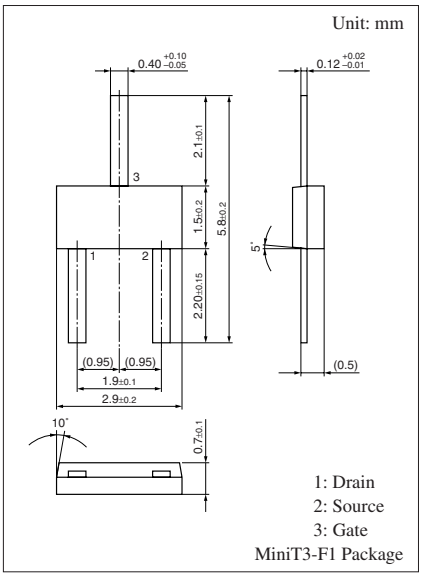
2SK3427

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



Marking Symbol: 5E

■ Absolute Maximum Ratings $T_a = 25°C$

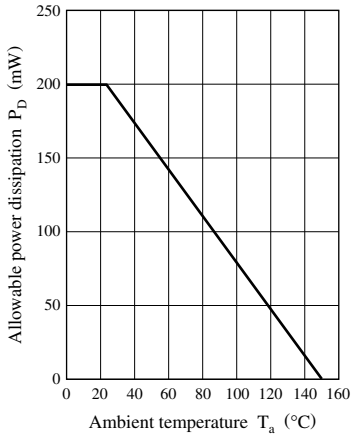
Parameter	Symbol	Rating	Unit
Drain-source voltage	V_{DSO}	20	V
Drain-gate voltage	V_{DGO}	20	V
Drain-source current	I_{DSO}	2	mA
Drain-gate current	I_{DGO}	2	mA
Gate-source current	I_{GSO}	2	mA
Allowable power dissipation	P_D	200	mW
Operating ambient temperature	T_{opr}	−20 to +80	°C
Storage temperature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

■ Electrical Characteristics $T_a = 25°C \pm 3°C$

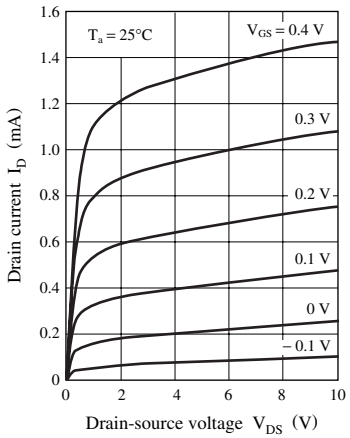
Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Drain current	I_D	V_{DS} = 2.0 V, R_D = 2.2 kΩ ± 1%	100		460	μA
	I_{DSS}	V_{DS} = 2.0 V, R_D = 2.2 kΩ ± 1%, V_{GS} = 0	107		470	
Mutual conductance	g_m	V_D = 2.0 V, V_{GS} = 0, f = 1 kHz	660	1 600		μS
Noise voltage	NV	V_D = 2.0 V, R_D = 2.2 kΩ ± 1% C_O = 5 pF, A-Curve			10	μV
Voltage gain	G_{V1}	V_D = 2.0 V, R_D = 2.2 kΩ ± 1% C_O = 5 pF, e_G = 10 mV, f = 1 kHz	−7.5	−4.7		dB
	G_{V2}	V_D = 12 V, R_D = 2.2 kΩ ± 1% C_O = 5 pF, e_G = 10 mV, f = 1 kHz	−4.0	−1.5		
	G_{V3}	V_D = 1.5 V, R_D = 2.2 kΩ ± 1% C_O = 5 pF, e_G = 10 mV, f = 1 kHz	−8.0	−5.0		
	$\Delta\lvert G_V.f \rvert$ *	V_D = 2.0 V, R_D = 2.2 kΩ ± 1% C_O = 5 pF, e_G = 10 mV, f = 1 kHz to 70 Hz		0	1.7	
Voltage gain difference	$\lvert G_{V2} - G_{V1} \rvert$		0		4.0	dB
	$\lvert G_{V1} - G_{V3} \rvert$		0		1.7	

Note) *: $\Delta\lvert G_V.f \rvert$ is assured for AQL 0.065%. (the measurement method is used by source-grounded circuit.)

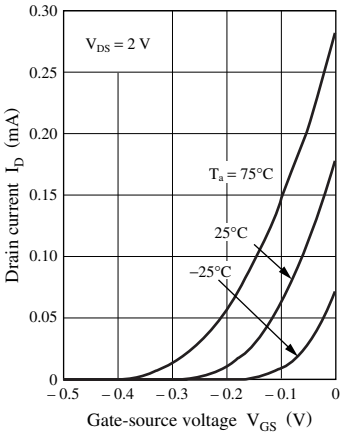
P_D — T_a



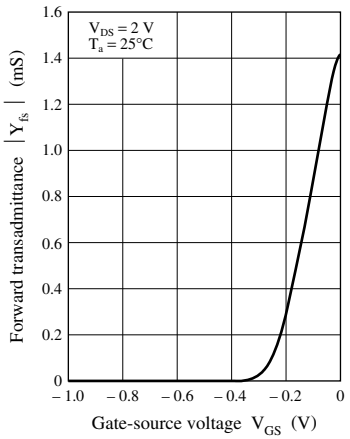
I_D — V_{DS}



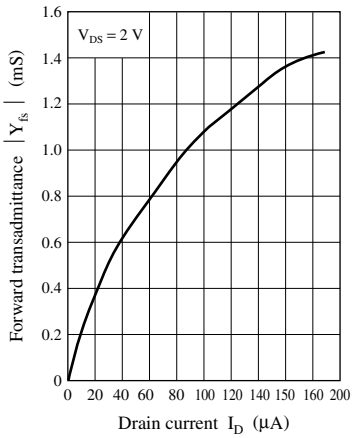
I_D — V_{GS}



$|Y_{fs}|$ — V_{GS}



$|Y_{fs}|$ — I_D



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