

## SILICON MOS N-CHANNEL RF POWER TRANSISTOR 40 W, up to 500 MHz, Enhancement Mode

# KP978GC

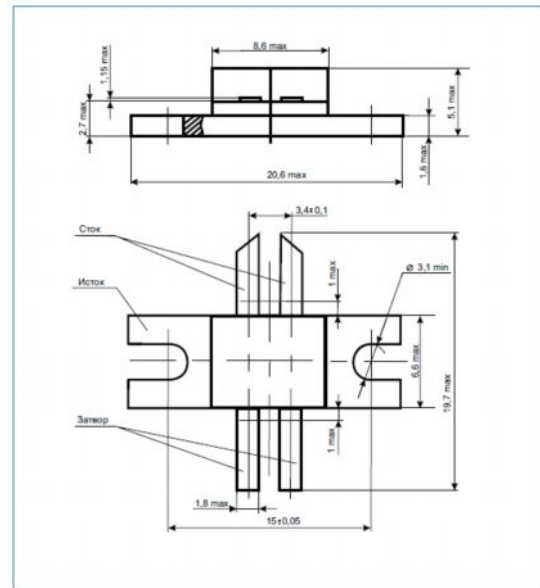
Designed primarily for wideband large-signal output and driver from 30–500 MHz.

### Features:

- Performance at 500 MHz, 28 Vdc
- Power Gain: 12 dB Min
- Output Power: 40 W
- Efficiency: 50 % Min

### Absolute Maximum Ratings

Parameters	Sym	Value	Unit
Drain-Source Voltage	$V_{DSS}$	65	$V_{DC}$
Drain Current-Continuous	$I_D$	12.0	$A_{DC}$
Gate-Source Voltage	$V_{GS}$	$\pm 20$	$V_{DC}$
Storage Temperature Range	$T_{STG}$	-65 to +150	$^{\circ}C$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	1.2	$^{\circ}C/W$
Total Power Dissipation @ $T_C=25^{\circ}C$	$P_D$	146	W



Case KT-81

### Parameters

Parameter	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage ( $I_D=10.0$ mA, $V_{GS}=0$ V)	$V_{(BR)DSS}$	65	—	—	$V_{DC}$
Gate-Source Leakage Current ( $V_{GS}=20$ V, $V_{DS}=0$ V)	$I_{GSS}$	—	—	1.0	$\mu A_{DC}$
Zero Gate Voltage Drain Leakage Current ( $V_{DS} = 28$ V, $V_{GS}=0$ V)	$I_{DSS}$	—	—	5.0	$mA_{DC}$
Gate Threshold Voltage ( $V_{DS} = 10$ V, $I_D = 50$ mA) (1)	$V_{GS(TH)}$	1	—	5	$V_{DC}$
Forward Transconductance ( $V_{DS} = 10$ V, $I_D = 1.0$ A) (1)	$G_{FS}$	0.35	0.5	—	mhos
Input Capacitance ( $V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	$C_{ISS}$	—	55	—	pF
Output Capacitance ( $V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	$C_{OSS}$	—	50	—	pF
Reverse Transfer Capacitance ( $V_{DS} = 28$ V, $V_{GS}=0$ V, $f = 1$ MHz) (1)	$C_{RSS}$	—	6	—	pF
Power Gain ( $V_{DS} = 28$ V, $P_{OUT} = 40$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	$G_p$	12	13	—	dB
Drain Efficiency ( $V_{DS} = 28$ V, $P_{OUT} = 40$ W, $I_{DQ} = 100$ mA, $f = 500$ MHz)	$\eta_D$	50	55	—	%

(1) Each transistor chip measured separately.

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Specification is subject to change without notice