

TOSHIBA Field Effect Transistor GaAs N-Channel Dual Gate MES Type

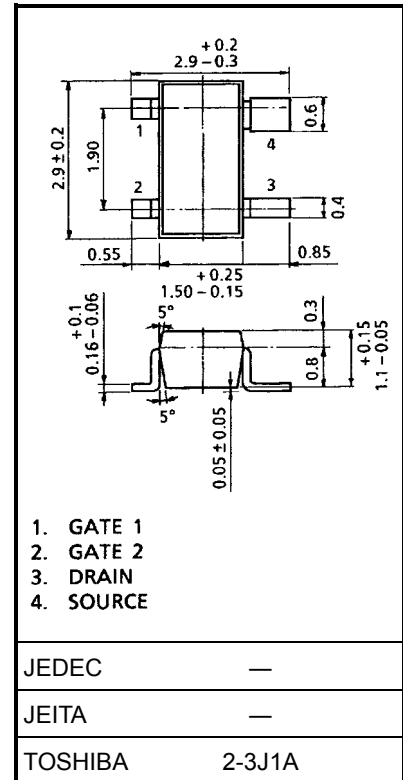
# 3SK240

TV Tuner, UHF RF Amplifier Applications

Unit: mm

## Maximum Ratings (Ta = 25°C)

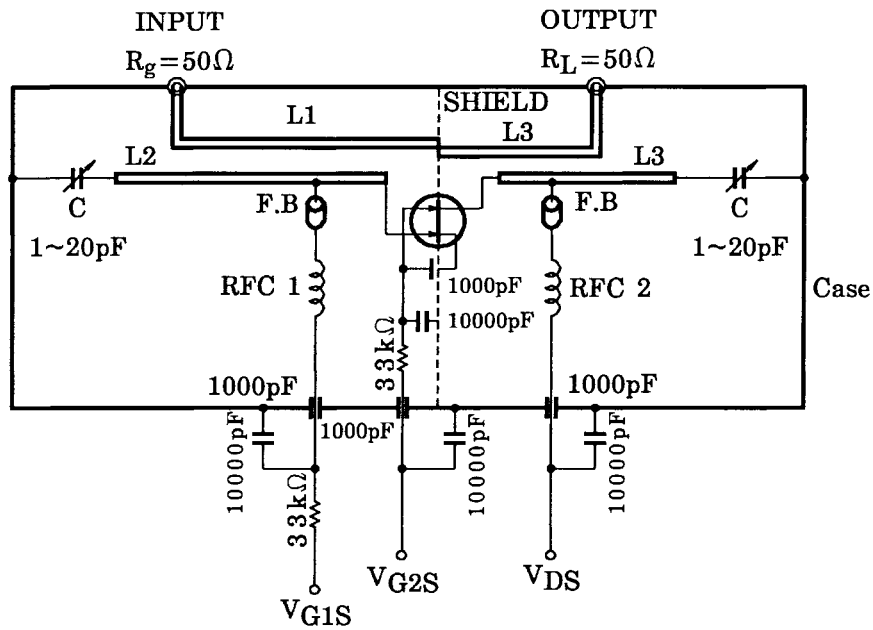
Characteristics	Symbol	Rating	Unit
Gate 1-drain voltage	$V_{G1D0}$	-9	V
Gate 2-drain voltage	$V_{G2D0}$	-9	V
Gate 1-source voltage	$V_{G1S}$	-4	V
Gate 2-source voltage	$V_{G2S}$	-4	V
Gate 1 current	$I_{G1}$	1	mA
Gate 2 current	$I_{G2}$	1	mA
Power dissipation	$P_D$	150	mW
Channel temperature	$T_{ch}$	125	°C
Storage temperature range	$T_{stg}$	-55~125	°C



## Electrical Characteristics (Ta = 25°C)

Weight: 0.013 g (typ.)

