

2SK690

GaAs N-Channel MES FET

For UHF medium output power amplification

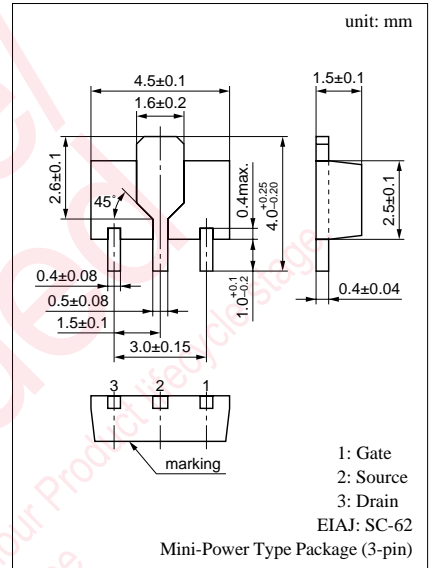
■ Features

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

■ Absolute Maximum Ratings ($T_a = 25^\circ\text{C}$)

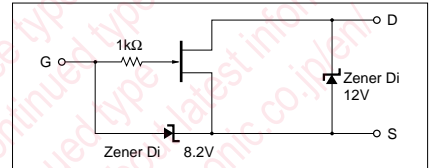
Parameter	Symbol	Ratings	Unit
Drain to Source voltage	V_{DS}	10	V
Gate to Source voltage	V_{GS}	-6	V
Drain current	I_D	0.6	A
Gate current	I_G	1	mA
Allowable power dissipation	P_D^*	1	W
Channel temperature	T_{ch}	150	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$
Operating ambient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

* PC board: Copper foil of the drain portion should have an area of 1cm^2 or more and the board thickness should be 1.7mm.



Marking Symbol: M

Internal Connection



■ Electrical Characteristics ($T_a = 25^\circ\text{C}$)

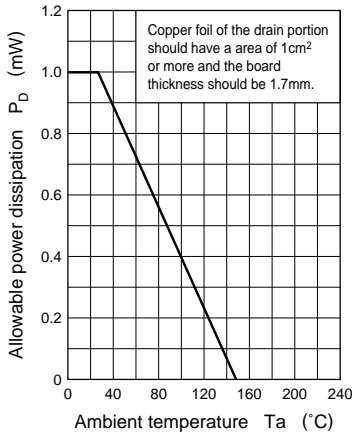
Parameter	Symbol	Conditions	min	typ	max	Unit
Drain current	$I_{DD}^{*1,2}$	$V_{DS} = 5V, V_{GS} = 0$	150	350	600	mA
Drain cut-off current	I_{DSX}	$V_{DS} = 10V, V_{GS} = -6V$			2	mA
Gate to Source leakage current	I_{GSS}	$V_{DS} = 0, V_{GS} = -6V$			50	μA
Gate to Drain current	I_{GDO}	$V_{DS} = 16V$			500	μA
Gate to Source cut-off voltage	V_{GSC}	$V_{DS} = 5V, I_{DS} = 1\text{mA}$			-6	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 5V, I_{DS} = 50\text{mA}, f = 1\text{kHz}$	90	150		ms
Output power	P_{out}	$V_{DS} = 6V, I_{DS} = 100\text{mA}$ $f = 940\text{MHz}, P_{in} = 10\text{dBm}$	20	25		dBm
Power gain	PG		10	15		dB
Additional efficiency	η_{add}			51		%

*1 I_{DSS} rank classification

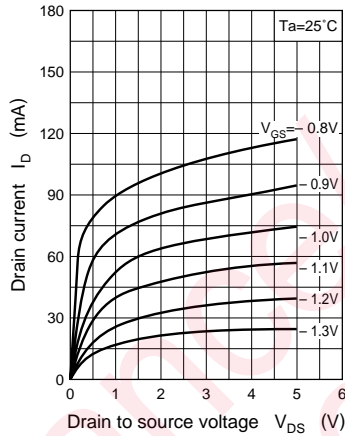
Rank	P	Q	R
I_{DSS} (mA)	150 to 280	220 to 380	320 to 600

