



QNHCHIP

2SK117

Product Specification

2SK117

Silicon N Channel Junction Type



Description

Low noise audio amplifier applications

High $|Y_{fs}|$: $|Y_{fs}|=15\text{mS}$ (Typ.) ($V_{DS}=10\text{V}$, $V_{GS}=0$)

Low Noise : $NF=1.0\text{dB}$ (Typ.) ($V_{DS}=10\text{V}$, $I_p=0.5\text{mA}$, $f=1\text{kHz}$, $R_G=1\text{k}\Omega$)

High Breakdown Voltage : $V_{GDS}=-50\text{V}$

High Input Impedance : $I_{GSS}=-1\text{nA}$ (Max.) ($V_{GS}=-30\text{V}$)

Absolute Maximum Ratings

($T_A = 25^\circ\text{C}$)

Symbol	Characteristics	Rating	Unit
V_{GDS}	Gate-drain voltage	-50	V
I_G	Gate current	10	mA
P_D	Drain power dissipation	300	mW
T_j	Junction temperature	125	$^\circ\text{C}$
T_{stg}	Storage temperature range	-55~125	$^\circ\text{C}$



Electrical Characteristics

($T_A = 25^\circ\text{C}$)

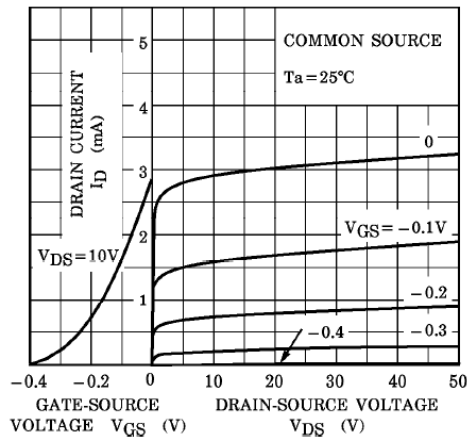
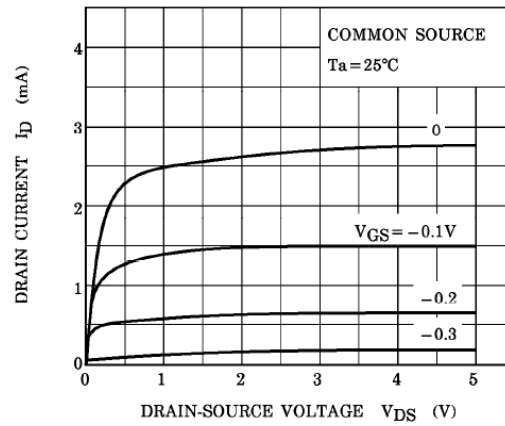
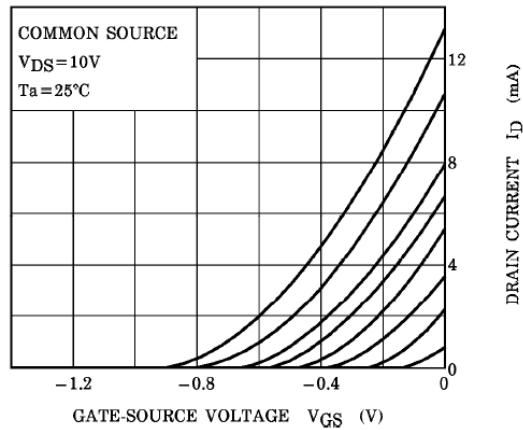
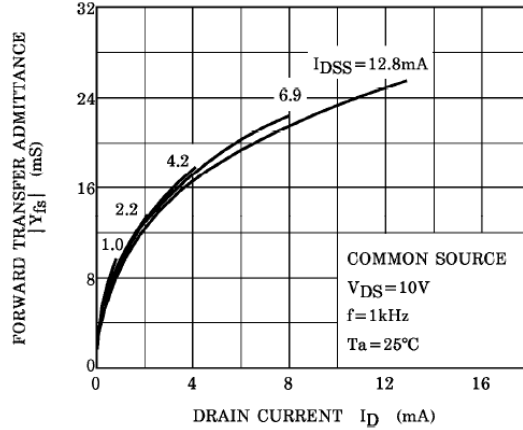
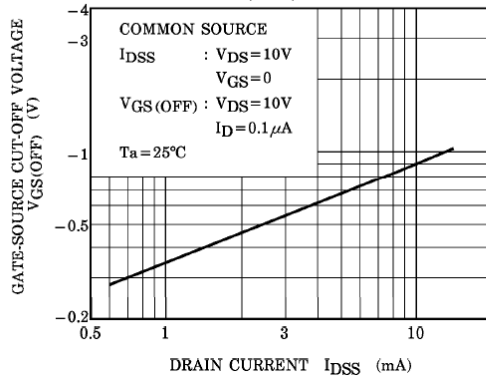
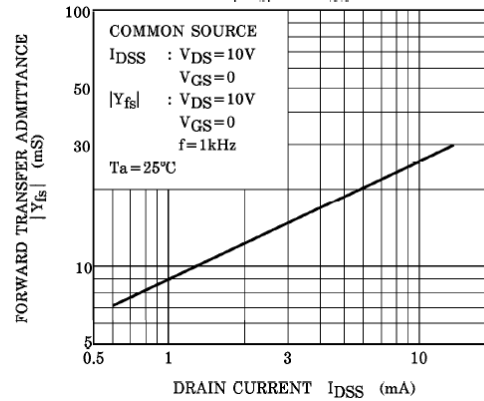
CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate Cut-offCurrent	I_{GSS}	$V_{GS} = -30\text{V}, V_{DS} = 0$			-1.0	nA
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS} = 0, I_G = -100\mu\text{A}$	-50			V
Drain Current	$I_{DSS}(\text{Note})$	$V_{DS} = 10\text{V}, V_{GS} = 0$	1.2		14	mA
Gate-Source Cut-offVoltage	$V_{GS(\text{OFF})}$	$V_{DS} = 10\text{V}, I_D = 0.1\mu\text{A}$	-0.2		-1.5	V
Forward Transfer Admittance	$ Y_{fs} $	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{kHz}$	4.0	15		mS
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1\text{MHz}$		13		pF
Reverse Transfer Capacitance	C_{rss}	$V_{GD} = -10\text{V}, I_D = 0, f = 1\text{MHz}$		3		pF
Noise Figure	NF(1)	$V_{DS} = 10\text{V}, R_G = 1\text{k}\Omega$ $I_D = 0.5\text{mA}, f = 10\text{Hz}$		5	10	dB
	NF(2)	$V_{DS} = 10\text{V}, R_G = 1\text{k}\Omega$ $I_D = 0.5\text{mA}, f = 1\text{kHz}$		1	2	

