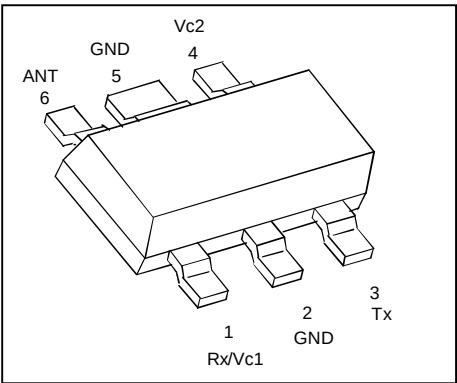


GaAs MMIC

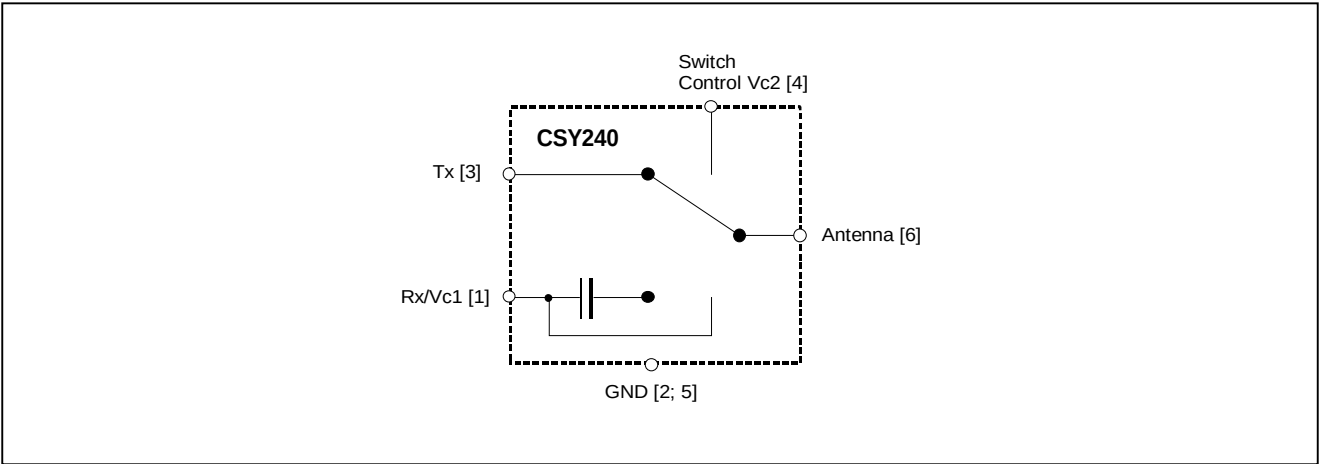
Preliminary Data

- TX/RX- and diversity switch for mobile communications and 2.45GHz WLAN applications
- Low insertion loss
- High TX/RX isolation
- Frequency range 0.5 - 3.0 GHz
- High input power capability
- Very low rise / fall time
- Miniature package MW6 based on SOT23



ESD: **E**lectrostatic **d**ischarge sensitive device, observe handling precautions!

Type	Marking	Ordering code (taped)	Package 1)
CSY 240	S1	Q62702-S2000	MW-6



Maximum ratings

Characteristics	Symbol		Unit
Control voltage range	V_{c1} / V_{c2}	0....-7	V
Channel temperature	T_{Ch}	150	°C
Storage temperature range	T_{stg}	-55...+150	°C
Total power dissipation ($T_S \leq tbd^{\circ}C$) 2)	P_{tot}	tbd.	mW

Thermal resistance

Characteristics	Symbol		Unit
Channel-soldering point (GND)	R_{thChS}	$\leq$ tbd.	K/W
Channel-ambient ³⁾	R_{thChA}	$<$ tbd.	K/W

- 1) Dimensions see page 5.
- 2) Please care for sufficient heat dissipation on the pcb!
- 3) Package mounted on alumina 15 mm x 16.7 mm x 0.7 mm

Electrical characteristics

$T_A = 25^\circ\text{C}$ $R_S = R_L = 50\Omega$ $P_{IN} = 10\text{dBm}$ unless otherwise specified

