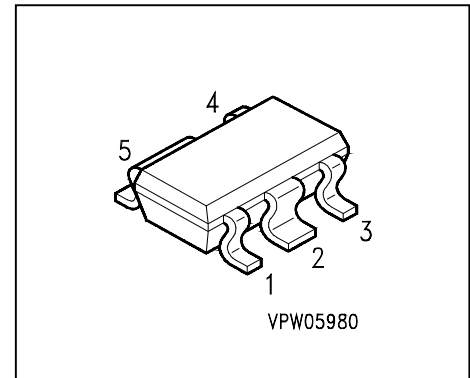


GaAs MMIC

- Broadband Power Amplifier [800..2000 Mhz]
- GSM, AMPS or PCN
- Operating voltage range: 2.7 to 5.0 V
- Pout = 35.0dBm at Vd=3.5V
- Overall power added efficiency 55 %
- Easy external matching

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



Type	Marking	Ordering code (taped)	Package
CGY98	t.b.d.	t.b.d.	SCT595

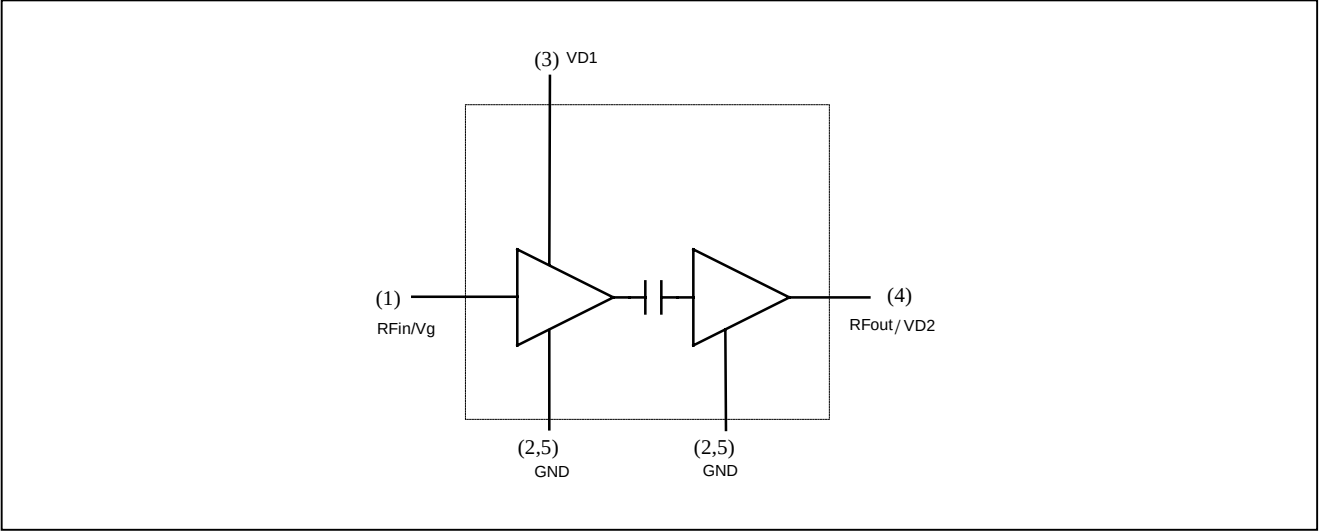
Maximum ratings

Characteristics	Symbol	max. Value	Unit
Positive supply voltage	V_D	6	V
Supply current stage 1	I_D	0.6	A
Supply current stage 2	I_D	1.8	A
Channel temperature	T_{Ch}	150	°C
Storage temperature	T_{stg}	-55...+150	°C
Total power dissipation ($T_s \leq 81\text{ °C}$) <i>T_s: Temperature at soldering point</i>	P_{tot}	2.0	W
Pulse peak power	P_{Pulse}	4.0	W

Thermal Resistance

Characteristics	Symbol	max. Value	Unit
Channel-soldering point	R_{thChS}	35	K/W

Functional Block Diagram



Pin #		Configuration
1	RFin/VG	RF input power + Gate voltage
2	GND	RF and DC ground
3	VD1	Pos. drain voltage 1st stage
4	RFout/VD2	RF output power / Pos. drain voltage 2nd stage
5	GND	RF and DC ground

GSM-Operation

Electrical characteristics [Inside Application: PCB-Layout t.b.d.]

($T_A = 25^\circ\text{C}$, $Z_S = Z_L = 50\ \Omega$, duty cycle 12.5%, $t_{on} = 577\ \mu\text{s}$ unless otherwise specified)