Characteristics	Symbol	Test Condition	Min	Typ.	Max	Unit
Gate 1 leakage current	$I_{G1SS}$	$V_{DS} = 0, V_{G1S} = -3 V, V_{G2S} = 0$	—	—	-4	$\mu A$
Gate 2 leakage current	$I_{G2SS}$	$V_{DS} = 0, V_{G1S} = 0, V_{G2S} = -3 V$	—	—	-4	$\mu A$
Drain current	$I_{DSS}$	$V_{DS} = 3 V, V_{G1S} = 0, V_{G2S} = 0$	6	—	20	mA
Gate 1-source cut-off voltage	$V_{G1S(OFF)}$	$V_{DS} = 3 V, V_{G2S} = 0, I_D = 100 \mu A$	-0.7	—	-1.8	V
Gate 2-source cut-off voltage	$V_{G2S(OFF)}$	$V_{DS} = 3 V, V_{G1S} = 0, I_D = 100 \mu A$	-0.7	—	-1.8	V
Forward transfer admittance	$ Y_{fs} $	$V_{DS} = 3 V, V_{G2S} = 1 V, I_D = 5 mA$ $f = 1 kHz$	—	19	—	mS
Input capacitance	$C_{iss}$	$V_{DS} = 3 V, V_{G2S} = 1 V, I_D = 5 mA$	—	0.6	1.4	pF
Reverse transfer capacitance	$C_{rss}$	$f = 1 kHz$	—	0.013	0.030	pF
Power gain	$G_{ps}$	$V_{DS} = 3 V, V_{G2S} = 1 V, I_D = 5 mA$	17	20.5	—	dB
Noise figure	NF	$f = 800 MHz$ (Figure 1)	—	1.0	2.0	dB



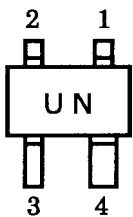
- L1~L4:  $\phi$ 1.0 mm silver plated copper wire
- C: Air trimmer TTA25A200A (MURATA Manufacturing. Co., Ltd.)
- RFC 1:  $\phi$ 0.35 mm copper wire 3 mm ID, 7 T
- RFC 2:  $\phi$ 0.35 mm copper wire 3 mm ID, 10 T