*2 Pulse measurement

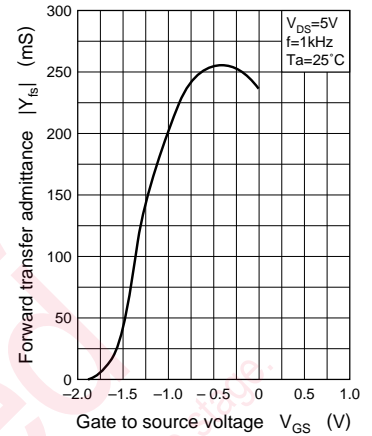
$P_D - T_a$



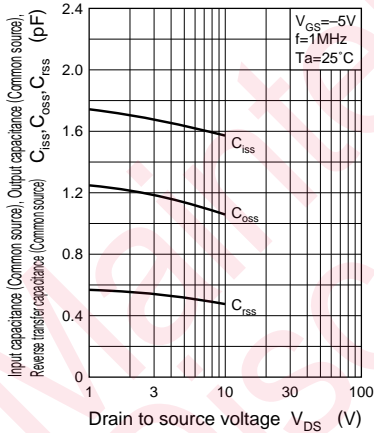
$I_D - V_{DS}$



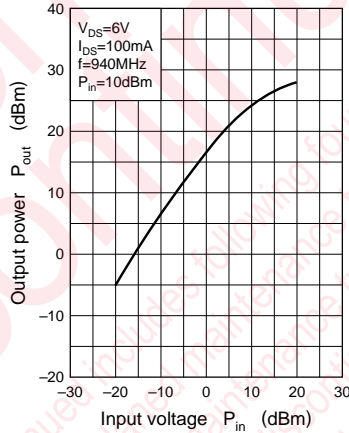
$|Y_{fs}| - V_{GS}$



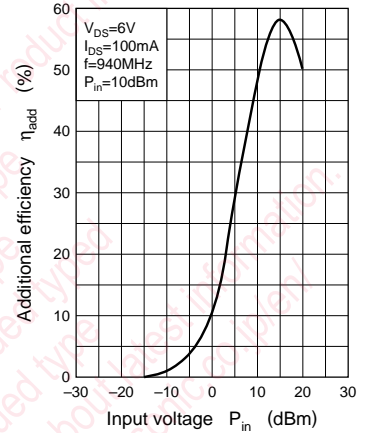
$C_{iss}, C_{oss}, C_{rss} - V_{DS}$



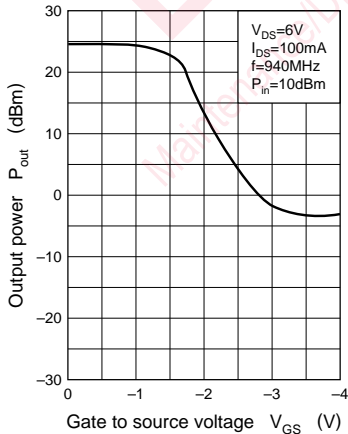
$P_{out} - P_{in}$



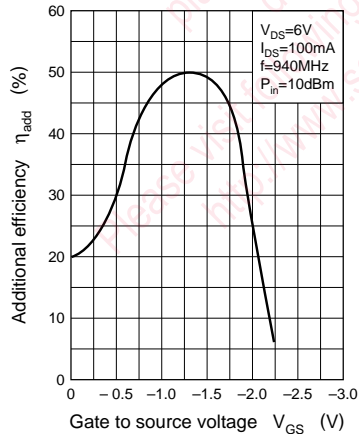
$\eta_{add} - P_{in}$



$P_{out} - V_{GS}$



$\eta_{add} - V_{GS}$



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