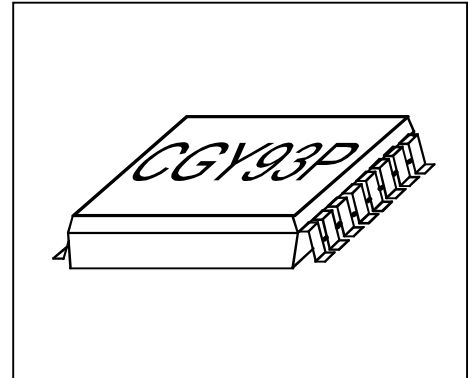


GaAs MMIC

Preliminary Data

- Power amplifier for GSM application
- 2 stage amplifier
- Overall power added efficiency 55%

ESD: **E**lectro**s**tatic **d**ischarge sensitive device,
observe handling precautions!



Type	Marking	Ordering code (taped)	Package
CGY 93P	CGY 93P	Q62702G72	MW 16

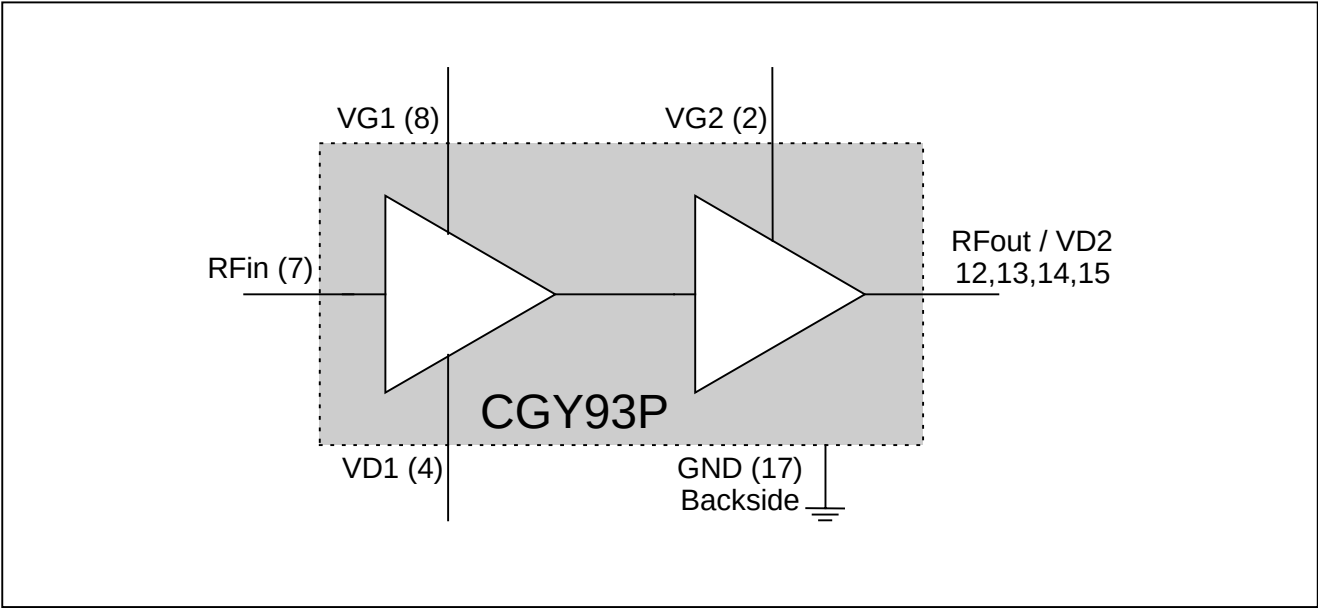
Maximum ratings

Characteristics	Symbol	max. Value	Unit
Positive supply voltage	V_D	7.0	V
Negative supply voltage	V_G	-5.0	V
Supply current stage 1	I_{D1}	0.6	A
Supply current stage 2	I_{D2}	3.5	A
Channel temperature	T_{Ch}	150	°C
Storage temperature	T_{stg}	-55....+150	°C
RF input power	P_{in}	20	dBm
Total power dissipation (CW , $T_s \leq 81^\circ\text{C}$) <i>T_s: Temperature at soldering point</i>	P_{tot}	t.b.d. (better 6 W)	W

