

Rev. V1

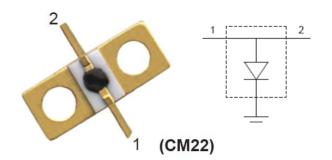
Features

- Supports up to 100 W when hot switched
- Supports up to 300 W when cold switched
- Low Insertion Loss: 0.15 dB up to 2.7 GHz
- High Isolation: 31 dB up to 2.7 GHz
- RoHS* Compliant

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 $0.1 \sim 6$ GHz applications with up to 100 watts of power.



Electrical Specifications: T_A = +25°C

Parameter	Test Conditions	Units	Min.	Тур.	Max.
Breakdown Voltage (V _B)	Ι _R = 10 μΑ	V	700	_	_
Forward Voltage (V _F)	I _F = 100 mA	mV	_	850	_
Junction Capacitance (C _J)	V _R = -50 V, 1 MHz	pF	_	0.4	_
Series Resistance (R _S)	I _F = 100 mA, 500 MHz	Ω	_	0.4	0.6
I-Region (W)	I-Layer	μm	_	80	_
Insertion Loss (I _L)	V _R = 50 V 2.3 ~ 2.7 GHz <6.0 GHz	dB	_	0.15 0.35	0.25 0.45
Isolation (I _{SO})	I _F = 100 mA 2.3 ~ 2.7 GHz 6.0 GHz	dB	28 23	31 26	_
Input Return Loss (R _L)	V _R = 50 V 2.3 ~ 2.7 GHz 6.0 GHz	dB	15 10	22 15	_
Minority Carrier Lifetime (T _L)	I _F = 10 mA, I _R = 6 mA, @ 50%	ns	_	3400	_

Absolute Maximum Ratings

Parameter	Absolute Maximum		
Peak Current	1 A		
Thermal Resistance	5°C/W		
Junction Temperature	+175°C		
Storage Temperature	-65°C to +150°C		
Solder Temperature	+230°C for 30 seconds		

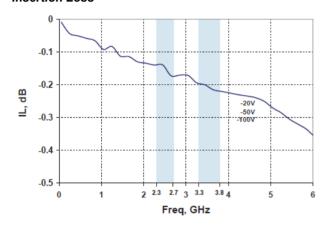
^{*} Restrictions on Hazardous Substances, European Union Directive 2011/65/EU.



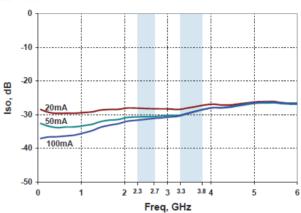
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Typical RF Performance: Production Test Board $T_A = 25^{\circ}C$, $Z_O = 50 \Omega$, -10 dBm Small Signal

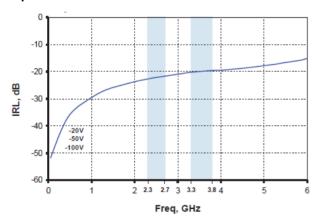
Insertion Loss



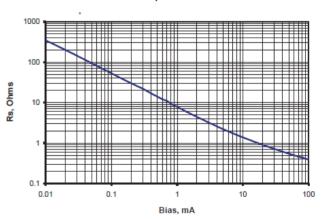
Isolation



Input Return Loss



Series Resistance vs. Bias, 500 MHz

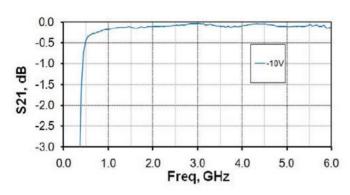




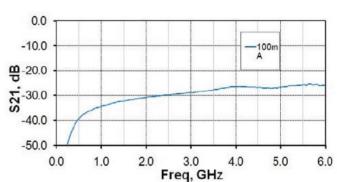
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Typical RF Performance: Demo Board $T_A = 25^{\circ}C$, $Z_O = 50 \Omega$, -10 dBm Small Signal, 100 mA Bias

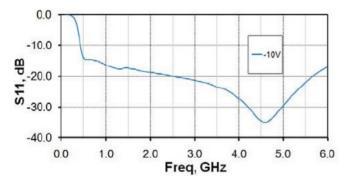
Insertion Loss



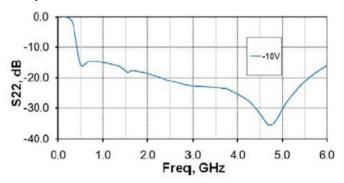
Isolation



Input Return Loss



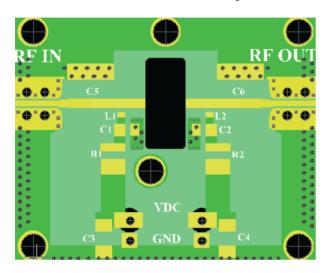
Output Return Loss





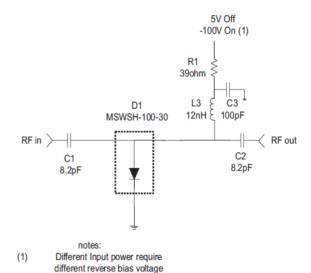
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Recommended Demo PCB Layout



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

Schematic



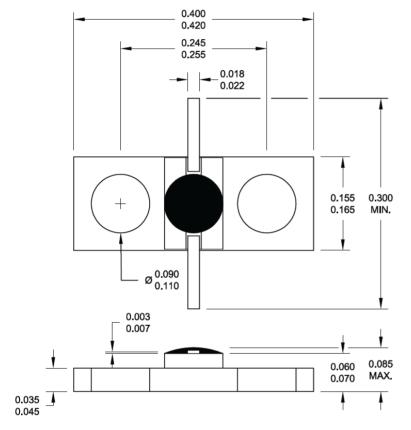
Electrical Specifications: T_A = +25°C

Component	Value	Description	Manufacture	Manufacture Part #
C1, C2	8.2 pF	Capacitor, 0402 pkg, 20%	ATC	ATC600L8R2BT200T
C3	100 pF	Chip Capacitor, 0603 pkg, 20%	ATC	ATC600S101JT250XT
R1	39 Ω	Chip Resistor, 0.5 W, 5%	KOA Speer	RK73B3ATTD390J
L1	12 nF	Chip Inductor, 0402 pkg, 10%	ATC	ATC402WL120JT



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Outline (2012)



PIN FUNCTION

1,2 ANODE

Base Flange: CATHODE, RF and DC GROUND

(Inches)

MSWSH-100-30



PIN Diode Shunt Switch Element

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