

DESCRIPTION

Mitsubishi 2SK381 is a small type resin sealed N channel junction type FET. It is especially designed for low frequency voltage amplify, analog switch application.

Complementary with 2SJ40(P Channel).

FEATURE

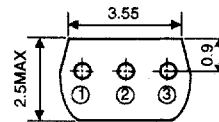
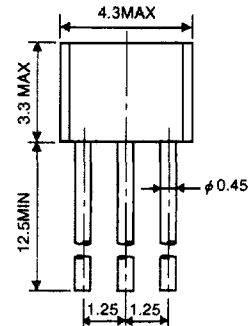
- Small type for mounting
- High $|y_{fs}|$ $|y_{fs}| = 3\text{mS}(\text{typ})$
- Low $R_{DS(ON)}$ $R_{DS(ON)} = 250\Omega(\text{typ})$

APPLICATION

General purpose voltage amplify, analog switch circuit
for stereo, cassette deck, VCR.

OUTLINE DRAWING

Unit:mm



TERMINAL CONNECTOR

- ① : SOURCE
② : GATE
③ : DRAIN
- EIAJ : —
JEDEC : —

Note)

The dimension without tolerance represent central value.

MAXIMUM RATINGS (Ta=25°C)

Symbol	Parameter	Rating	Unit
V_{GDO}	Gate to Drain voltage	-50	V
I_G	Gate current	10	mA
P_T	Total allowable dissipation(Ta=25°C)	300	mW
T_{ch}	Channel temperature	+125	°C
T_{stg}	Storage temperature	-55 to +125	°C

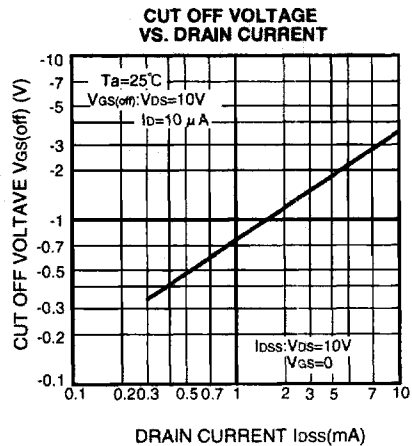
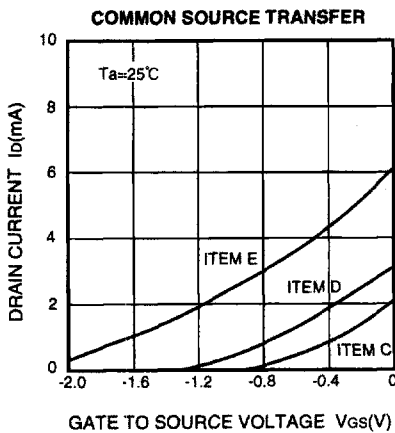
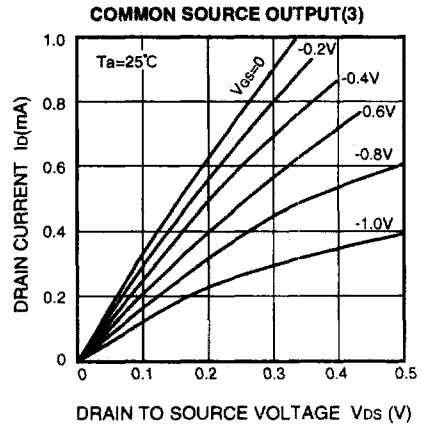
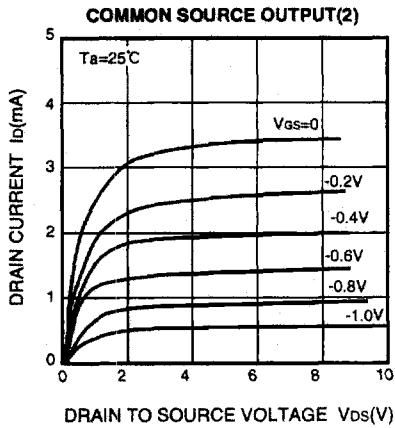
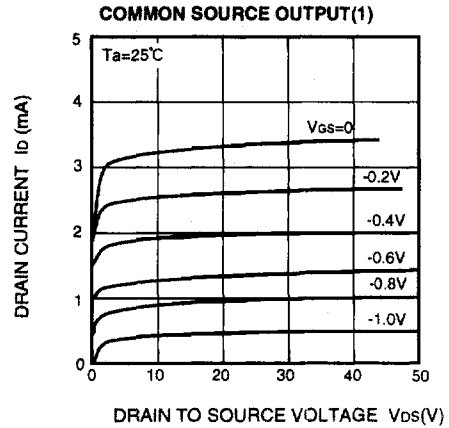
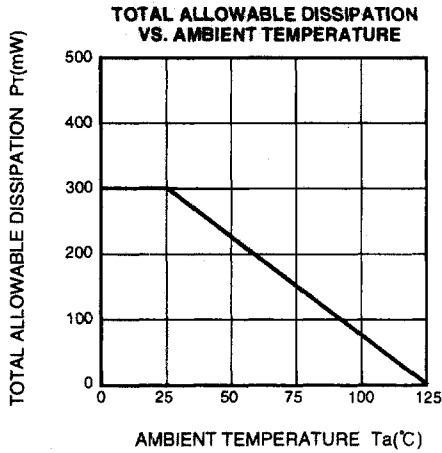
ELECTRICAL CHARACTERISTICS (Ta=25°C)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)GDO}$	G to D break down voltage	$I_G = -10\mu A, I_S = 0$	-50			V
I_{GSS}	Gate leakage current	$V_{GS} = -30V, V_{DS} = 0$			-1	nA
I_{DSS}^*	Drain current	$V_{DS} = 10V, V_{GS} = 0$	0.3		12	mA
$V_{GS(off)}$	Cut off voltage	$V_{DS} = 10V, I_D = 10\mu A$	-0.3	-1.5	-6.0	V
$ y_{fs} $	Forward transfer admittance	$V_{DS} = 10V, V_{GS} = 0, f = 1\text{kHz}$	1.0	3.0		mS
$ y_{os} $	Output admittance	$V_{DS} = 10V, V_{GS} = 0, f = 1\text{kHz}$		10		μS
C_{iss}	Input capacitance	$V_{DS} = 10V, V_{GS} = 0, f = 1\text{MHz}$		8		pF
C_{rss}	Feed back capacitance	$V_{DS} = 10V, V_{GS} = 0, f = 1\text{MHz}$		1.5		pF
$R_{DS(ON)}$	Drain to source resistor	$V_{DS} = 10\text{mVrms}(1\text{kHz}), V_{GS} = 0, I_{DSS} = 5\text{mA}$		250		Ω