Thermal Resistance

Characteristics	Symbol	max. Value	Unit
Channel-soldering point	R_{thChS}	t.b.d.	K/W

Functional block diagramm:



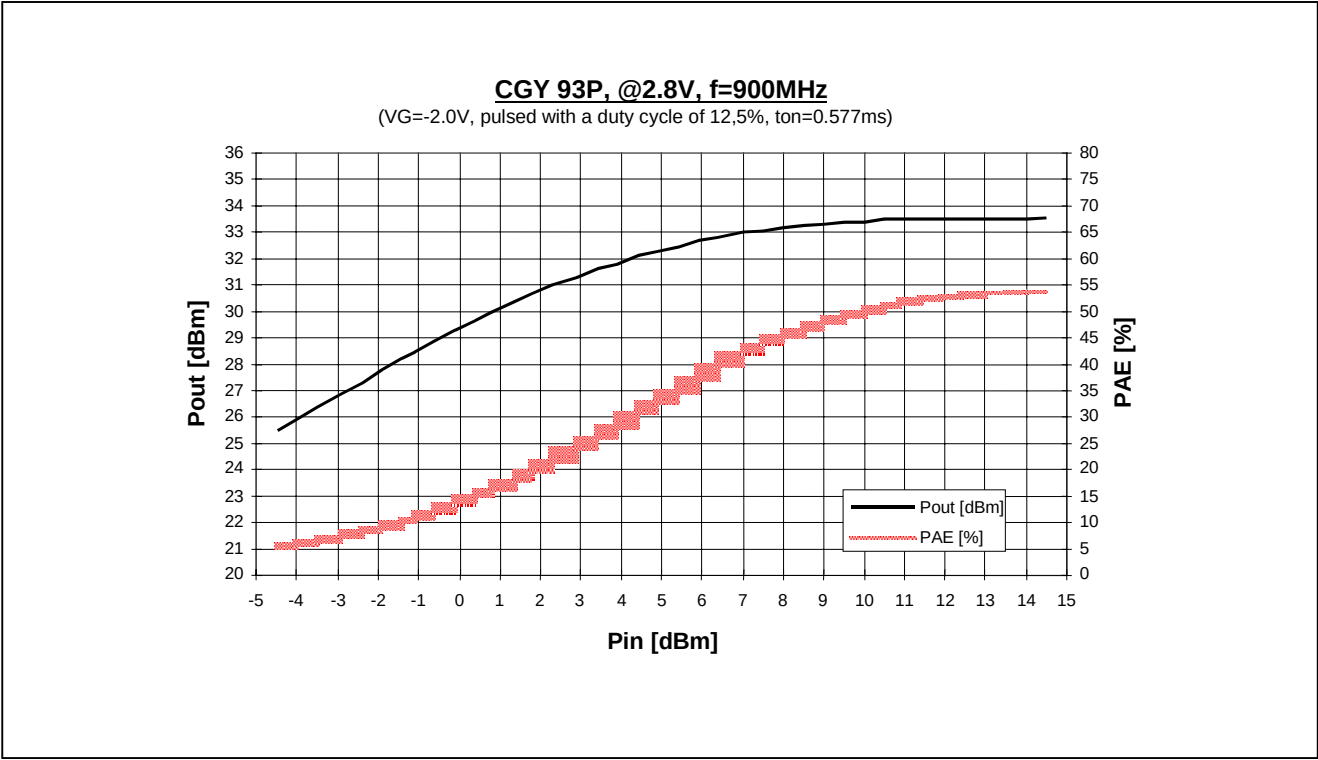
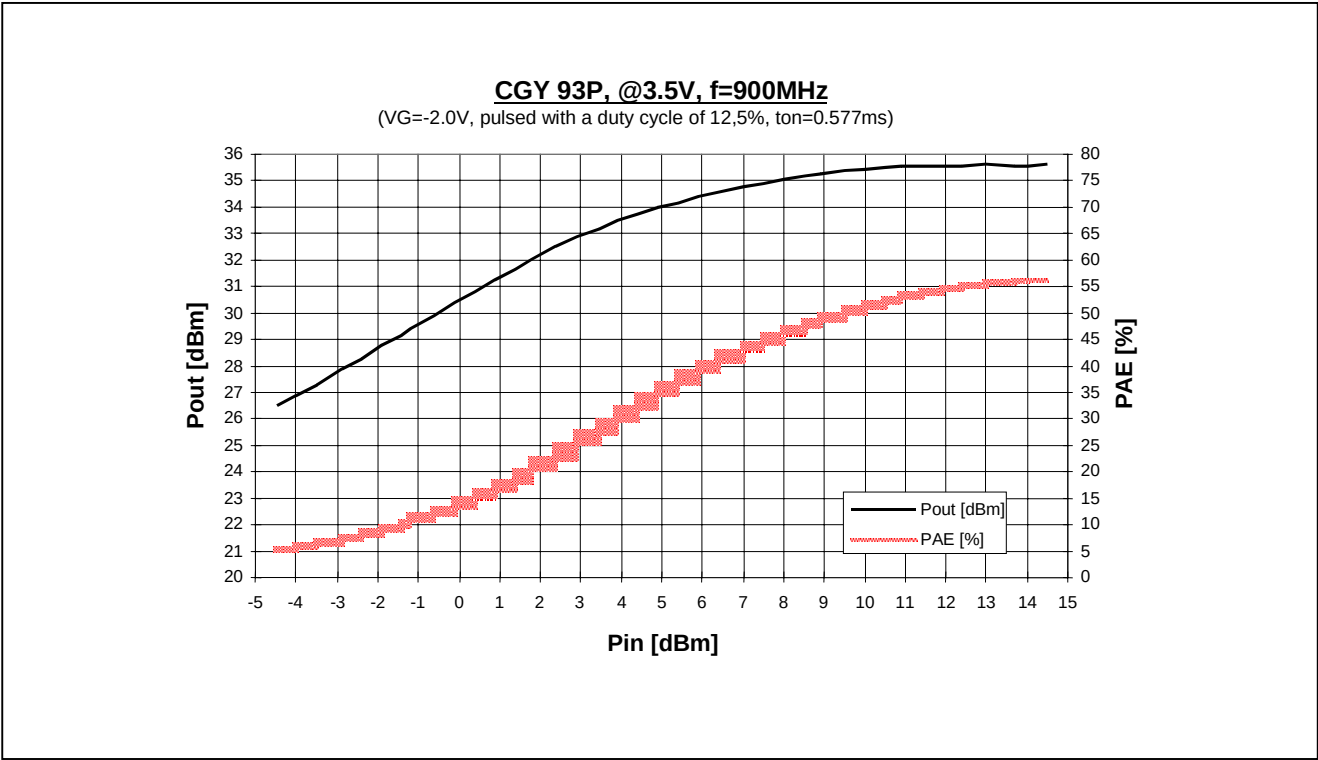
Pin Out:

