

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK1739A

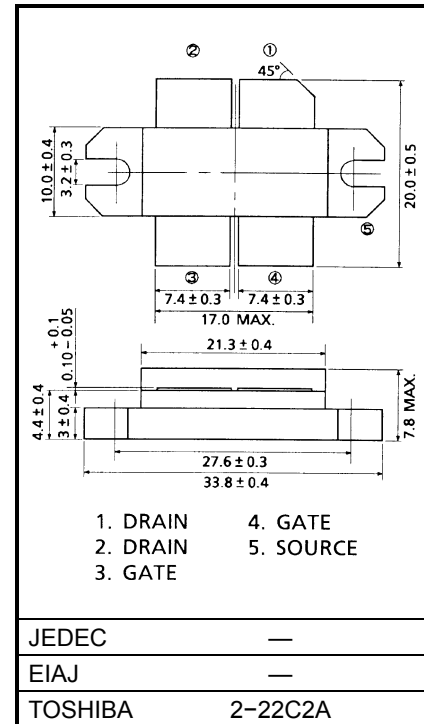
RF POWER MOS FET for UHF TV BROADCAST TRANSMITTER

Unit in mm

- Output Power : $P_o \geq 90$ W (Min.)
- Drain Efficiency : $\eta_D = 50\%$ (Typ.)
- Frequency : $f = 770$ MHz
- Push-Pull Structure Package

MAXIMUM RATINGS ($T_c = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	80	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	I_D	11	A
Reverse Drain Current	I_{DR}	11	A
Drain Power Dissipation	P_D	250	W
Channel Temperature	T_{ch}	150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	$-55 \sim 150$	$^\circ\text{C}$



Weight: 17.5 g

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ELECTRICAL CHARACTERISTICS (T_c = 25°C)

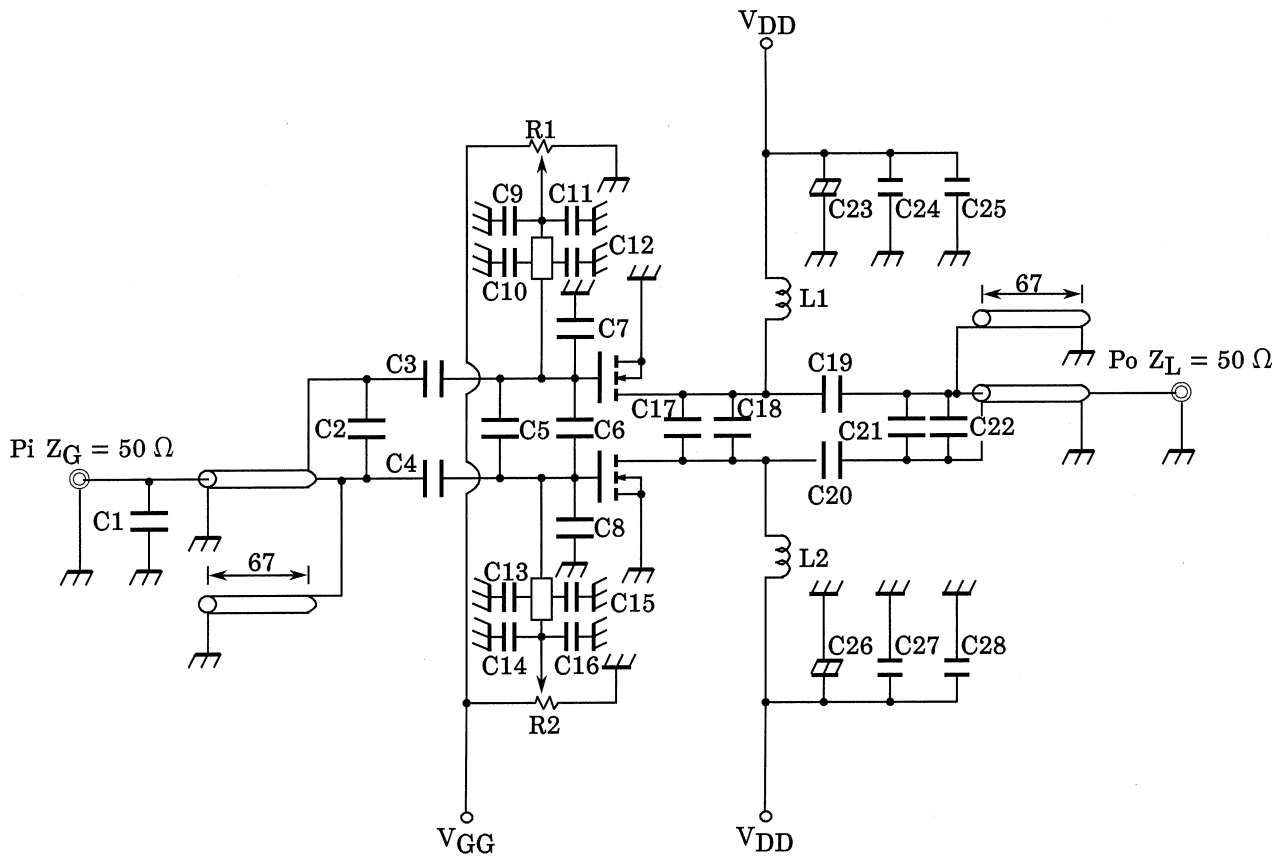
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Power	P _o	V _{DD} = 40 V, I _{idle} = 0.2 A × 2 P _i = 10 W, f = 770 MHz *	90	110	—	W
Drain Efficiency	η _D		—	50	—	%
Drain-Source Breakdown Voltage	V _{(BR)DSS}	I _D = 5 mA, V _{GS} = 0	80	—	—	V
Drain Cut-off Current	I _{DSS}	V _{DS} = 60 V, V _{GS} = 0	—	—	1.0	mA
Gate Threshold Voltage	V _{th}	I _D = 0.5 mA, V _{DS} = 10 V	0.5	—	3.0	V
Drain-Source ON Resistance	R _{DS(on)}	I _D = 2 A, V _{GS} = 10 V **	—	0.5	1.5	Ω
Drain-Source ON Voltage	V _{DS(on)}	I _D = 2 A, V _{GS} = 10 V **	—	1.0	3.0	V
Forward Transfer Admittance	Y _{fs}	I _D = 1.5 A, V _{DS} = 20 V **	0.9	1.3	—	S
Input Capacitance	C _{iss}	V _{DS} = 40 V, V _{GS} = 0, f = 1 MHz	—	80	—	pF
Output Capacitance	C _{oss}	V _{DS} = 40 V, V _{GS} = 0, f = 1 MHz	—	40	—	pF
Reverse Transfer Capacitance	C _{rss}	V _{DS} = 40 V, V _{GS} = 0, f = 1 MHz	—	1	—	pF

