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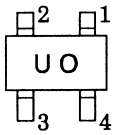
TV TUNER, UHF RF AMPLIFIER APPLICATIONS

- Superior Cross Modulation Performance.
- Low Reverse Transfer Capacitance : C_{rss}=20fF (Typ.)
- Low Noise Figure. : NF=1.5dB (Typ.)

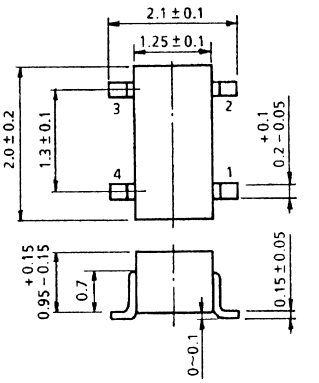
MAXIMUM RATINGS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DS}	12.5	V
Gate 1-Source Voltage	V_{G1S}	±8	V
Gate 2-Source Voltage	V_{G2S}	±8	V
Drain Current	I_D	30	mA
Drain Power Dissipation	P_D	100	mW
Chanel Temperature	T_{ch}	125	°C
Storage Temperature Range	T_{stg}	−55~125	°C

Marking



Unit in mm



1. GATE 1
2. GATE 2
3. DRAIN
4. SOURCE

USQ	
JEDEC	—
EIAJ	—
TOSHIBA	2-2K1B

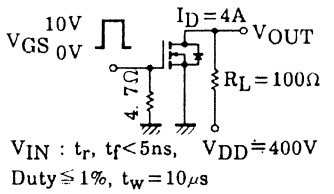
Weight : 0.006g

ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate 1 Leakage Current	I_{G1SS}	V_{DS}=0, V_{G1S}=±6V, V_{G2S}=0	—	—	±50	nA
Gate 2 Leakage Current	I_{G2SS}	V_{DS}=0, V_{G1S}=0, V_{G2S}=±6V	—	—	±50	nA
Drain-Source Voltage	$V_{(BR)DSX}$	V_{G1S}=−0.5V, V_{G2S}=−0.5V, I_D=100μA	12.5	—	—	V
Drain Current	I_{DSS}	V_{DS}=6V, V_{G2S}=4.5V, V_{G1S}=0V	0	—	0.1	mA
Gate 1-Source Cut-off Voltage	$V_{G1S(OFF)}$	V_{DS}=6V, V_{G2S}=4.5V, I_D=100μA	0.4	0.9	1.4	V
Gate 2-Source Cut-off Voltage	$V_{G2S(OFF)}$	V_{DS}=6V, V_{G1S}=4.0V, I_D=100μA	0.5	1.0	1.5	V
Forward Transfer Admittance	$\|Y_{fs}\|$	V_{DS}=6V, V_{G2S}=4.5V, I_D=10mA, f=1kHz	17	21	—	mS
Input Capacitance	C_{iss}	V_{DS}=6V, V_{G2S}=4.5V, I_D=10mA, f=1MHz	0.9	1.5	2.1	pF
Reverse Transfer Capacitance	C_{rss}		—	20	40	fF
Power Gain	G_{ps}	V_{DS}=6V, V_{G2S}=4.5V, I_D=10mA, f=800MHz	18	20	—	dB
Noise Figure	NF		—	1.5	2.5	

NJ Semi-Conductors reserves the right to change test conditions, parameter limits and package dimensions without notice. Information furnished by NJ Semi-Conductors is believed to be both accurate and reliable at the time of going to press. However NJ Semi-Conductors assumes no responsibility for any errors or omissions discovered in its use. NJ Semi-Conductors encourages customers to verify that datasheets are current before placing orders.

Electrical Characteristics (Ta = 25°C)

CHARACTERISTIC		SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Leakage Current		I_{GSS}	V_{GS} = ±25V, V_{DS} = 0V	–	–	±100	nA
Drain Cut-off Current		I_{DSS}	V_{DS} = 720V, V_{GS} = 0V	–	–	300	μA
Drain-Source Breakdown Voltage		$V_{(BR)\ DSS}$	I_D = 10mA, V_{GS} = 0V	900	–	–	V
Gate Threshold Voltage		V_{th}	V_{DS} = 10V, I_D = 1mA	1.5	–	3.5	V
Drain-Source ON Resistance		$R_{DS\ (ON)}$	I_D = 4A, V_{GS} = 10V	–	1.1	1.4	Ω
Forward Transfer Admittance		$\|Y_{fs}\|$	V_{DS} = 20V, I_D = 4A	2.0	4.0	–	S
Input Capacitance		C_{iss}	V_{DS} = 25V, V_{GS} = 0V, f = 1MHz	–	1300	1800	pF
Reverse Transfer Capacitance		C_{rss}		–	100	150	
Output Capacitance		C_{oss}		–	180	260	
Switching Time	Rise Time	t_r		–	25	50	ns
	Turn-on Time	t_{on}		–	40	80	
	Fall Time	t_f		–	20	40	
	Turn-off Time	t_{off}		–	100	200	
Total Gate Charge (Gate-Source Plus Gate-Drain)		Q_g	V_{DD} = 400V, V_{GS} = 10V, I_D = 9A	–	120	240	nC
Gate-Source Charge		Q_{gs}		–	70	–	
Gate-Drain ("Miller") Charge		Q_{gd}		–	50	–	

Source-Drain Diode Ratings and Characteristics (Ta = 25°C)

CHARACTERISTICS	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Continuous Drain Reverse Current	I_{DR}	–	–	–	9	A
Pulse Drain Reverse Current	I_{DRP}	–	–	–	27	A
Diode Forward Voltage	V_{DSF}	I_{DR} = 9A, V_{GS} = 0V	–	–	-2.0	V