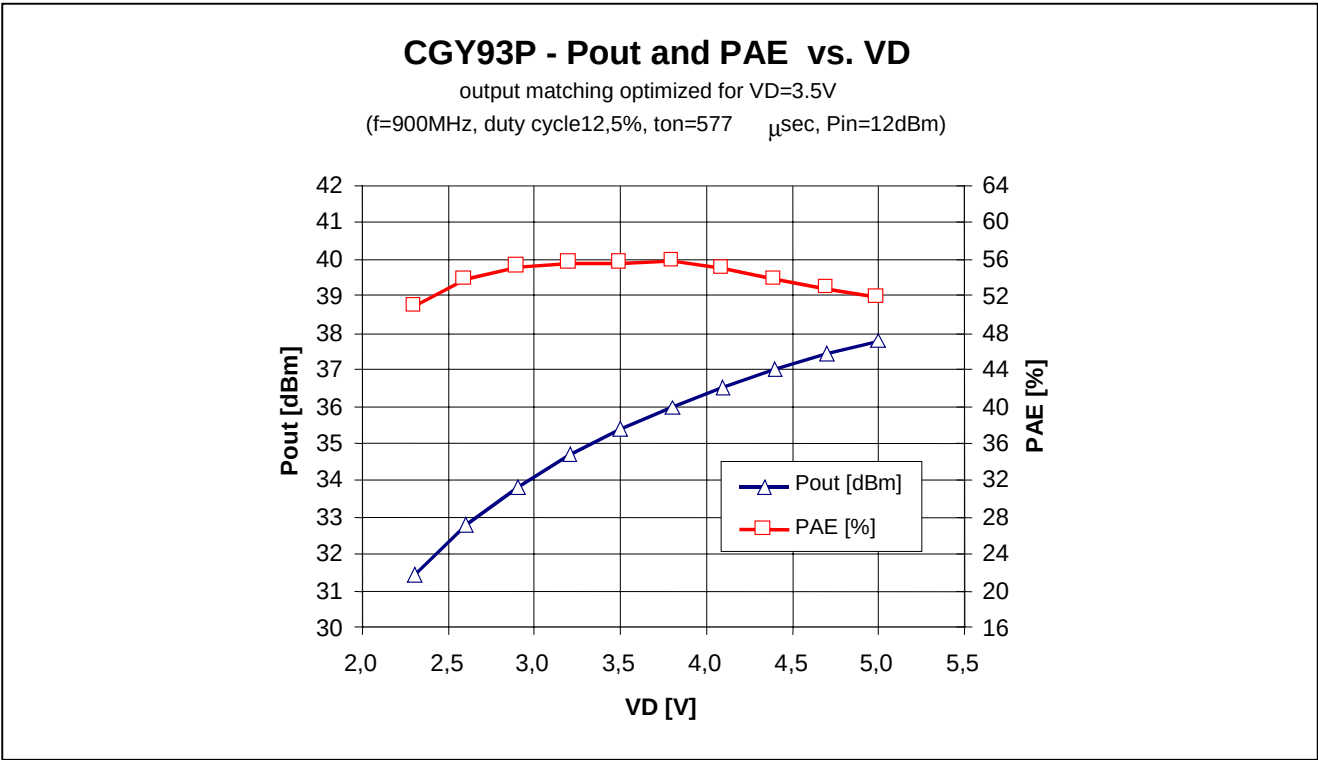
Pin #	Name	Configuration
1	NC	-
2	VG2	Gate voltage strage 2
3	NC	-
4	VD1	Drain Voltage stage 1
5	NC	-
6	NC	-
7	RFin	RF input
8	VG1	Gate Voltage stage 1
9	NC	-
10	NC	-
11	NC	-
12,13,14,15	VD2 / RFout	Drain voltage stage 2 / RF output
16	NC	-
(17)	GND	Ground (backside of MW16 housing)

