2SK690

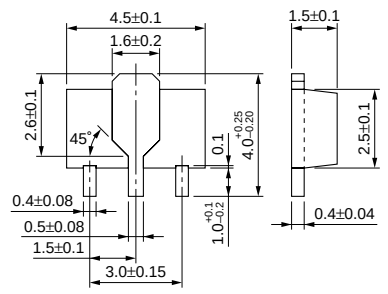
GaAs N-Channel MES

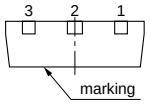
For UHF medium-output power amplification

■ Features

- Large collector dissipation P_C
- Downsizing of sets by mini power package and automatic insertion by magazine packing are available.

Unit : mm





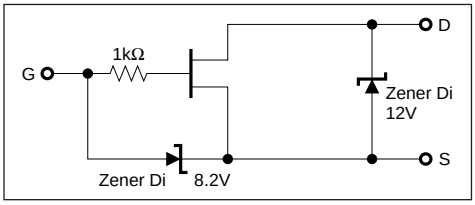
1 : Gate
2 : Source
3 : Drain
EIAJ : SC-62
Mini-Power Type Package (3-pin)

■ Absolute Maximum Ratings (Ta = 25˚C)

Parameter	Symbol	Rating	Unit
Drain-Source voltage	V_{DS}	10	V
Gate-Source voltage	V_{GS}	– 6	V
Drain current	I_D	0.6	A
Gate current	I_G	1	mA
Allowable power dissipation	P_D *	1	W
Channel temperature	T_{ch}	150	˚C
Storage temperature	T_{stg}	– 55 to +150	˚C
Operating ambient temperature	T_{opr}	– 35 to + 85	˚C

* PC board : Copper foil area of drain portion shoud be $1cm^2$ or more, thickness 1.7mm.

■ Internal Connection



■ Electrical Characteristics (Ta = 25˚C)

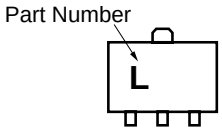
Parameter	Symbol	Condition	Min	Typ	Max	Unit
Drain current	I_{DD} *1, *2	V_{DS}= 5V, V_{GS}= 0V	150	350	600	mA
Drain cut-off current	I_{DSX}	V_{DS}=10V, V_{GS}= – 6V			2	mA
Gate-Source leakage current	I_{GSS}	V_{DS}= 0V, V_{GS}= – 6V			50	µA
Gate-Drain current	I_{GDO}	V_{DS}=16V			500	µA
Gate-Source cut-off voltage	V_{GSC}	V_{DS}= 5V, I_{DS}=1mA			– 6	V
Forward transadmittance	$\lvert Y_{fs} \rvert$	V_{DS}= 5V, I_{DS}= 50mA, f=1kHz	90	150		mS
Output power	P_{out}	V_{DS}= 6V, I_{DS}=100mA f= 940MHz, P_{in}=10dBm	20	25		dBm
Voltage gain	PG		10	15		dB
Additional efficiency	η_{add}			51		%

*1 I_{DSS} rank classification

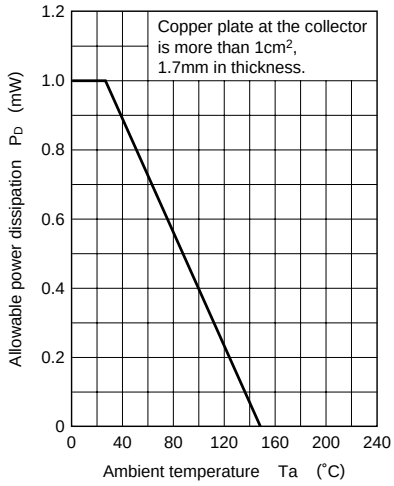
Rank	P	Q	R
I_{DSS}(mA)	150 to 280	220 to 380	320 to 600