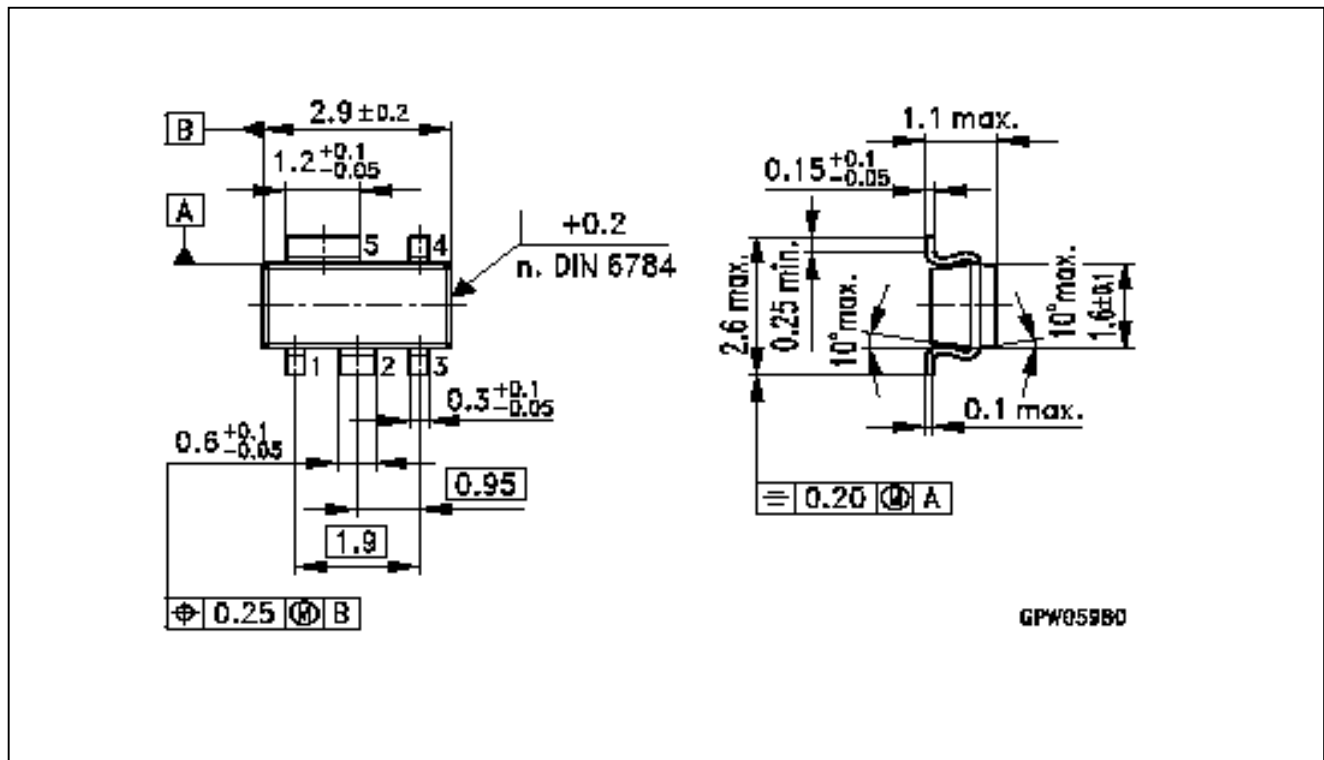
Characteristics	Symbol	min	typ	max	Unit
Frequency range	f	880	-	915	MHz
Supply current $V_D = 3.5\text{V}$; $P_{in} = +12\ \text{dBm}$	I_{DD}	-	1.6	-	A
Power Gain $V_D = 3.5\text{V}$; $P_{in} = +12\ \text{dBm}$	G		23		dB
Output Power $V_D = 3.5\text{V}$; $P_{in} = +12\ \text{dBm}$	P_O		35.0		dBm
Overall Power added Efficiency $V_D = 3.5\text{V}$; $P_{in} = +12\ \text{dBm}$	PAE		55	-	%
Harmonics	$2f_0$	-	-	-42	dBc
	$3f_0$	-	-	-42	
Input VSWR $V_D = 3.5\text{V}$ or $V_d = 4.8\text{V}$	-	-	2 : 1	-	-
Load mismatch $P_{in} = 10\text{dBm}$, $V_D \leq 4.6\text{V}$, $Z_S = 50\ \Omega$, Load VSWR = 20:1 for all phase,		No module damage for 10 sec.			
Stability $P_{in} = 10\text{dBm}$, $V_D = 4.6\text{V}$, $Z_S = 50\ \Omega$, Load VSWR = 3:1 for all phase		All spurious output more than 70 dB below desired signal level			

PCN(DCS1800)-Operation

Electrical characteristics [Inside Application: PCB-Layout t.b.d.]

($T_A = 25^\circ\text{C}$, $Z_S = Z_L = 50\ \Omega$, duty cycle 12.5%, $t_{on} = 577\ \mu\text{s}$ unless otherwise specified)

Characteristics	Symbol	min	typ	max	Unit
Frequency range	f	1710		1785	MHz
Supply current $V_D = 3.5\text{V}$; $P_{in} = +15\ \text{dBm}$	I_{DD}	-	1.6	-	A
Power Gain $V_D = 3.5\text{V}$; $P_{in} = +15\ \text{dBm}$	G		19		dB
Output Power $V_D = 3.5\text{V}$; $P_{in} = +15\ \text{dBm}$	P_O		34.0		dBm
Overall Power added Efficiency $V_D = 3.5\text{V}$; $P_{in} = +15\ \text{dBm}$	PAE		45	-	%
Harmonics					
$2f_0$	-	-	-42	-	dBc
$3f_0$	-	-	-42	-	
Input VSWR $V_D = 3.5\text{V}$ or $V_D = 4.8\text{V}$	-	-	2 : 1	-	-
Load mismatch $P_{in} = 10\ \text{dBm}$, $V_D \leq 4.6\text{V}$, $Z_S = 50\ \Omega$, Load VSWR = 20:1 for all phase,		No module damage for 10 sec.			
Stability $P_{in} = 10\ \text{dBm}$, $V_D = 4.6\text{V}$, $Z_S = 50\ \Omega$, Load VSWR = 3:1 for all phase		All spurious output more than 70 dB below desired signal level			



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