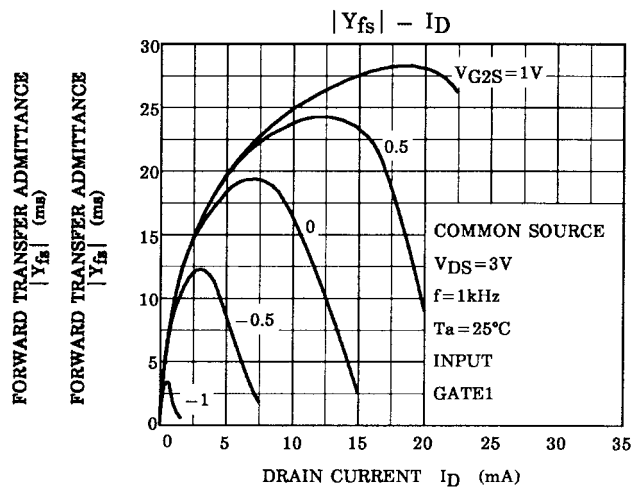
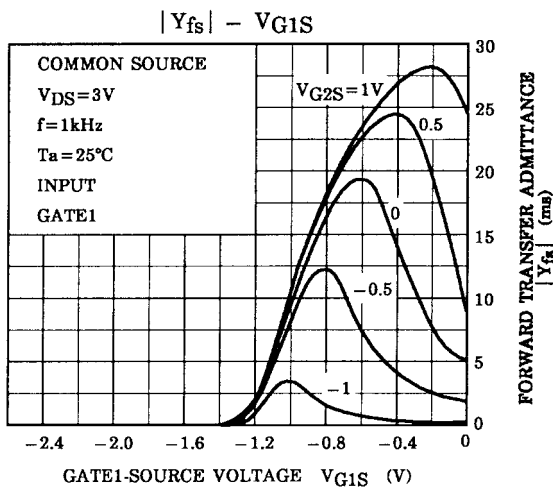
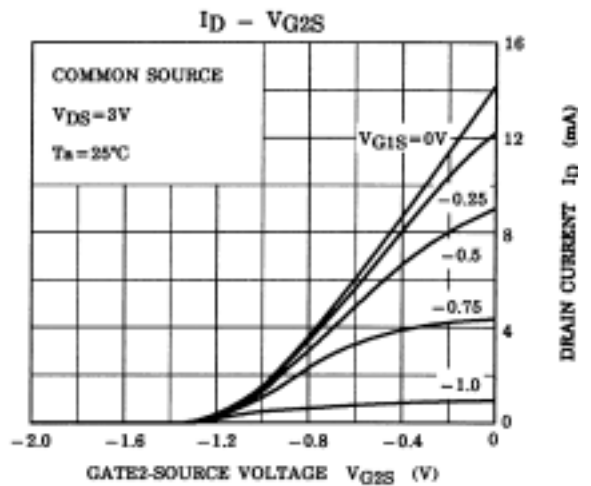
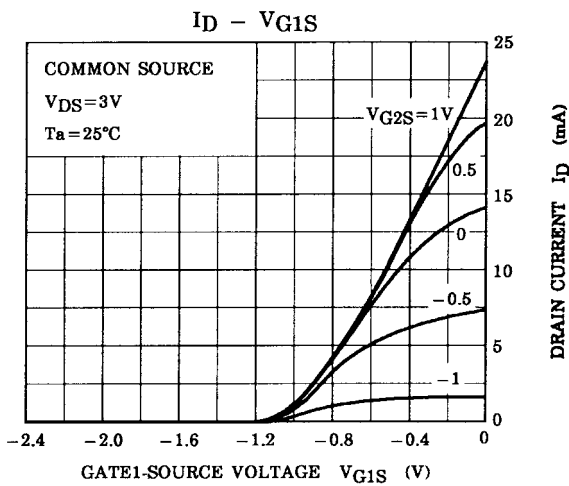
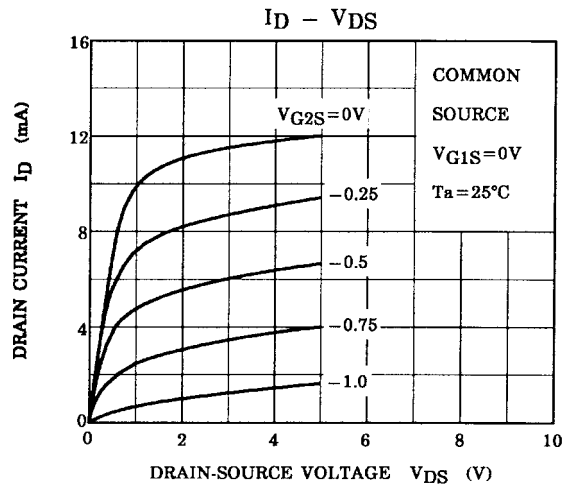
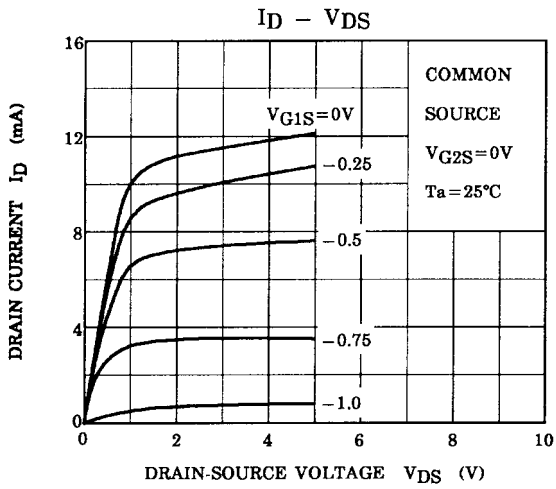
**Figure 1 800 MHz Gps, NF Test Circuit**

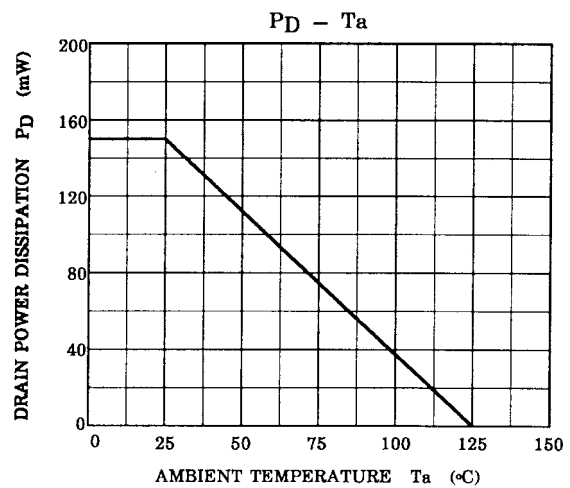
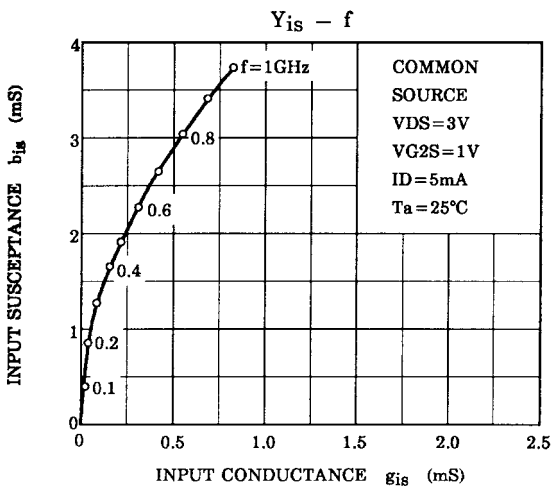
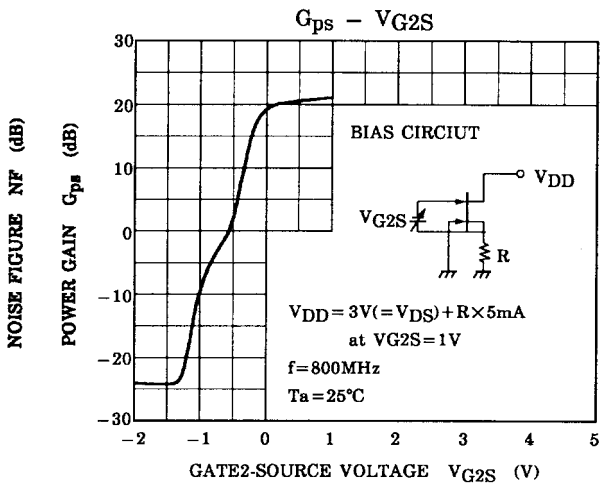
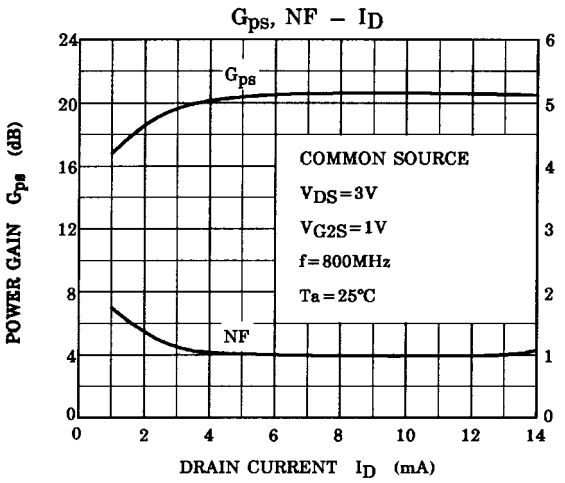
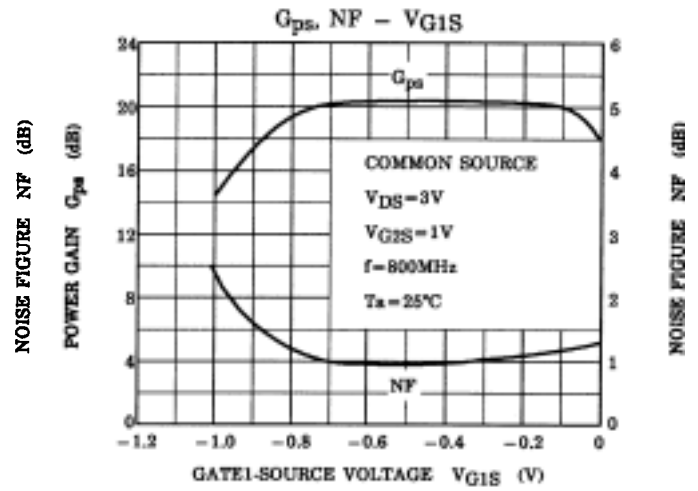
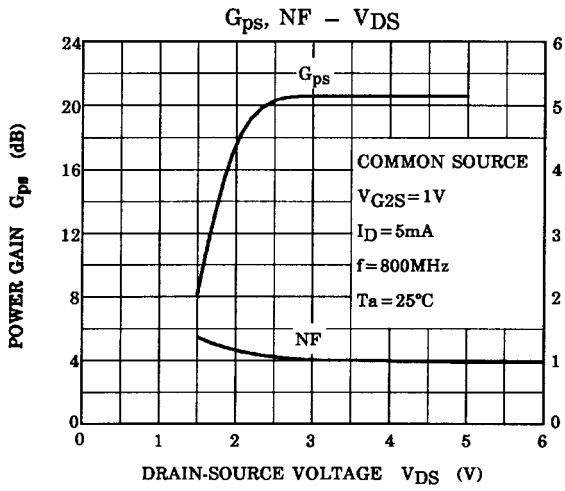
**Caution**