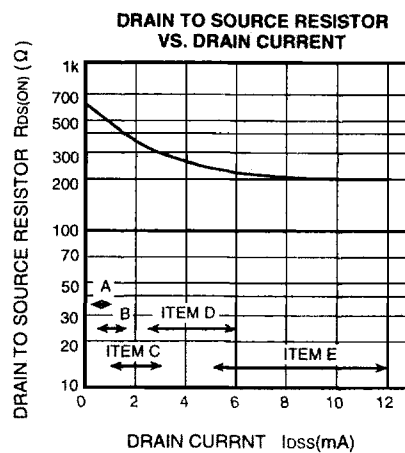
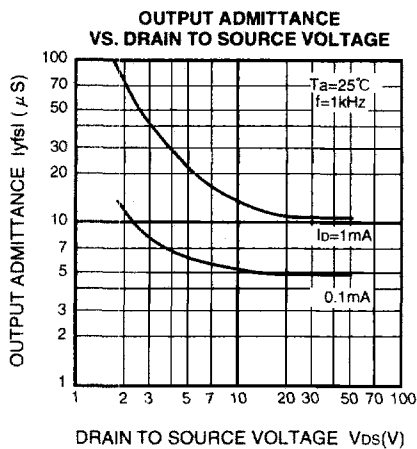
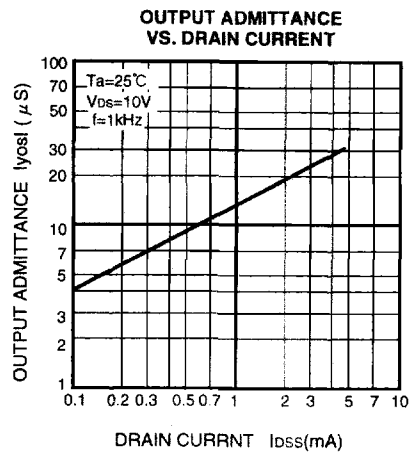
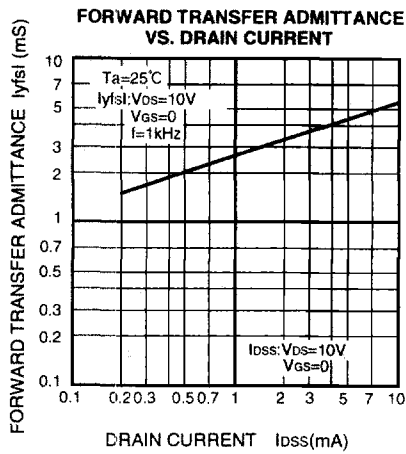
* : It shows loss classification in right table.

Item	A	B	C	D	E
I_{DSS}	0.3 to 0.8	0.6 to 1.5	1.0 to 3.0	2.5 to 6.0	5.0 to 12

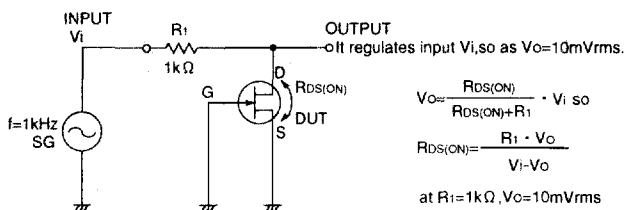
TYPICAL CHARACTERISTICS



FOR LOW FREQUENCY AMPLIFY APPLICATION
N CHANNEL JUNCTION TYPE



DRAIN TO SOURCE RESISTOR $R_{ds(on)}$ TEST CIRCUIT



$$V_o = \frac{R_{ds(on)}}{R_{ds(on)} + R_1} \cdot V_i \text{ so}$$

$$R_{ds(on)} = \frac{R_1 \cdot V_o}{V_i - V_o}$$

at $R_1=1\text{k}\Omega$, $V_o=10\text{mVrms}$

ANALOG SWITCH APPLICATION CIRCUIT