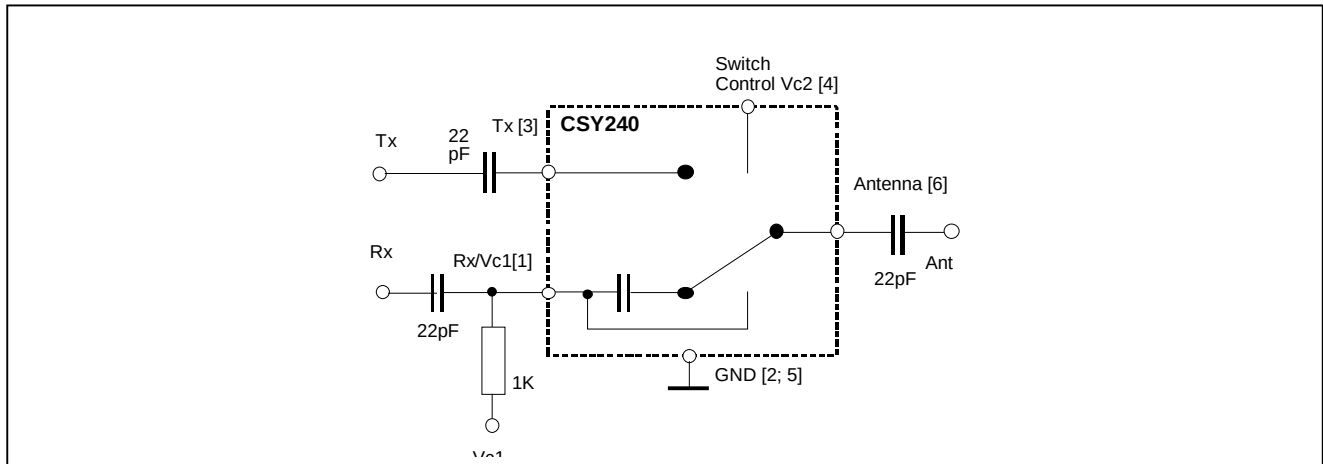
Characteristics	Symbol	min	typ	max	Unit
Control current $V_c = -5\text{V}$	I_c	-	20	-	μA
Insertion Loss Tx - Path $V_{c1} = 0\text{V}; V_{c2} = -5\text{V}; f = 900\text{MHz}$ $f = 1.8\text{GHz}$ $f = 2.5\text{GHz}$	IL_{Tx}	- - -	0.3 0.5 0.7	- - -	dB
Insertion Loss Rx - Path $V_{c1} = -5\text{V}; V_{c2} = 0\text{V}; f = 900\text{MHz}$ $f = 1.8\text{GHz}$ $f = 2.5\text{GHz}$	IL_{Rx}	- - -	0.35 0.55 0.8	- - -	dB
Input- / Output return loss Tx - Path $V_{c1} = 0\text{V}; V_{c2} = -5\text{V}; f = 900\text{MHz}$ $f = 1.8\text{GHz}$ $f = 2.5\text{GHz}$	RL_{Tx}	- - -	20 20 15	- - -	dB
Input- / Output return loss Rx - Path $V_{c1} = -5\text{V}; V_{c2} = 0\text{V}; f = 900\text{MHz}$ $f = 1.8\text{GHz}$ $f = 2.5\text{GHz}$	RL_{Rx}	- - -	16 17 14	- - -	dB
Tx- / Rx - Isolation ¹⁾ $V_{c1} = 0\text{V}; V_{c2} = -5\text{V}; f = 900\text{MHz}$ $f = 1.8\text{GHz}$ $f = 2.5\text{GHz}$	ISO_{TxRx}	- - -	28 22 19	- - -	dB

Characteristics	Symbol	min	typ	max	Unit
Ant / Rx - Isolation ¹⁾ Vc1 = 0V; Vc2 = -5V; f = 900MHz f = 1.8GHz f = 2.5GHz	ISO_{AntRx}	- - -	28 22 19	- - -	dB
Tx- / Ant- Isolation ¹⁾ Vc1 = -5V; Vc2 = 0V; f = 900MHz f = 1.8GHz f = 2.5GHz	ISO_{TxAnt}	- - -	29 24 19	- - -	dB
Output power at 1dB gain compression (Tx- Path) Vc1 = 0V; Vc2 = -5V; f = 900MHz	P_{-1dB}	-	30	-	dBm