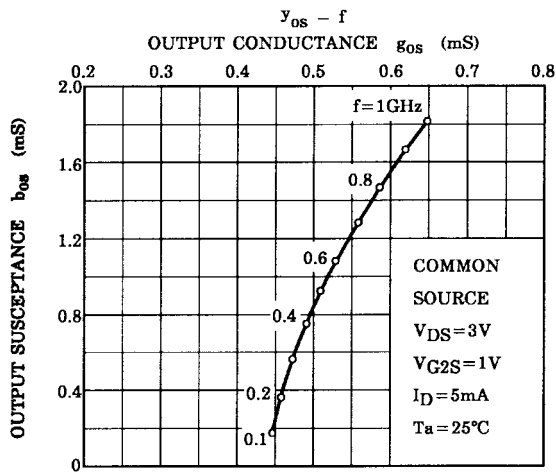
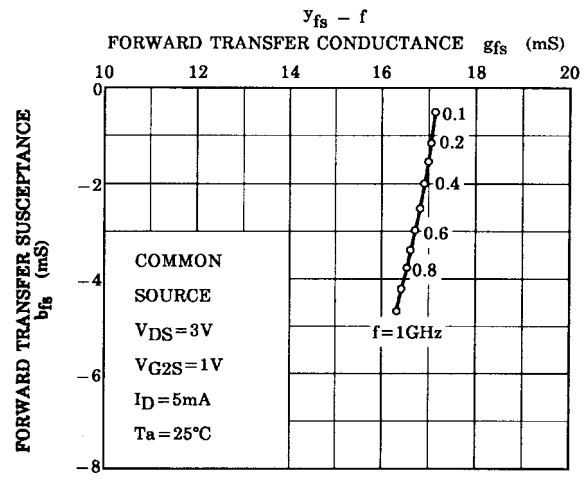
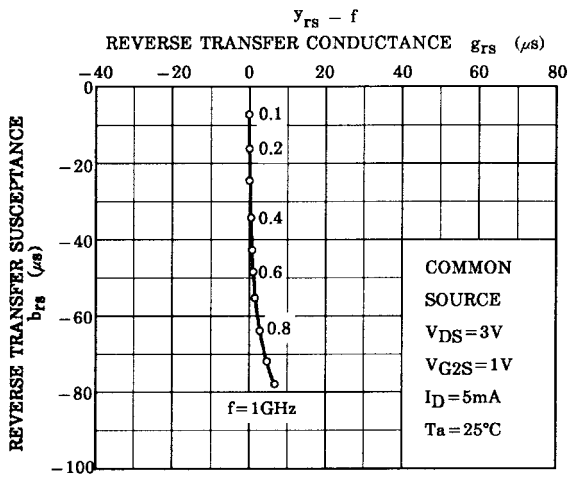
GaAs (gallium arsenide) is used in this product. The dust or vapor can be dangerous to humans. Do not break, cut, crush or dissolve chemically. Dispose of this product properly according to law. Do not intermingle with normal industrial or domestic waste.

**Marking**









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