Electrical characteristics

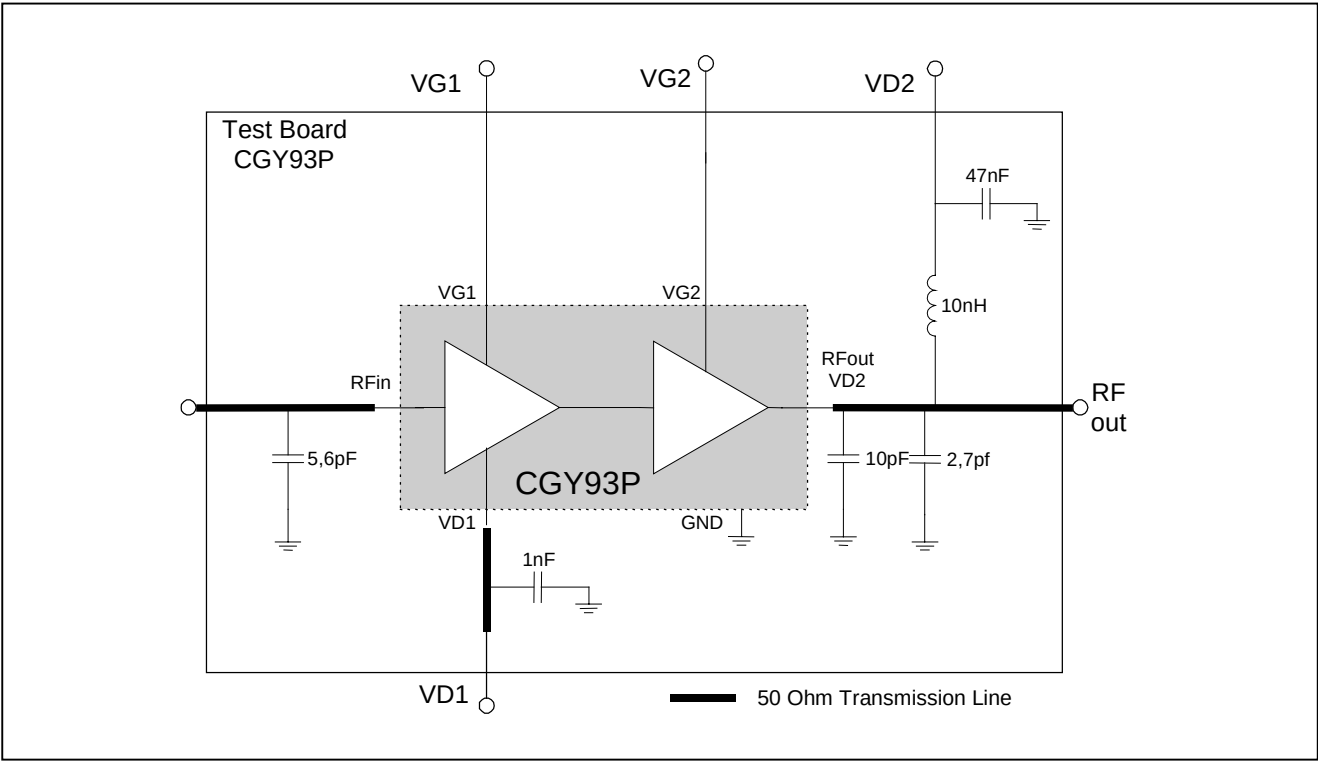
($T_A=25^{\circ}\text{C}$, pulsed with a duty cycle of 12.5%, $t_{\text{on}}=577\mu\text{sec}$)

