〈FIELD-EFFECT TRANSISTOR〉

2SJ145

FOR LOW FREQUENCY AMPLIFY APPLICATION
P CHANNEL JUNCTION TYPE

DESCRIPTION

2SJ145 is a small type resin sealed P channel junction type FET. It is especially designed for low frequency voltage amplify, analog switch application.

FEATURE

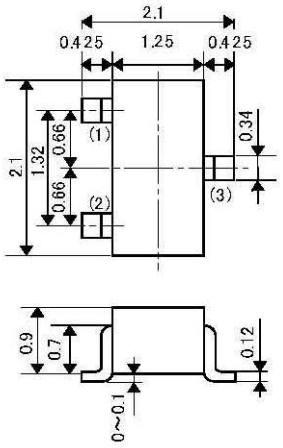
- Small type for mounting.
- High |yfs| |yfs| = 4mS (typ)
- Low $R_{DS(ON)}$ $R_{DS(ON)}$=220Ω

APPLICATION

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

OUTLINE DRAWING

Unit:mm



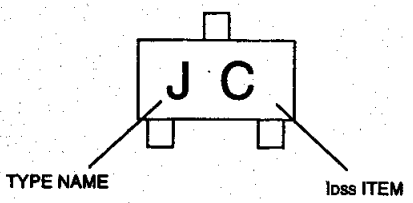
TERMINAL CONNECTOR

① : SOURCE
② : DRAIN
③ : GATE

EIAJ : SC-70

Note)
The dimension without tolerance represent central value.

MARKING



MAXIMUM RATINGS (Ta=25℃)

Symbol	Parameter	Ratings	Unit
V_{GDO}	Gate to Drain voltage	50	V
I_G	Gate Current	-10	mA
P_T	Total allowable dissipation (Ta = 25 ℃)	150	mW
T_{ch}	Channel temperature	+125	℃
T_{stg}	Storage temperature	-55 to +125	℃

ELECTRICAL CHARACTERISTICS (Ta=25℃)

Symbol	Parameter	Test conditions	Limits			Unit
			Min	Typ	Max	
$V_{(BR)GDO}$	G to D break down voltage	I_G =10 μA, 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	-1.0	-4.0	-12	mA
$V_{GS(off)}$	Cut off voltage	V_{DS} =-10V, I_D= -10 μA	0.3	1.5	6.0	V
|yfs|	Forward transfer admittance	V_{DS} =-10V, V_{GS}=0, f=1kHz	1.5	4.0		mS
C_{iss}	Input capacitance	V_{DS} =-10V, V_{GS}=0, f=1MHz		18		pF
$R_{DS(ON)}$	Drain to source resistor	V_{DS} =10mVrms(1kHz), V_{GS}=0, I_{DSS}=5mA		220		Ω

* : It shows Idss classification in right table.

Item	C	D	E
I_{DSS}	1.0 to 3.0	2.5 to 6.0	5.0 to 12

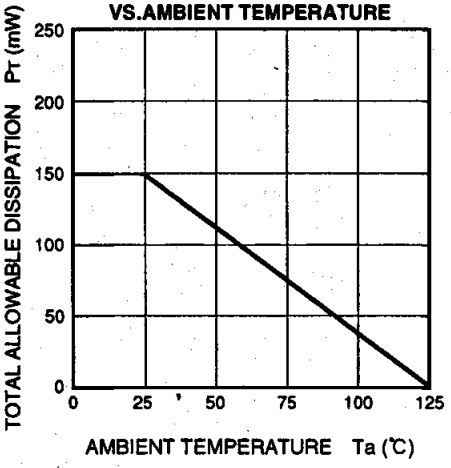
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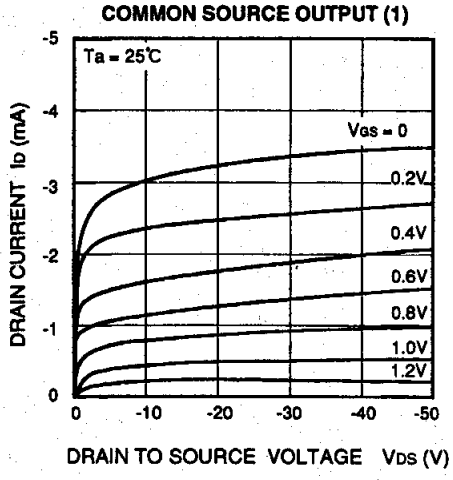
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TYPICAL CHARACTERISTICS

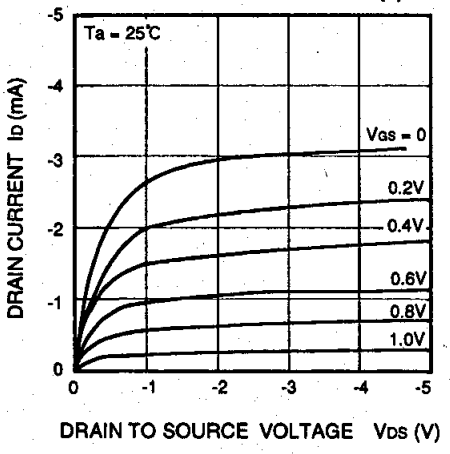
TOTAL ALLOWABLE DISSIPATION VS.AMBIENT TEMPERATURE



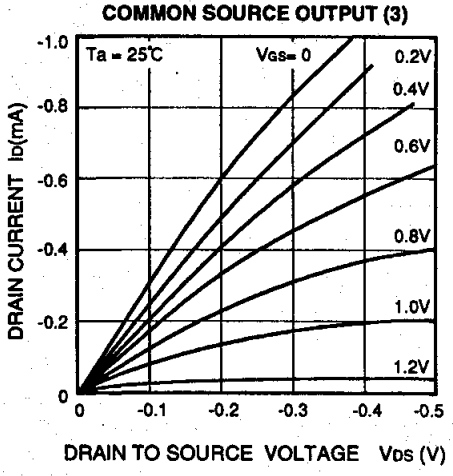
COMMON SOURCE OUTPUT (1)



