

2SK3427

Silicon N-Channel Junction

For impedance conversion in low frequency

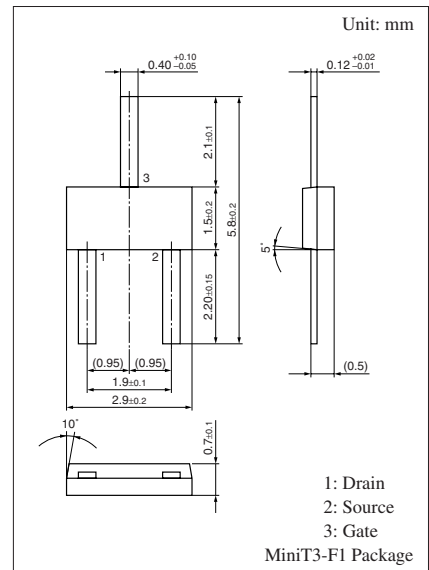
For electret capacitor microphone

■ Features

- High mutual conductance g_m
- Low noise voltage of NV

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DSO}	20	V
Drain-gate voltage	V_{DGO}	20	V
Drain-source current	I_{DSO}	2	mA
Drain-gate current	I_{DGO}	2	mA
Gate-source current	I_{GSO}	2	mA
Allowable power dissipation	P_{D}	200	mW
Operating ambient temperature	T_{opr}	-20 to +80	$^\circ\text{C}$
Storage temperature	T_{stg}	-55 to +150	$^\circ\text{C}$



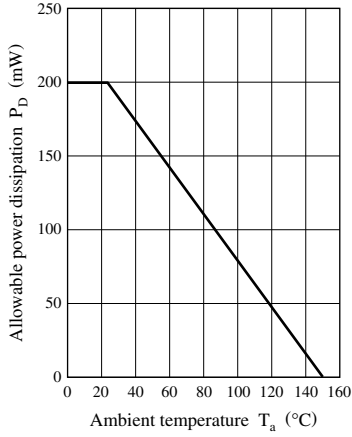
Marking Symbol: 5E

■ Electrical Characteristics $T_a = 25^\circ\text{C} \pm 3^\circ\text{C}$

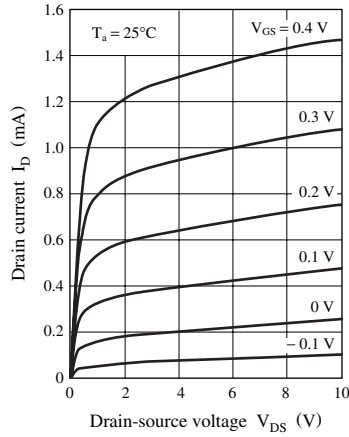
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain current	I_{D}	$V_{\text{DS}} = 2.0 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$	100		460	μA
	I_{DSS}	$V_{\text{DS}} = 2.0 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$, $V_{\text{GS}} = 0$	107		470	
Mutual conductance	g_m	$V_{\text{D}} = 2.0 \text{ V}$, $V_{\text{GS}} = 0$, $f = 1 \text{ kHz}$	660	1600		μS
Noise voltage	NV	$V_{\text{D}} = 2.0 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$, A-Curve			10	μV
Voltage gain	G_{V1}	$V_{\text{D}} = 2.0 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$, $e_{\text{G}} = 10 \text{ mV}$, $f = 1 \text{ kHz}$	-7.5	-4.7		dB
	G_{V2}	$V_{\text{D}} = 12 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$, $e_{\text{G}} = 10 \text{ mV}$, $f = 1 \text{ kHz}$	-4.0	-1.5		
	G_{V3}	$V_{\text{D}} = 1.5 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$, $e_{\text{G}} = 10 \text{ mV}$, $f = 1 \text{ kHz}$	-8.0	-5.0		
	$\Delta G_{\text{V}} \cdot f ^*$	$V_{\text{D}} = 2.0 \text{ V}$, $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$, $e_{\text{G}} = 10 \text{ mV}$, $f = 1 \text{ kHz to } 70 \text{ Hz}$		0	1.7	
Voltage gain difference	$ G_{\text{V2}} - G_{\text{V1}} $		0		4.0	dB
	$ G_{\text{V1}} - G_{\text{V3}} $		0		1.7	

Note) *: $\Delta |G_{\text{V}} \cdot f|$ is assured for AQL 0.065%. (the measurement method is used by source-grounded circuit.)

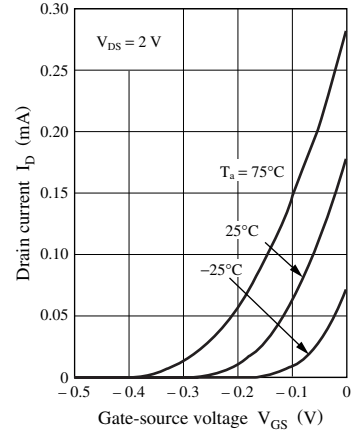
$P_D - T_a$



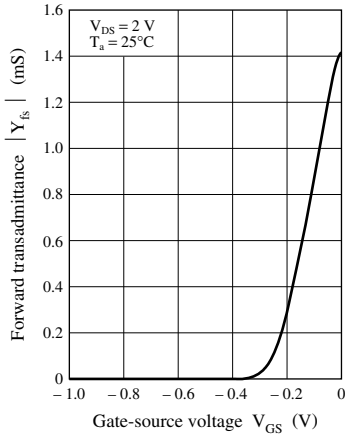
$I_D - V_{DS}$



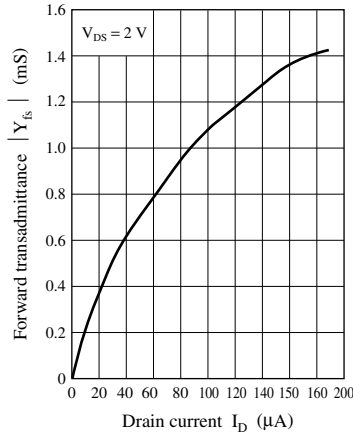
$I_D - V_{GS}$



$|Y_{fs}| - V_{GS}$



$|Y_{fs}| - I_D$



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