

TOSHIBA FIELD EFFECT TRANSISTOR SILICON N CHANNEL MOS TYPE

2SK1028

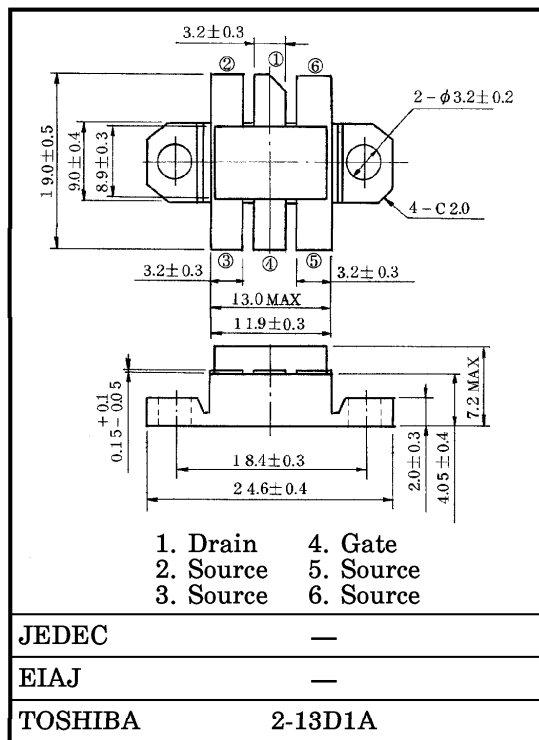
RF POWER MOS FET
for VHF TV BROADCAST TRANSMITTER

Unit in mm

- Output Power : $P_o \geq 100W$ (Min.)
- Drain Efficiency : $\eta_D = 70%$ (Typ.)
- Frequency : $f = 230MHz$

MAXIMUM RATINGS (Tc = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSS}	100	V
Gate-Source Voltage	V_{GSS}	± 20	V
Drain Current	I_D	6	A
Reverse Drain Current	I_{DR}	6	A
Drain Power Dissipation	P_D	125	W
Channel Temperature	T_{ch}	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C



ELECTRICAL CHARACTERISTICS (Tc = 25°C)