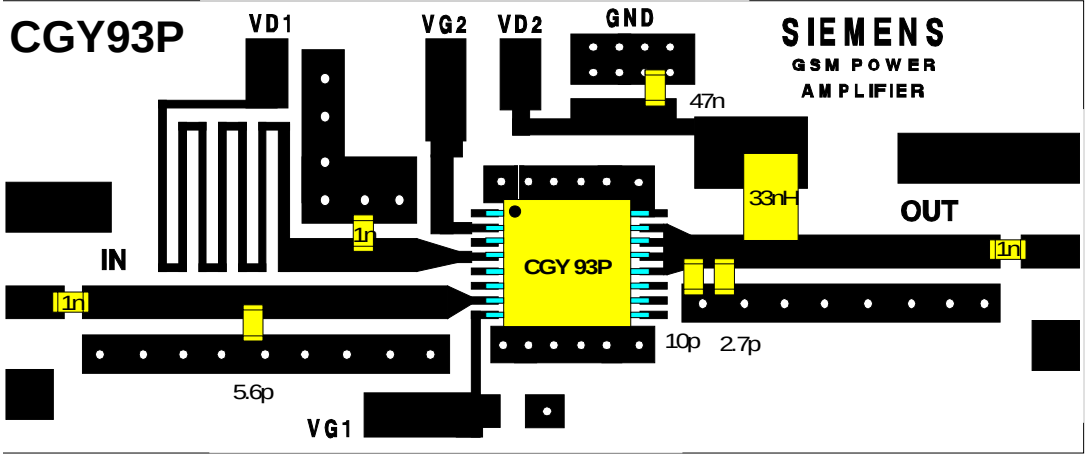
Characteristics	Symbol	min	typ	max	Unit
Frequency range	f	880	-	915	MHz
Supply current with RF $P_{\text{in}}=12\text{dBm}$, $V_D=3.5\text{V}$	I_{DRF}	-	1.8	-	A
Small signal gain $V_D=3.5\text{V}$, $P_{\text{in}}=-10\text{dBm}$	G	29	30.0	-	dB
Power gain $V_D=3.5\text{V}$; $P_{\text{in}}=12\text{dBm}$	G_P	23	23.3	-	dB
Output Power $V_D=2.8\text{V}$; $P_{\text{in}}=12\text{dBm}$	P_{out}	33.0	33.3	-	dBm
Output Power $V_D=3.5\text{V}$; $P_{\text{in}}=12\text{dBm}$	P_{out}	35.0	35.3	-	dBm
Overall Power added Efficiency $V_D=2.8\text{V}$; $P_{\text{in}}=12\text{dBm}$	η	47	53	-	%
Overall Power added Efficiency $V_D=3.5\text{V}$; $P_{\text{in}}=12\text{dBm}$	η	50	55	-	%
Noise Power in RX (935-960MHz) $P_{\text{in}}=12\text{dBm}$, $P_{\text{out}}=33.3\text{dBm}$, 100kHz RBW	N_{RX}	-	-82	-	dBm
Harmonics $V_D=2.8\text{V}$; ($P_{\text{in}}=12\text{dBm}$, $P_{\text{out}}=33.3\text{dBm}$)	$H(2f_0)$ $H(3f_0)$	40 40	43 43	- -	dBc dBc
Stability all spurious outputs < -60dBc, VSWR load, all phase angles		-	10 : 1	-	-
Input VSWR (with external match)		-	2 : 1	2.2 : 1	-