*2 Pulse measurement

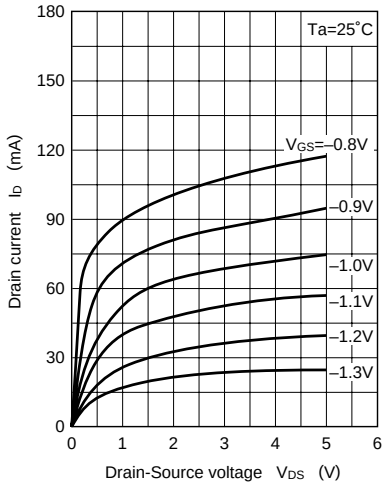
■ Marking



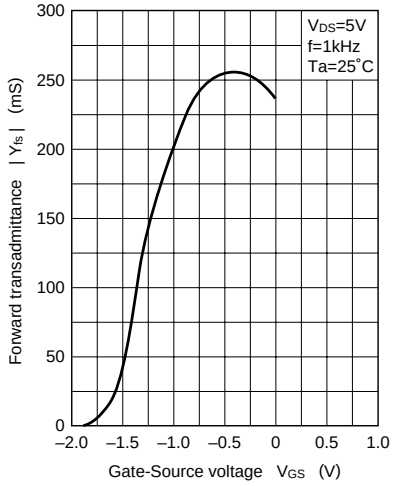
$P_D - Ta$



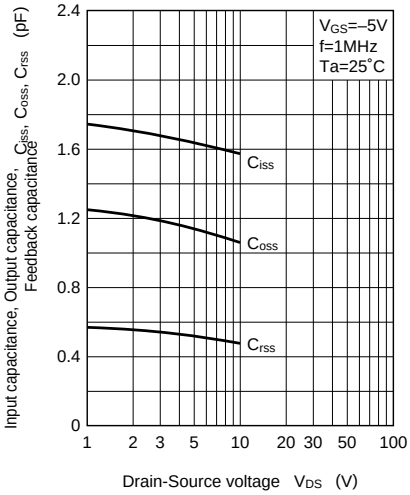
$I_D - V_{DS}$



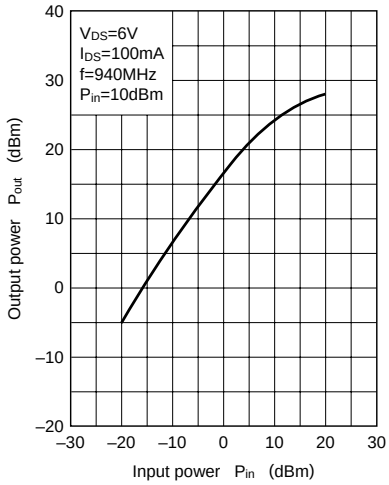
$g_m - V_{GS}$



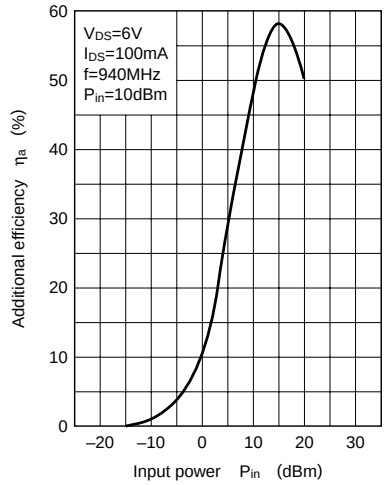
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



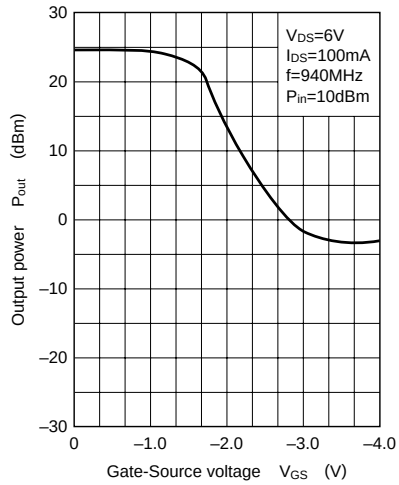
$P_{out} - P_{in}$



$\eta_a - P_{in}$



$P_{out} - V_{GS}$



$\eta_a - V_{GS}$