*: Push-Pull Operation

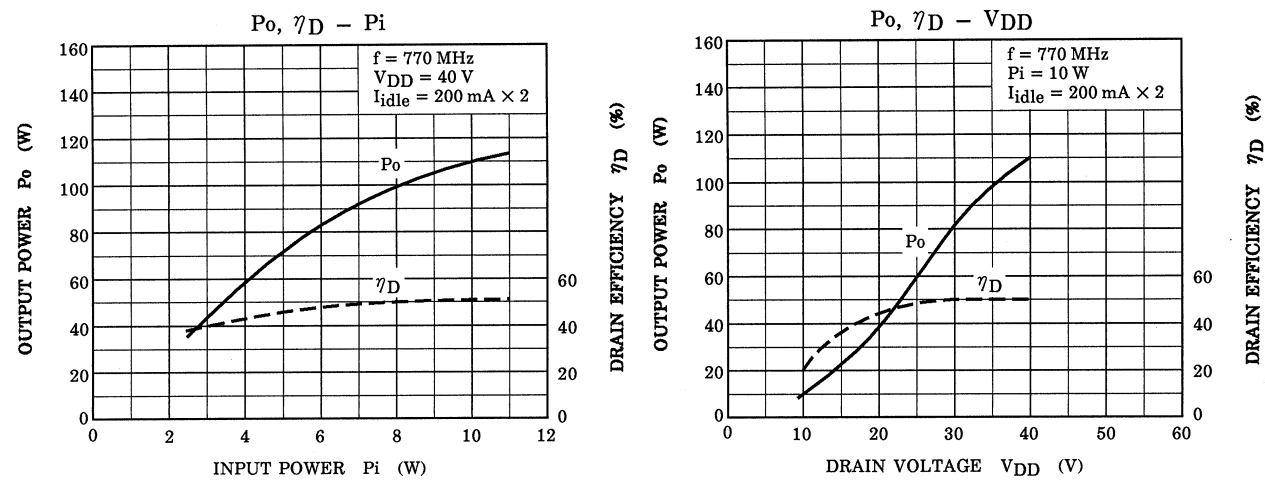
**: Pulse Test

This transistor is the electrostatic sensitive device. Please handle with caution.

RF OUTPUT POWER TEST FIXTURE



C1 :	2 pF	MICA CAPACITOR
C2, C21 :	1 pF	MICA CAPACITOR
C3, C4 :	220 pF	MICA CAPACITOR
C5 :	6 pF	MICA CAPACITOR
C6 :	10 pF	MICA CAPACITOR
C7, C8, C9, C10, C13, C14, C25, C28 :	4700 pF	CERAMIC CAPACITOR
C11, C12, C15, C16 :	10000 pF	CERAMIC CAPACITOR
C17, C18 :	8 pF	MICA CAPACITOR
C19, C20 :	200 pF × 2	CERAMIC CAPACITOR
C22 :	3 pF	MICA CAPACITOR
C23, C26 :	100 μF, 80 V	ELECTROLYTIC CAPACITOR
C24, C27 :	1000 pF	MICA CAPACITOR
L1, L2 :	4.0T, 5.0ID, ø1.0	SILVER PLATED COPPER WIRE
R1, R2 :	1 kΩ	VARIABLE RESISTOR



CAUTION

These are only typical curves and devices are not necessarily guaranteed at these curves.