

SILICON MOS N-CHANNEL RF POWER TRANSISTOR 10 W, up to 500 MHz, Enhancement Mode

KP981BC

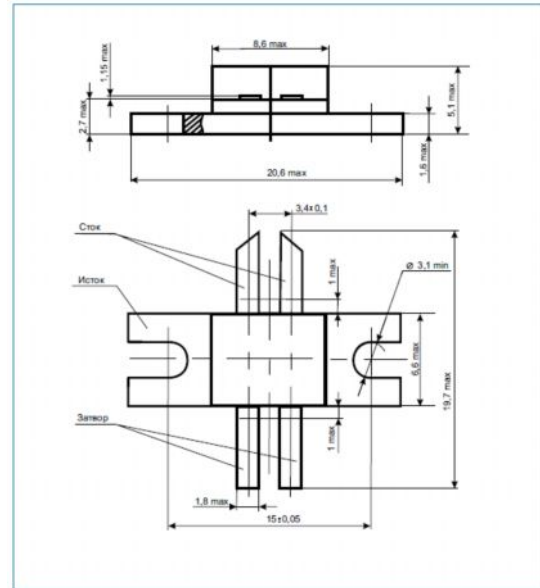
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

Features:

- Performance at 500 MHz, 12.5 Vdc
- Power Gain: 10 dB Min
- Output Power: 10 W
- Efficiency: 50 % Min

Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	V_{DSS}	40	V_{DC}
Drain Current-Continuous	I_D	3.0	A_{DC}
Gate-Source Voltage	V_{GS}	± 20	V_{DC}
Storage Temperature Range	T_{STG}	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	2.4	$^{\circ}C/W$
Total Power Dissipation @ $T_C=25^{\circ}C$	P_D	73	W



Case KT-81

Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ($I_D=5.0$ mA, $V_{GS}=0$ V)	$V_{(BR)DSS}$	40	—	—	V_{DC}
Gate-Source Leakage Current ($V_{GS}=20$ V, $V_{DS}=0$ V)	I_{GSS}	—	—	1.0	μA_{DC}
Zero Gate Voltage Drain Leakage Current ($V_{DS} = 12.5$ V, $V_{GS}=0$ V)	I_{DSS}	—	—	2.0	mA_{DC}
Gate Threshold Voltage ($V_{DS} = 10$ V, $I_D = 20$ mA) (1)	$V_{GS(TH)}$	1	—	5	V_{DC}
Forward Transconductance ($V_{DS} = 10$ V, $I_D = 0.7$ A) (1)	G_{FS}	0.33	0.4	—	mhos
Input Capacitance ($V_{DS} = 12.5$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{ISS}	—	23	—	pF
Output Capacitance ($V_{DS} = 12.5$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{OSS}	—	33	—	pF
Reverse Transfer Capacitance ($V_{DS} = 12.5$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	C_{RSS}	—	3.5	—	pF
Power Gain ($V_{DS} = 12.5$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	G_p	10	12	—	dB
Drain Efficiency ($V_{DS} = 12.5$ V, $P_{OUT} = 10$ W, $I_{DQ} = 50$ mA, $f = 500$ MHz)	η_D	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice