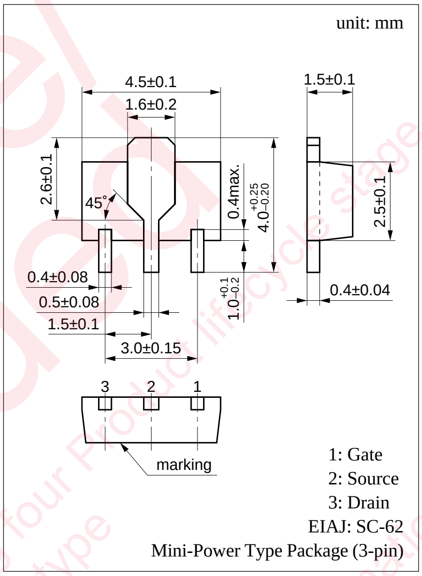
2SK690

GaAs N-Channel MES FET

For UHF medium output power amplification

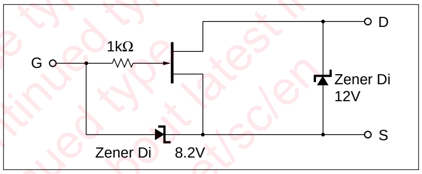


■ Features

- Large collector dissipation P_C
- Mini-power type package, allowing downsizing of the sets and automatic insertion through the tape/magazine packing.

Marking Symbol: M

Internal Connection



■ Absolute Maximum Ratings (Ta = 25°C)

Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DS}	10	V
Gate to 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 of the drain portion should have a area of 1cm^2 or more and the board thickness should be 1.7mm.

■ Electrical Characteristics (Ta = 25°C)

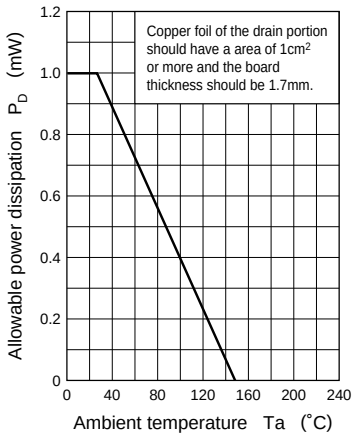
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain current	I_{DD}*1, 2	V_{DS} = 5V, V_{GS} = 0	150	350	600	mA
Drain cut-off current	I_{DSX}	V_{DS} = 10V, V_{GS} = –6V			2	mA
Gate to Source leakage current	I_{GSS}	V_{DS} = 0, V_{GS} = –6V			50	µA
Gate to Drain current	I_{GDO}	V_{DS} = 16V			500	µA
Gate to Source cut-off voltage	V_{GSC}	V_{DS} = 5V, I_{DS} = 1mA			–6	V
Forward transfer admittance	$\vert Y_{fs} \vert$	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
Power gain	PG		10	15		dB
Additional efficiency	η_{add}			51		%

*1 I_{DSS} rank classification

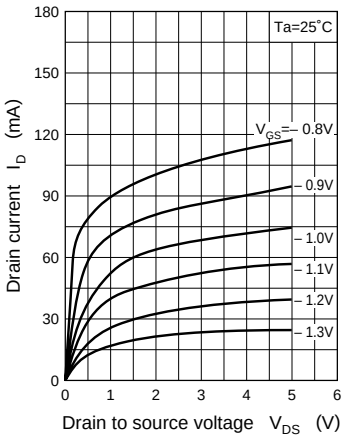
Rank	P	Q	R
I_{DSS} (mA)	150 to 280	220 to 380	320 to 600

*2 Pulse measurement

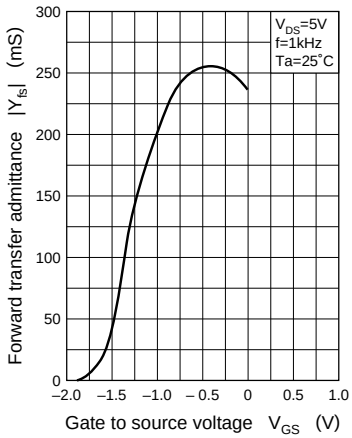
P_D — Ta



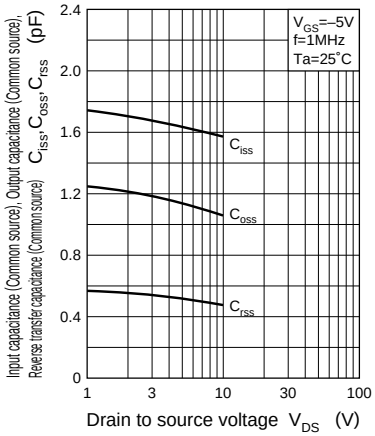
I_D — V_{DS}



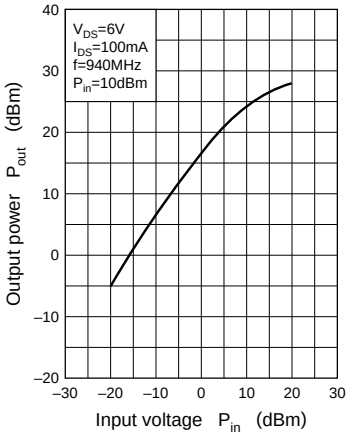
$|Y_{fs}|$ — V_{GS}



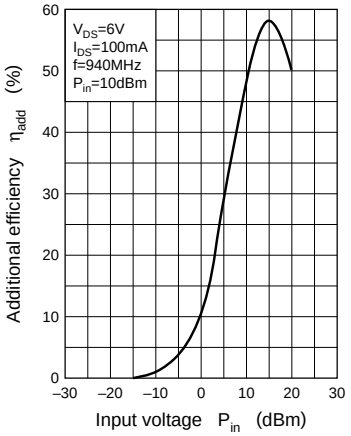
C_{iss}, C_{oss}, C_{rss} — V_{DS}



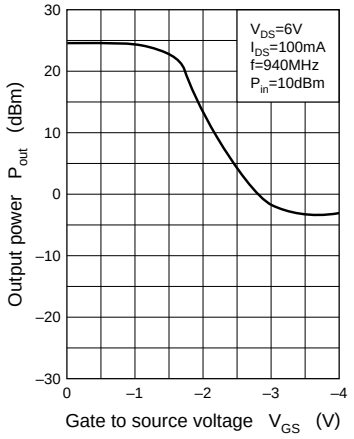
P_{out} — P_{in}



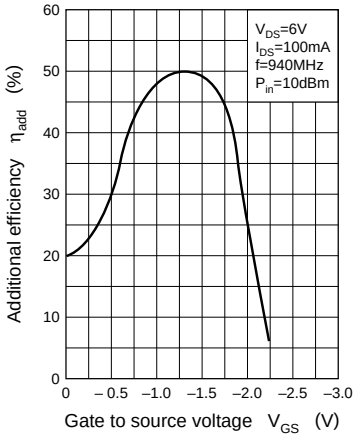
η_{add} — P_{in}



P_{out} — V_{GS}



η_{add} — V_{GS}



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