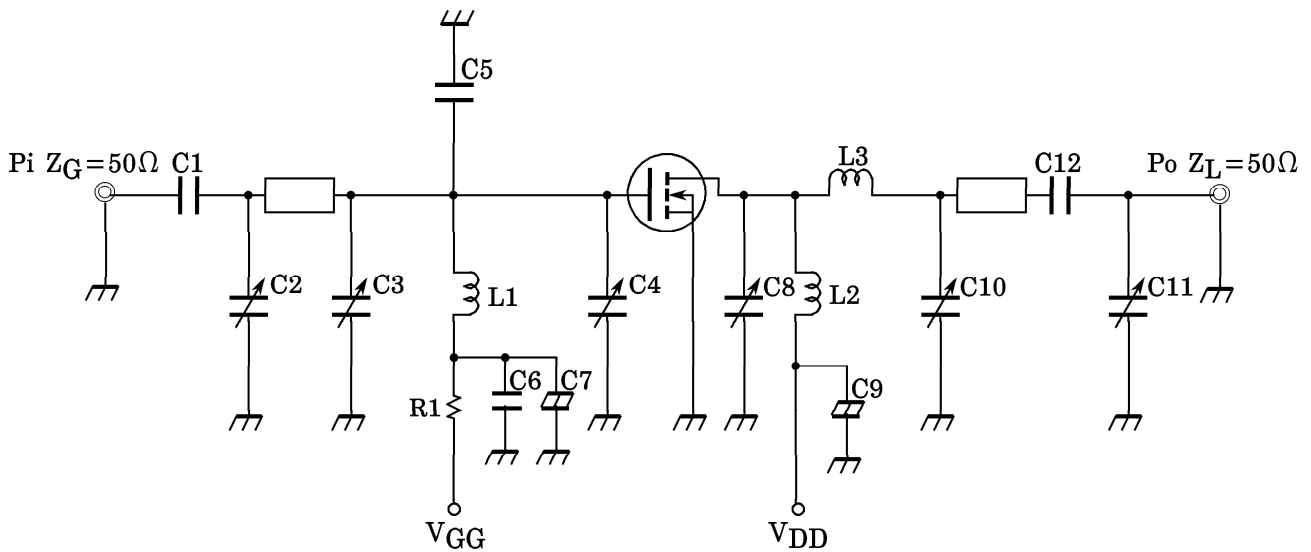
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Output Power	P_o	$V_{DD} = 50V, I_{idle} = 0.2A$	100	—	—	W
Drain Efficiency	η_D	$P_i = 5W, f = 230MHz$	—	70	—	%
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$I_D = 10mA, V_{GS} = 0$	100	—	—	V
Drain Cut-off Current	I_{DSS}	$V_{DS} = 80V, V_{GS} = 0$	—	—	1.0	mA
Gate Threshold Voltage	V_{th}	$I_D = 1mA, V_{DS} = 10V$	0.5	—	3.0	V
Drain-Source ON Resistance	$R_{DS(on)}$	$I_D = 4A, V_{GS} = 10V$ *	—	0.9	1.5	Ω
Drain-Source ON Voltage	$V_{DS(on)}$	$I_D = 4A, V_{GS} = 10V$ *	—	3.6	6.0	V
Forward Transfer Admittance	$ Y_{fs} $	$I_D = 3A, V_{DS} = 20V$ *	0.9	1.3	—	S
Input Capacitance	C_{iss}	$V_{DS} = 50V, V_{GS} = 0$ $f = 1MHz$	—	100	—	pF
Output Capacitance	C_{oss}	$V_{DS} = 50V, V_{GS} = 0$ $f = 1MHz$	—	40	—	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS} = 50V, V_{GS} = 0$ $f = 1MHz$	—	1	—	pF

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

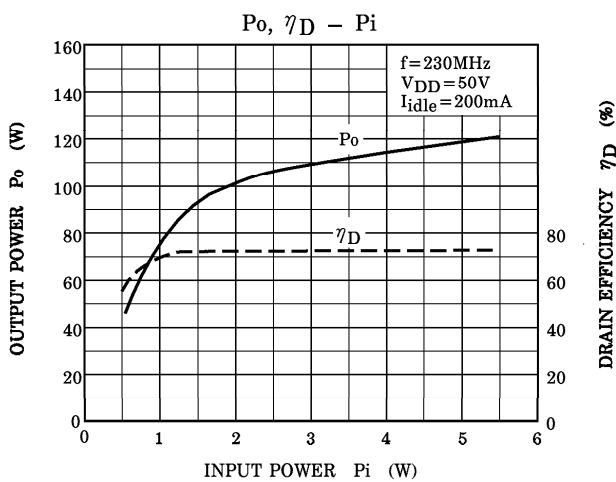
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RF OUTPUT POWER TEST FIXTURE



C1, C12	:	4700pF	CERAMIC CAPACITOR
C2, C3, C4, C10, C11	:	~30pF	VARIABLE CAPACITOR
C5	:	47pF	CERAMIC CAPACITOR
C6	:	10,000pF	CERAMIC CAPACITOR
C7	:	10 μ F, 50V	ELECTROLYTIC CAPACITOR
C8	:	~5pF	VARIABLE CAPACITOR
C9	:	10 μ F, 250V	ELECTROLYTIC CAPACITOR
L1	:	9T, 6ID ϕ 1.0	ENAMEL WIRE
L2	:	5T, 7ID ϕ 1.0	ENAMEL WIRE
L3	:	0.5T, 3ID ϕ 1.0	ENAMEL WIRE
R1	:	9.1k Ω	



CAUTION

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