Surface Mount

Switch GaAs

GSWA-4-30DR+

50Ω SP4T, TTL Driver, Absorptive DC to 3 GHz

CASE STYLE: AN1102
PRICE: $19.95 ea. QTY (1-9)

Maximum Ratings

Operating Temperature	-30°C to 85°C
Storage Temperature	-55°C to 100°C
Input Power	see table
Vcontrol	(V+) +0.4V

Permanent damage may occur if any of these limits are exceeded.

Features

- wideband, DC to 3 GHz
- high isolation, 37 dB typ.
- low video leakage, 30 mVp-p typ.
- integral TTL driver
- aqueous washable

Applications

- cellular, PCN
- satellite communication
- receiver antenna switching

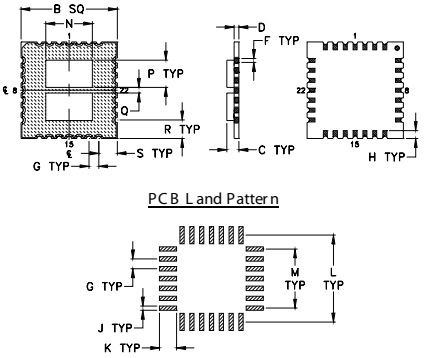
+RoHS Compliant

The +Suffix identifies RoHS Compliance. See our web site for RoHS Compliance methodologies and qualifications

Pin Connections

RF IN	1
RF OUT 1	25
RF OUT 2	21
RF OUT 3	9
RF OUT 4	5
CONTROL 1	15
CONTROL 2	16
CONTROL 3	13
CONTROL 4	14
+5V (V+)	12
-5V (V-)	18
GROUND	all other pins

Outline Drawing

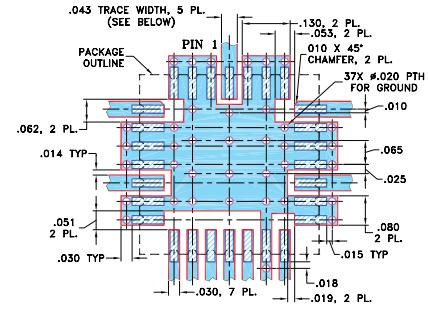


Outline Dimensions (inch / mm)

A	B	C	D	E	F	G	H	J
—	.487	.06	.025	—	.020	.050	.040	.022
—	12.37	1.55	0.64	—	0.51	1.27	1.02	0.56

K	L	M	N	P	Q	R	S	wt
.087	.441	.300	.236	.138	.03	.094	.094	grams
2.21	11.20	7.62	5.99	3.51	0.76	2.39	2.39	0.71

Demo Board MCL P/N: TB-91
Suggested PCB Layout (PL-221)



NOTE: 1. TRACE WIDTH IS SHOWN FOR ROGERS RO4350B WITH DIELECTRIC THICKNESS .020" ± .0015"; COPPER: 1/2 OZ. EACH SIDE. FOR OTHER MATERIALS TRACE WIDTH MAY NEED TO BE MODIFIED.
2. BOTTOM SIDE OF THE PCB IS CONTINUOUS GROUND PLANE.

DENOTES PCB COPPER LAYOUT WITH SMOBC (SOLDER MASK OVER BARE COPPER)

DENOTES COPPER LAND PATTERN FREE OF SOLDER MASK

Electrical Specifications

FREQ. (GHz)		INSERTION LOSS (dB)						1dB COMPR. (dBm)			IN-OUT ISOLATION (dB)					
		DC-500 MHz		500-2000 MHz		2000-3000 MHz		DC-500 MHz	500-2000 MHz	2000-3000 MHz	DC-500 MHz		500-2000 MHz		2000-3000 MHz	
f_L	f_U	Typ.	Max.	Typ.	Max.	Typ.	Max.	Typ.	Typ.	Typ.	Typ.	Min.	Typ.	Min.	Typ.	Min.
DC	3	1.25	1.8	2.0	3.0	2.75	3.9	23*	25	25	50	40	37	32	31	26

*1dB compression gradually decreases to 10 dBm @ 1 MHz

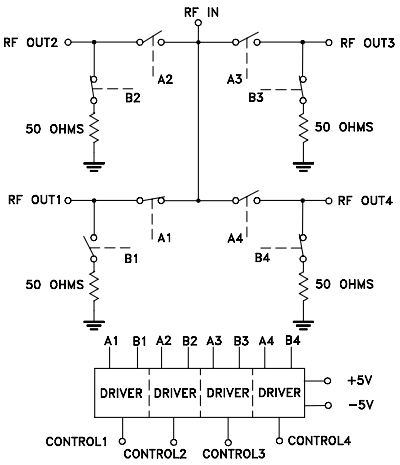
Additional Specifications			
*Control Voltage Low Threshold High Threshold	0/V+ 0.8 max. 3.5 min.		
Control Current, mA	High V: 0.2 max.; Low V: 0.02 max.		
Positive Supply V. (V+)	+5±0.5		
Negative Supply V. (V-)	-5±0.25		
Positive Supply Current, mA	4 max		
Negative Supply Current, mA	20 max.		
VSWR(:1)	1.28 typ., ON DC-2 GHz 1.24 typ.,OFF DC-2 GHz		
Rise/Fall time (10%-90%), ns Switching time, 50% of Control to 90% RF (Turn-on), ns 10% RF (Turn-off), ns	25 typ. 45 typ.		
**Video Leakage, mVp-p 0/+5V Control	30 typ.		
MTBF, hrs @85°C case	$30X10^6$		
Max. Input Power, dBm Steady state control As modulator	DC-100 MHz +20 +8	100-500 MHz +24 +14	500-3000 MHz +30 +20

* Do not apply control voltage high prior to applying V+

** Video leakage or break through is defined as leakage of TTL switching signal to RF output ports. All RF pins must be DC blocked or held at 0V DC.