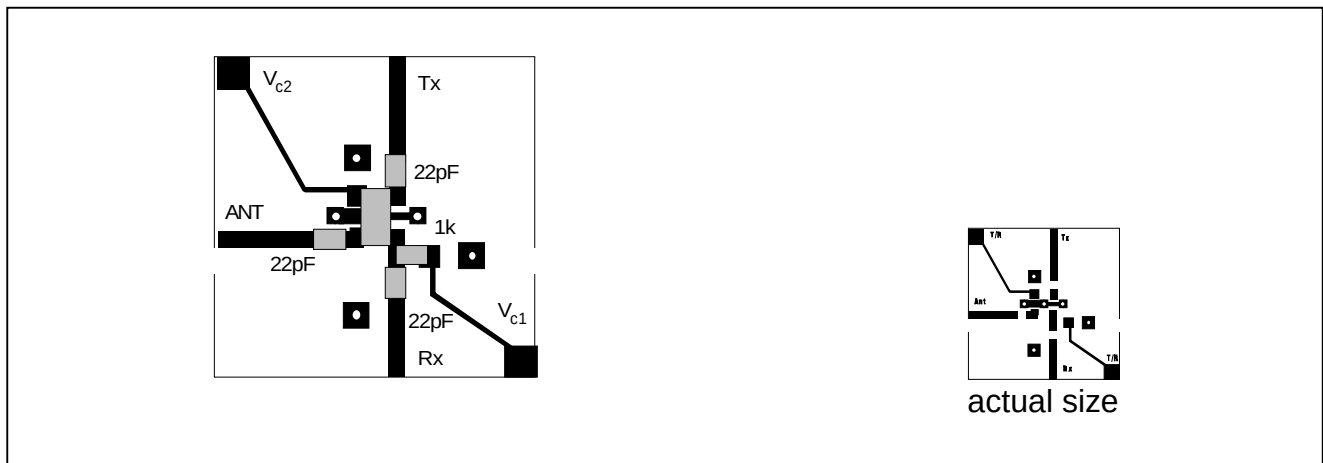
1) See page 4 for definition

Characteristics	Symbol	min	typ	max	Unit
Input Power at 1dB gain compression (Rx - Path) Vc1 = -5V; Vc2 = 0V f = 900MHz	P_{-1dBin}	-	31.5	-	dBm
Third order output intercept point (Tx - path) two-tone intermodulation test Vc1 = 0V; Vc2 = -5V	IP_3	- -	tbd.	- -	dBm
Third order input intercept point (Rx - path) two-tone intermodulation test Vc1 = -5V; Vc2 = 0V	IP_{3in}	- -	tbd.	- -	dBm

Test and application circuit:

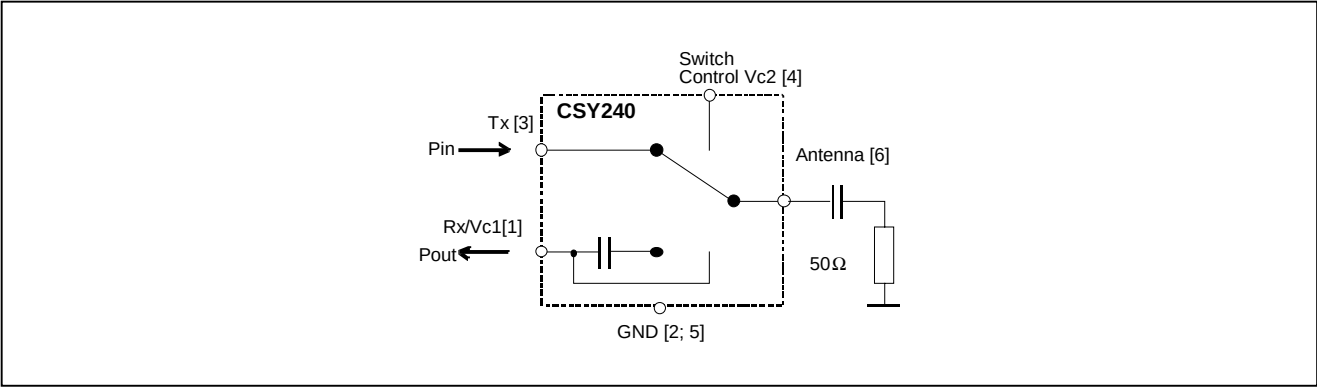


Layout of application board:

