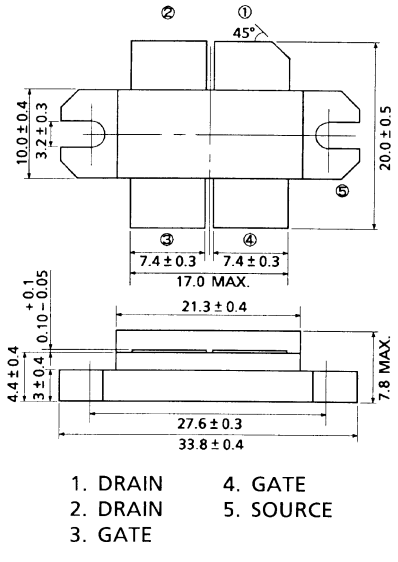
TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK1739A

RF POWER MOS FET for UHF TV BROADCAST TRANSMITTER

- Output Power : Po ≥ 90 W (Min.)
- Drain Efficiency : ηD = 50% (Typ.)
- Frequency : f = 770 MHz
- Push−Pull Structure Package

Unit in mm



JEDEC	—
EIAJ	—
TOSHIBA	2−22C2A

Weight: 17.5 g

MAXIMUM RATINGS (Tc = 25°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	°C
Storage Temperature Range	T_{stg}	−55~150	°C

000707EAA1

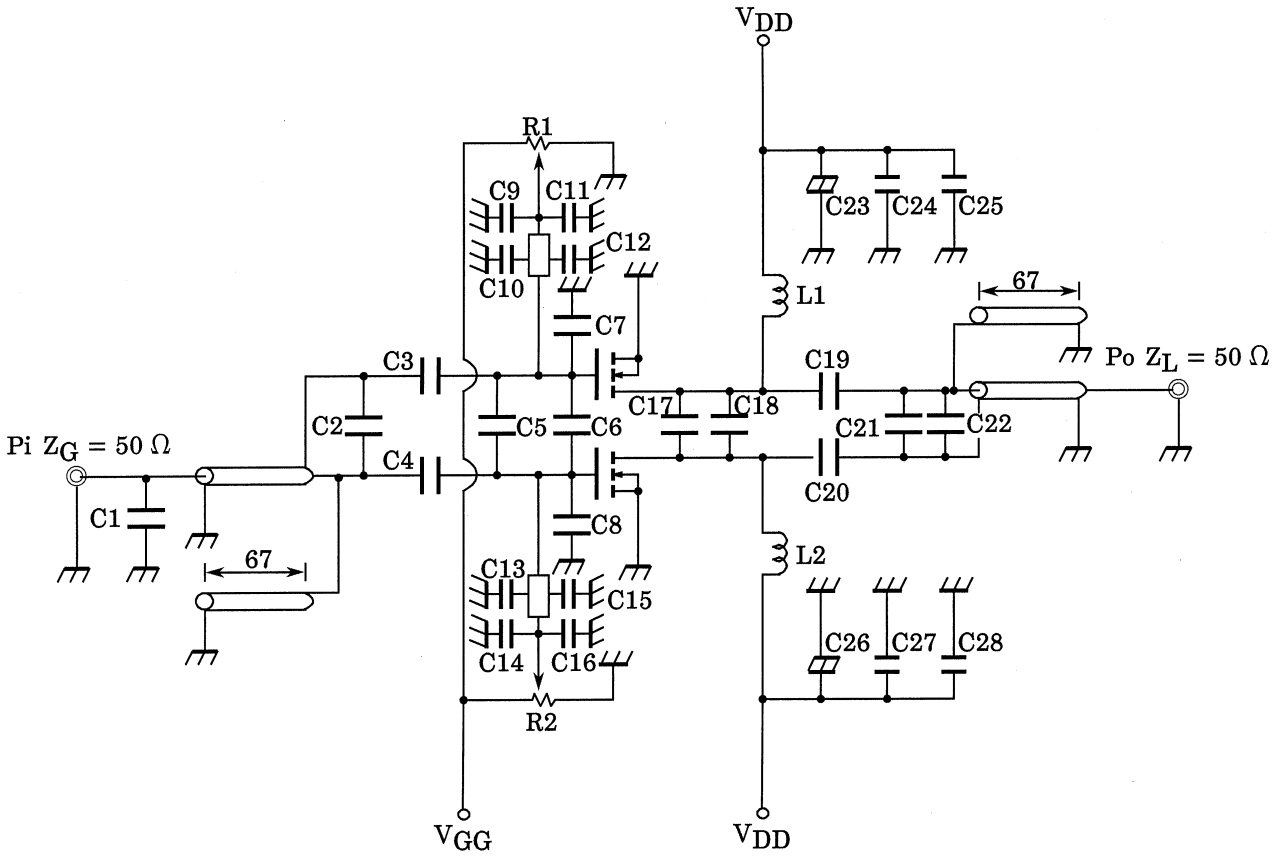
ELECTRICAL CHARACTERISTICS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Power	Po	V_{DD} = 40 V, Iidle = 0.2 A × 2 Pi = 10 W, f = 770 MHz *	90	110	—	W
Drain Efficiency	ηD		—	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

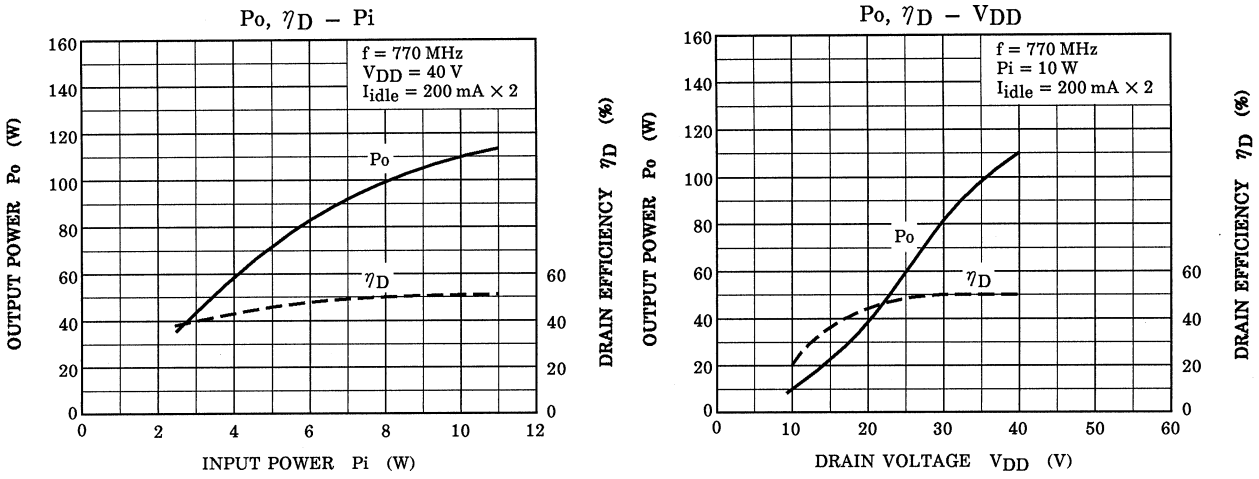
*: Push−Pull Operation **: Pulse Test

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.