip Resistor, 0.5 W, 5%	KOA Speer	RK73B3ATTD390J
C1, C2	8.2 pF	Capacitor, 0402 pkg, 20%	ATC	ATC600L8R2BT200T
C3	100 pF	Chip Capacitor, 0603 pkg, 20%	ATC	ATC600S101JT250XT
L1	12 nF	Chip Inductor, 0402 pkg, 10%	ATC	ATC0402WL120JT
D1	NA	PIN Diode Shunt Switch	Aeroflex / Metelics	MSWSH-100-30
PCB	NA	Demo Board, 10 mils Rogers RO4003C	Aeroflex / Metelics	A55167 REV -

Package Outline (CM22) and Electrical Schematic



(Inches)



PIN FUNCTION

1,2 ANODE

Base Flange: CATHODE, RF and DC GROUND

Aeroflex / Metelics Inc.

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Our passion for performance is defined by three attributes represented by these three icons: solution-minded, performance-driven and customer-focused.