

# 2SK3427

## Silicon N-Channel Junction

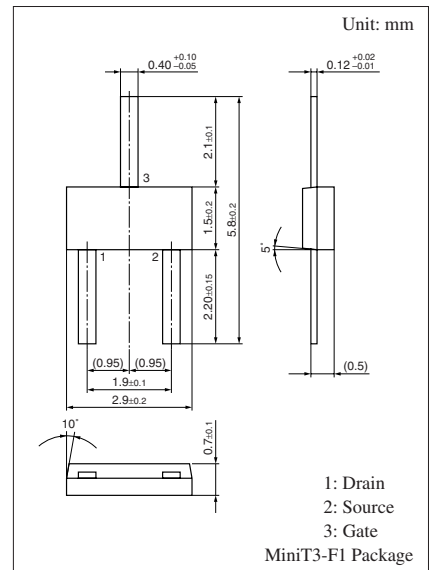
For impedance conversion in low frequency  
For electret capacitor microphone

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

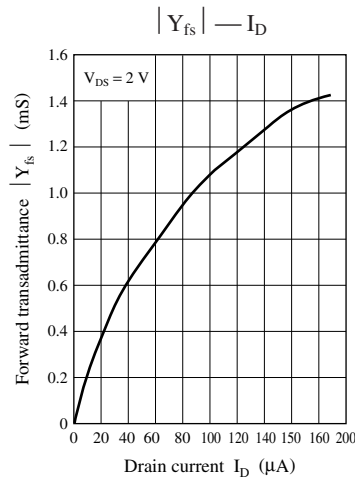
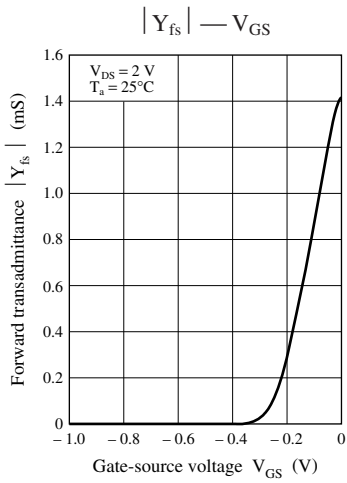
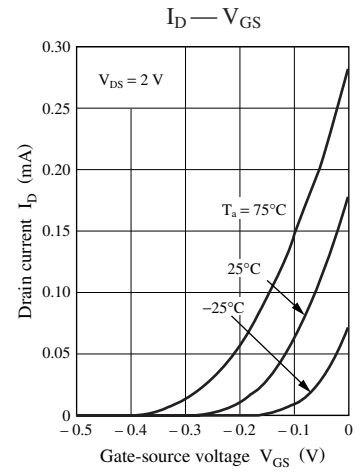
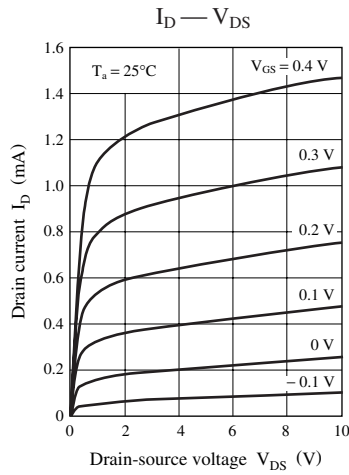
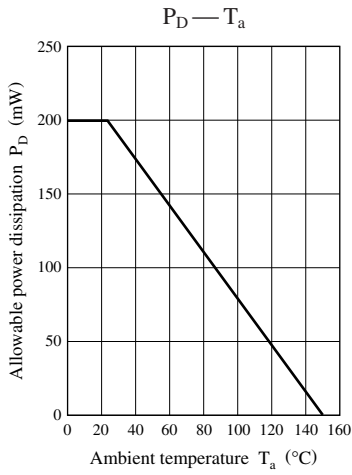


Marking Symbol: 5E

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

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain current	$I_{\text{D}}$	$V_{\text{DS}} = 2.0 \text{ V}$ , $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$	100		460	$\mu\text{A}$
	$I_{\text{DSS}}$	$V_{\text{DS}} = 2.0 \text{ V}$ , $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ , $V_{\text{GS}} = 0$	107		470	
Mutual conductance	$g_m$	$V_{\text{D}} = 2.0 \text{ V}$ , $V_{\text{GS}} = 0$ , $f = 1 \text{ kHz}$	660	1600		$\mu\text{S}$
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	$\mu\text{V}$
Voltage gain	$G_{\text{V1}}$	$V_{\text{D}} = 2.0 \text{ V}$ , $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$ , $e_{\text{G}} = 10 \text{ mV}$ , $f = 1 \text{ kHz}$	-7.5	-4.7		dB
	$G_{\text{V2}}$	$V_{\text{D}} = 12 \text{ V}$ , $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$ , $e_{\text{G}} = 10 \text{ mV}$ , $f = 1 \text{ kHz}$	-4.0	-1.5		
	$G_{\text{V3}}$	$V_{\text{D}} = 1.5 \text{ V}$ , $R_{\text{D}} = 2.2 \text{ k}\Omega \pm 1\%$ $C_{\text{O}} = 5 \text{ pF}$ , $e_{\text{G}} = 10 \text{ mV}$ , $f = 1 \text{ kHz}$	-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.)



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