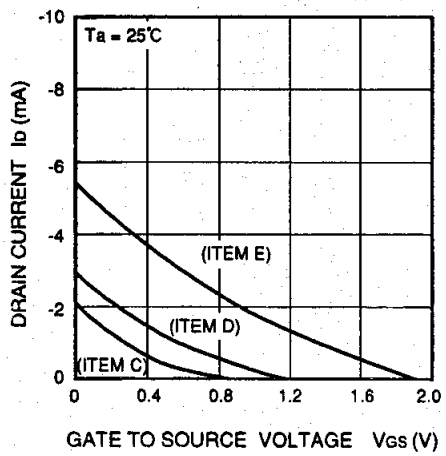
COMMON SOURCE OUTPUT (2)



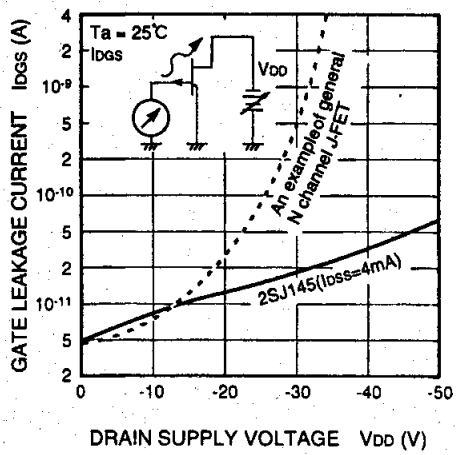
COMMON SOURCE OUTPUT (3)



COMMON SOURCE TRANSFER



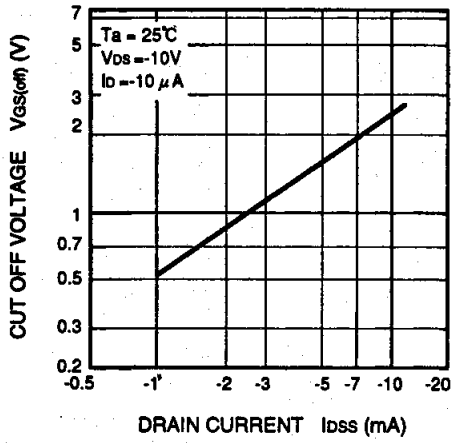
GATE LEAKAGE CURRENT VS. DRAIN SUPPLY VOLTAGE



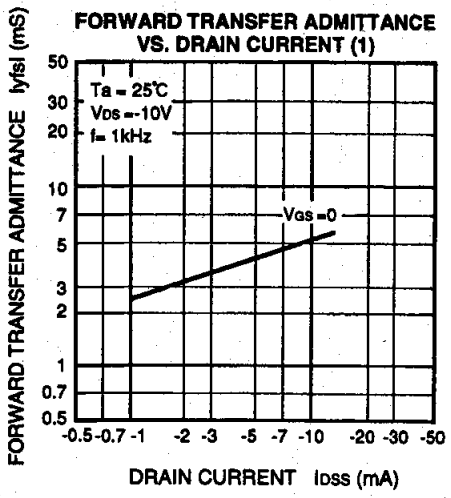
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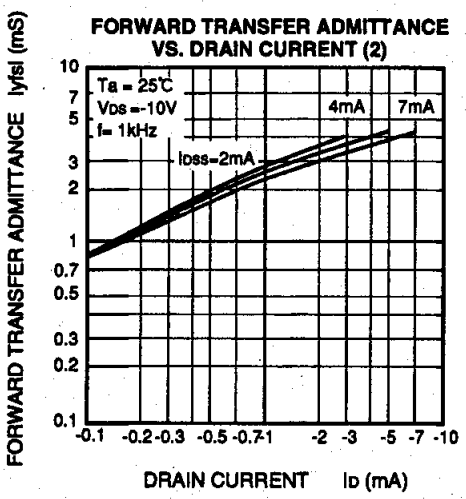
CUT OFF VOLTAGE VS. DRAIN CURRENT



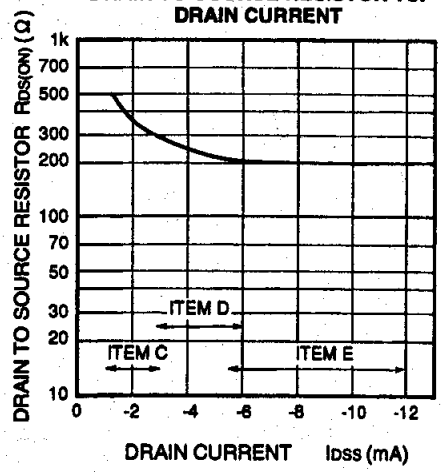
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (1)



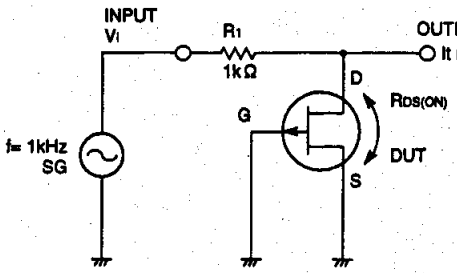
FORWARD TRANSFER ADMITTANCE VS. DRAIN CURRENT (2)



DRAIN TO SOURCE RESISTOR VS. DRAIN CURRENT



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=1kΩ, V_O= 10mVrms

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