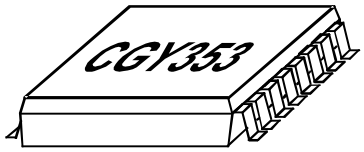
3-stage Power amplifier for 3.5 GHz applications

- linear Output power 31 dBm
- Gain of 21 dB typ.
- Operating voltage 7 V typ.
- unconditionally stable



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

Type	Marking	Ordering code (taped)	Package 1)
CGY353	t.b.d.	t.b.d.	MW16

Maximum ratings

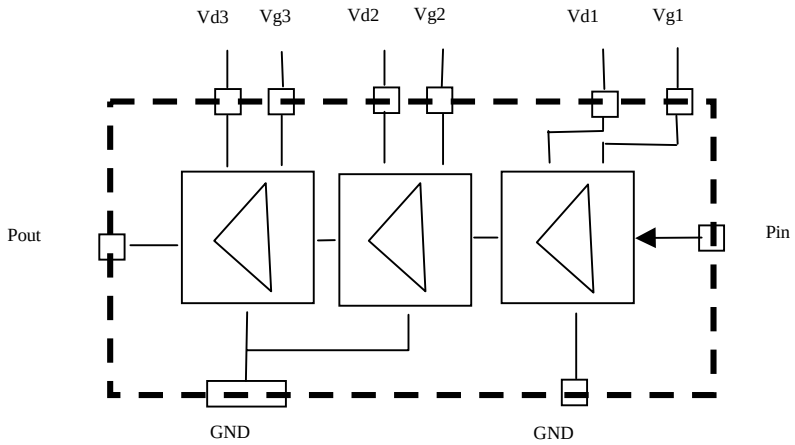
Characteristics	Symbol	max. Value	Unit
Positive supply voltage	V_D	8	V
Supply current	I_D	t.b.d.	A
Maximum input power	*Pinmax*	tbd	dBm
Channel temperature	T_{Ch}	150	°C
Storage temperature	T_{stg}	-55...+150	°C
Total power dissipation *(Ts ≤ 81 °C)* *Ts: Temperature at soldering point*	P_{tot}	t.b.d.	W
Pulse peak power	P_{Pulse}	t.b.d.	W

Thermal Resistance

Channel-soldering point	R_{thChS}	t.b.d.	K/W

This is information on a product that is under development. Data and specificatios are subject to change without notice.

Functional block diagramm:



GND	RF and DC ground
Vg1	Gate voltage stage 1
Vg2	Gate voltage stage 2
Vg3	Gate voltage stage 3
Vd1	Drain voltage stage 1
Vd2	Drain voltage stage 2
Vd3	Drain voltage stage 3

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Electrical characteristics

(conditions: T_A = 25°C , f=3425-3450 MHz, Z_S=Z_L=50 Ohm, pulsed op. mode, duty cycle = 30% , mod. see appendix, unless otherwise specified)

Characteristics	Symbol	min	Typ	max	Unit
Idle current *VD=7V;*	I_{DD}	-	1000	-	mA
Power down current	*Pdown*	-	10	-	mA
Gain *VD=7V; at nominal linear output power**	*G*	-	21	-	dB
Output Power linear* *VD=7V; P_{in} = 10dBm*	P_{out}	-	31	-	dBm
Saturation Output Power *VD=7V; P_{in} = 10dBm*	P_{sat}	-	33	-	dBm
Overall Power added Efficiency *VD=7V; P_{in} = 7dBm*	*PAE*				%
Adjacent channel power +-156kHz to carrier	*ACP*			-30	dBc
Input return loss	*Rlin*	10			dB
Noise Figure	*NF*		5		dB

*)

Modulation: p/4 DQPSK with an alpha = 0.4 root raised cosine filtered

Symbol rate: 256 ksymbols/sec

Transmission burst: Each burst has a 500µsec nominal duration with 20dB of raised cosine shaping of 8 µsec duration at the beginning and the end of the burst. A maximum of three bursts occur in each 5msec period, but consecutive bursts are separated by a minimum interval of 1 msec.

Duty cycle: 30%, 3 bursts per 5msec frame with a minimum interval of 1 msec between bursts

The modulation signal has a peak to mean envelope ratio of 3.1dB.

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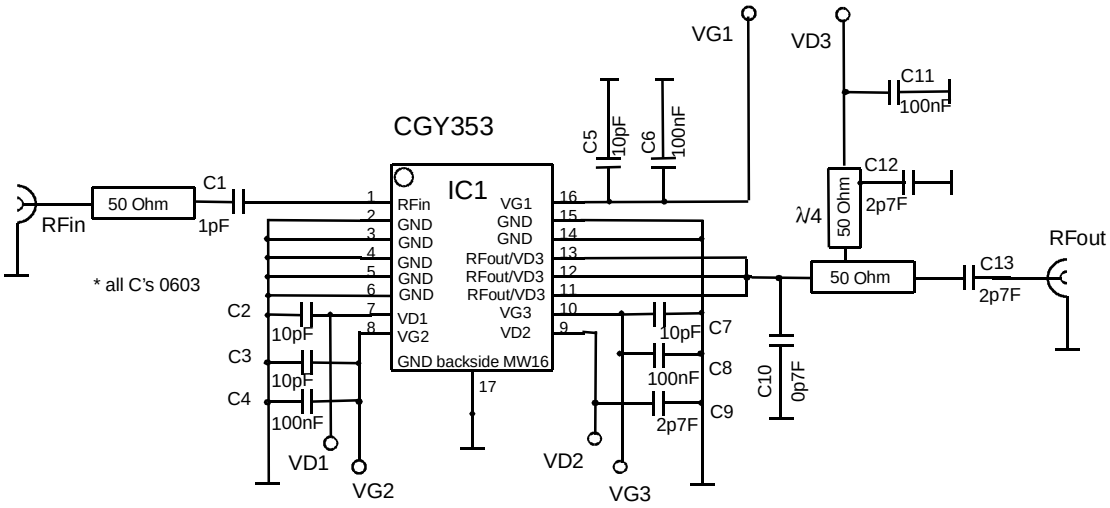
Application Circuit



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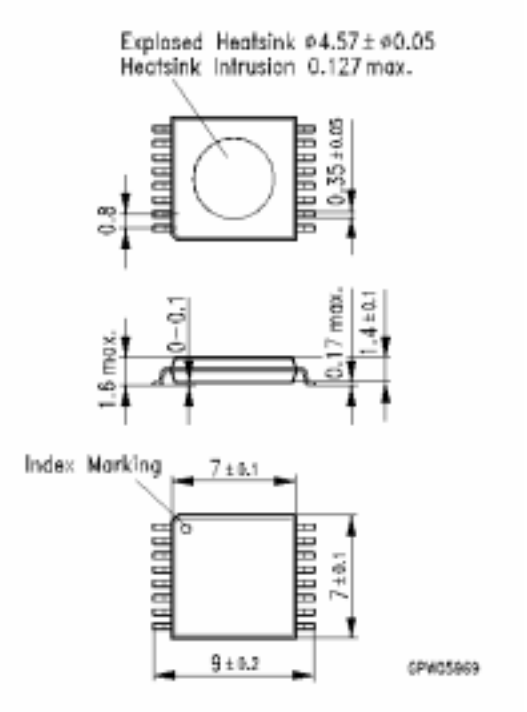
Package outline



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