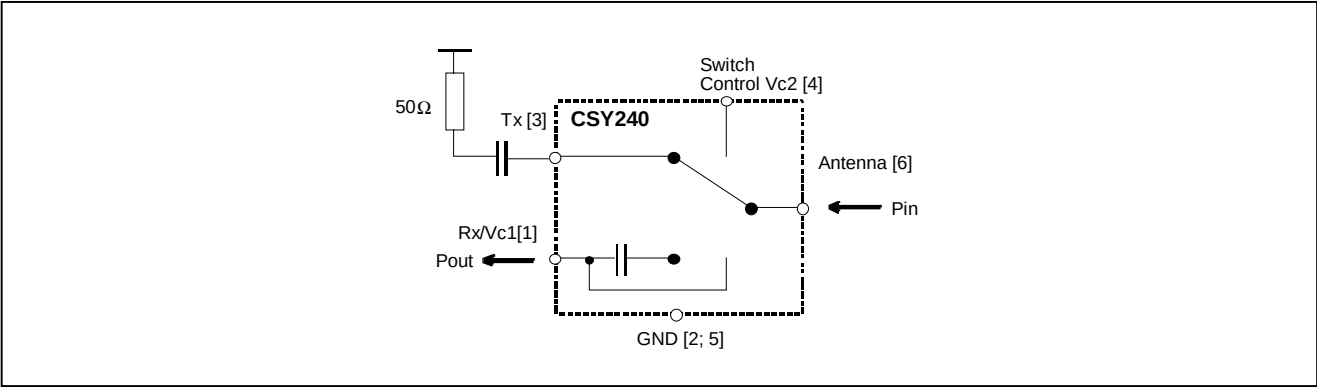


PCB - data: Glass fiber teflon board (double sided) TACONIC TLX-9-0150-CH/CH
 $\epsilon_r = 2.45$ thickness = 0.4mm

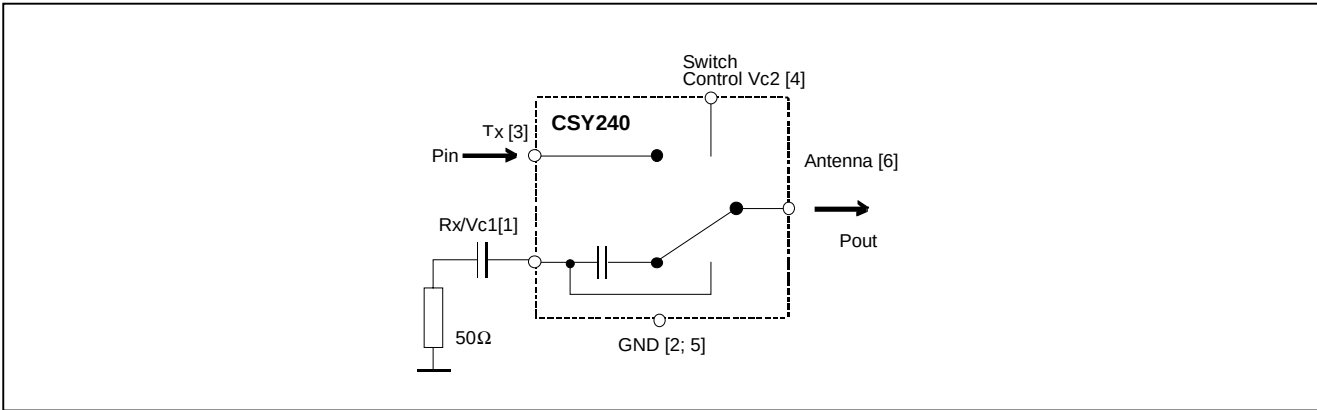
Test - conditions for isolation measurements:



Tx / Rx Isolation

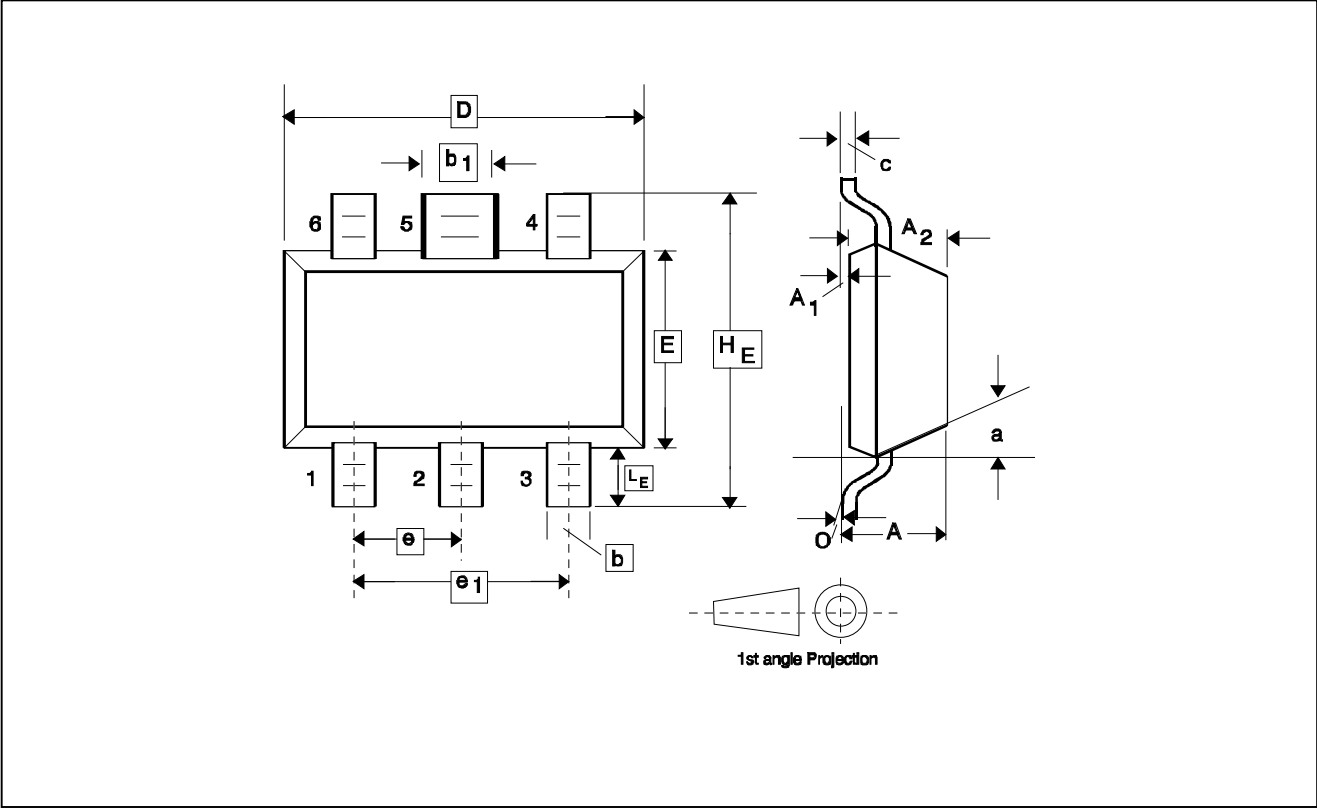


Ant / Rx Isolation



Tx / Ant Isolation

Semiconductor Device Outline MW-6



Dim.	min.	nom.	max.	Gradient	Remark
A			1.1		
A ₁			0.1		
A ₂			1.0		
b		0.3			
b ₁		0.6			
c	0.08		0.15		
D	2.8		3.0		
E	1.2		1.4		
e		0.95			
e ₁		1.9			
H _E			2.6		
L _E			0.6		
a				max 10°	1
q				2°...30°	

1. Applicable on all case top sides

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