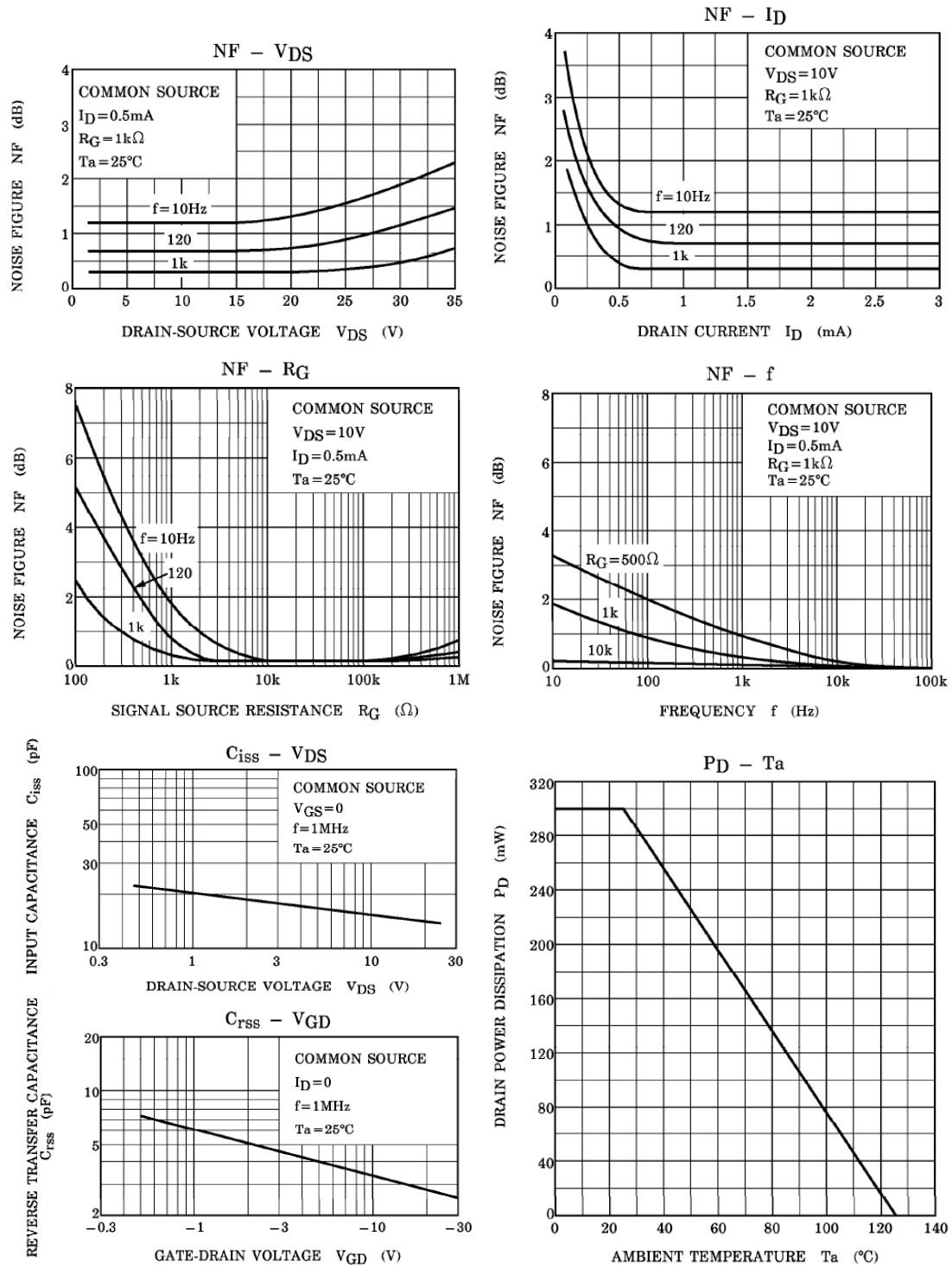
Note: I_{DSS} Classification Y: 1.2~3.0mA, GR: 2.6~6.5mA, BL: 6~14mA