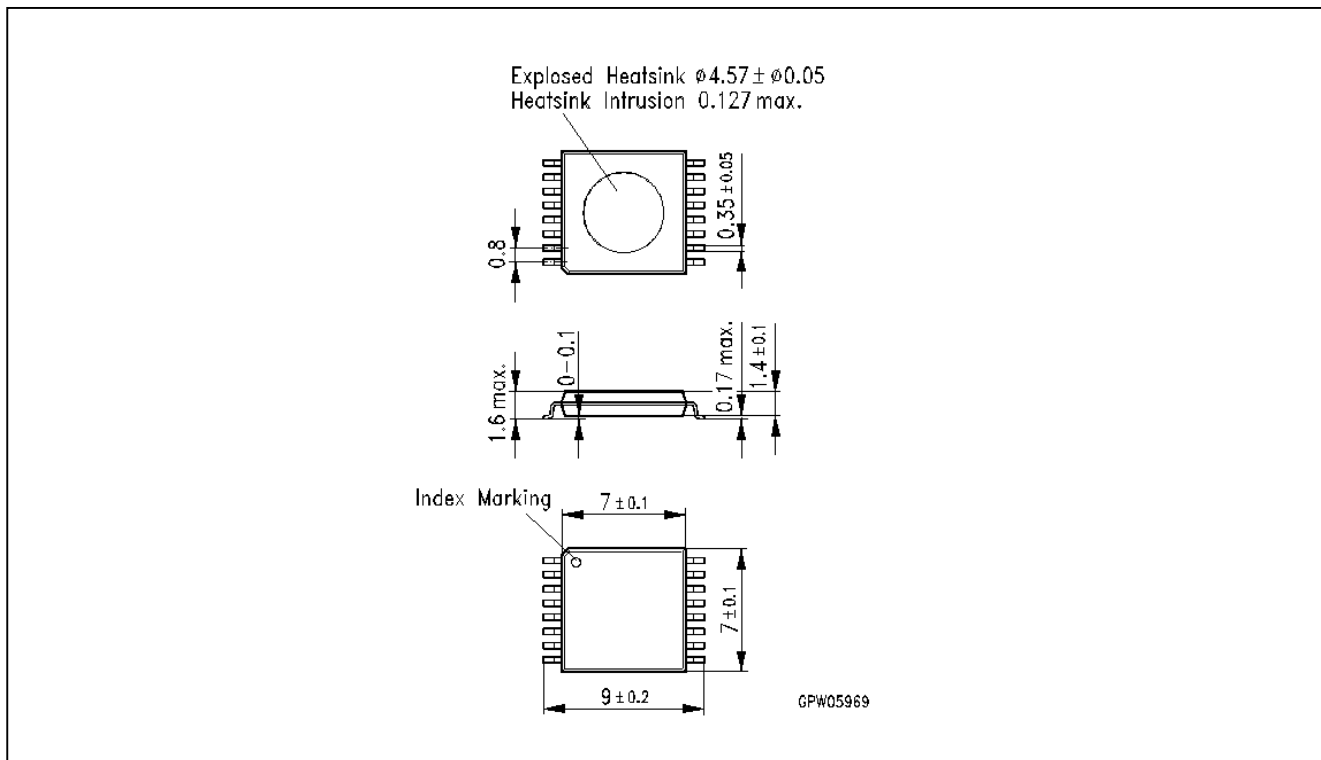




GSM Application Board CGY93P:







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Produkt-Information, Balanstraße 73, D-81541 München

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