CONTROL LOGIC							
Control Ports				RF outputs			
1	2	3	4	1	2	3	4
Low	High	High	High	On	Off	Off	Off
High	Low	High	High	Off	On	Off	Off
High	High	Low	High	Off	Off	On	Off
High	High	High	Low	Off	Off	Off	On

Electrical Schematic



Notes

A. Performance and quality attributes and conditions not expressly stated in this specification document are intended to be excluded and do not form a part of this specification document.
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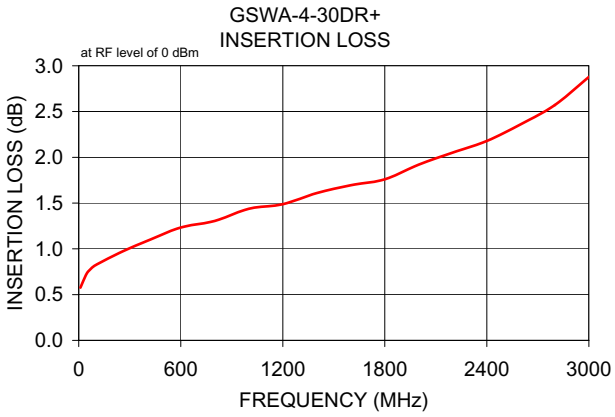
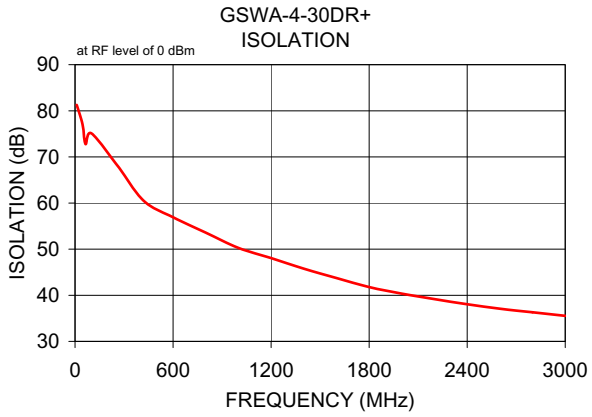
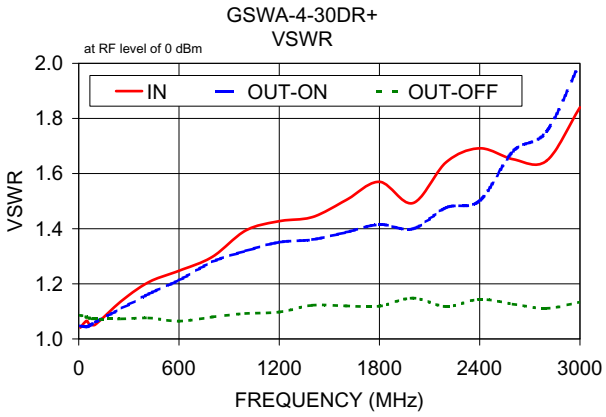
Typical Performance Data

FREQ. (MHz)	ON INSERTION LOSS (dB) TTL Low @ 0V IN-OUT		OFF ISOLATION (dB) TTL High @ 5V IN-OUT		VSWR IN	VSWR OUT ON	VSWR OUT OFF
	$\overline{x}$	σ	$\overline{x}$	σ	$\overline{x}$	$\overline{x}$	$\overline{x}$
10	0.58	0.025	81.27	4.21	1.04	1.05	1.09
28	0.66	0.018	73.11	4.37	1.06	1.04	1.08
64	0.77	0.017	72.78	6.25	1.05	1.05	1.08
100	0.82	0.015	75.11	4.71	1.05	1.06	1.07
260	0.97	0.010	68.08	5.57	1.14	1.11	1.07
420	1.10	0.012	60.51	1.69	1.21	1.16	1.08
600	1.23	0.014	56.91	1.13	1.25	1.21	1.06
800	1.31	0.011	53.59	1.34	1.30	1.28	1.08
1000	1.44	0.018	50.26	0.95	1.39	1.32	1.09
1200	1.49	0.019	48.06	0.56	1.43	1.35	1.10
1400	1.61	0.023	45.78	0.44	1.44	1.36	1.12
1600	1.70	0.025	43.73	0.35	1.50	1.39	1.12
1800	1.76	0.018	41.79	0.33	1.57	1.42	1.12
2000	1.92	0.025	40.34	0.40	1.49	1.40	1.15
2200	2.05	0.025	39.17	0.37	1.64	1.48	1.12
2400	2.18	0.026	38.05	0.41	1.69	1.50	1.14
2600	2.36	0.030	37.08	0.32	1.65	1.68	1.13
2800	2.57	0.037	36.32	0.30	1.65	1.75	1.11
3000	2.88	0.048	35.55	0.34	1.84	2.00	1.13







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