Typical Application Circuit

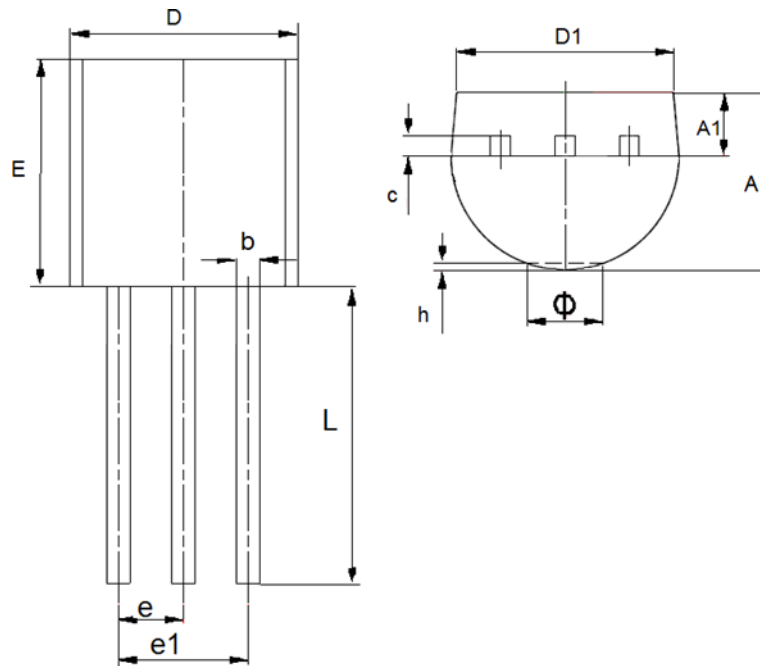
STATIC CHARACTERISTICS

 $I_D - V_{DS}$ (LOW VOLTAGE REGION) $I_D - V_{GS}$  $|Y_{fs}| - I_D$  $V_{GS}(\text{OFF}) - I_{DSS}$  $|Y_{fs}| - I_{DSS}$ 





Packaging Information



参数	尺寸 (mm)		尺寸 (Inch)	
	最小值	最大值	最小值	最大值
A	3.3	3.7	0.1299	0.1457
A1	1.1	1.4	0.0433	0.0551
b	0.38	0.55	0.015	0.0217
c	0.36	0.51	0.0142	0.0201
D	4.3	4.7	0.1693	0.185
D1	3.43	—	0.135	—
E	4.3	4.7	0.1693	0.185
e	1.27		0.05	
e1	2.44	2.64	0.0961	0.1039
L	14.1	14.5	0.5551	0.5709
h	0	0.38	0	0.015
Φ	—	1.6	—	0.063

Ordering information

Order Code	I _{DSS} (mA)	Package Type	Minimum Packing QTY	Belivery Mode
2SK117-Y	1.2~3.0	TO-92	3000	Tape & Reel
2SK117-GR	2.6~6.5	TO-92	3000	Tape & Reel
2SK117-BL	6~14	TO-92	3000	Tape & Reel