

2SK43,43S

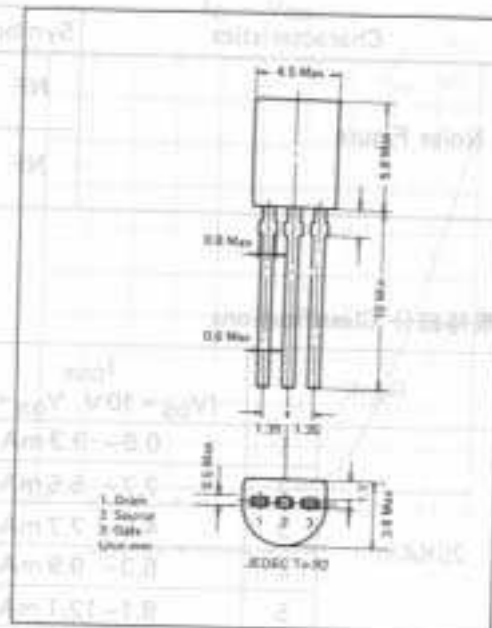
Industrial Use

Silicon N-Channel Junction FET

- Super Low Noise, High Gm, High Reliability
- プリアンプ (TVカメラ, VTR, オーディオ, 測定器)
- アナログスイッチ (2SK43S-D, $R_{ON} \leq 80\Omega$)
- 小リーク電流 ($I_{GSS} = -5\mu A$ typ.)
- TV Camera, Video and Audio Preamplifiers
- Analogue Switchings (2SK43S-D)
- Small Leak Current ($I_{GSS} = -5\mu A$ typ.)

絶対最大定格 Absolute Maximum Ratings $T_a = 25^\circ C$

Characteristics	Symbol	2SK43/2SK43S
Drain-to-Gate Voltage	V_{DGG}	30V
Source-to-Gate Voltage	V_{SGG}	50V
Drain Current	I_D	20 mA
Gate Current	I_G	5 mA
Power Dissipation	P	300 mW
Junction Temperature	T_j	100°C
Storage Temperature	T_{stg}	-50~+120°C

電気的特性 Electrical Characteristics $T_a = 25^\circ C$

Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
Drain-to-Gate Voltage	V_{DGS}	$I_G = 10\mu A, V_{DS} = 0$	25			V
Gate Cutoff Current	I_{GSS}	$V_{GS} = -15V, V_{DS} = 0$			-1.0	nA
			2SK43			
				-5	-100	pA
Drain Saturation Current	I_{DSS}	$V_{DS} = 10V, V_{GS} = 0$	0.9		14.3	mA
Pinch-off Voltage	V_p	$V_{DS} = 10V, I_D = 30\mu A$	0.18		1.49	V
Forward Transfer Conductance	g_m	$V_{DS} = 10V, V_{GS} = 0, f = 1 kHz$	6.3			mS
Input Impedance Y11S	r_p	$V_{DS} = 10V, V_{GS} = 0$		1.2		kΩ
	C_p	$f = 100 MHz$		13		pF
Output Impedance Y22S	r_p	$V_{DS} = 10V, V_{GS} = 0$				
	C_p	$f = 100 MHz$		2.7		pF
Reverse Transfer Capacitance	C_{dg}	$V_{DS} = 10V, V_{GS} = 0, f = 1 MHz$		2.4		pF
Gate-to-Drain Capacitance	C_{GD}	$V_{GS} = 0, f = 1 MHz, \text{Fig. 1}$		7		pF
Gate-to-Source Capacitance	C_{GS}	$V_{GS} = 0, f = 1 MHz, \text{Fig. 2}$		7		pF
Off-State Resistance	R_{OFF}	2SK43S-D	10^9	10^{12}		Ω
On-State Resistance	R_{ON}	Ref. Table 1			80	Ω
Output Noise Voltage	e	$V_{GS} = 0, V_{DS} = 10V, R_g = 10 k\Omega, f = 1 kHz$		13		$nV/Hz^{1/2}$
	e	$V_{GS} = 0, V_{DS} = 10V, R_g = 100 k\Omega, f = 10 Hz$		39		$nV/Hz^{1/2}$

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Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
Noise Figure	NF	$V_{GS} = 0, V_{DS} = 10V,$ $R_g = 10 k\Omega, f = 1 kHz$		0.1		dB
	NF	$V_{GS} = 0, V_{DS} = 10V,$ $R_g = 100 k\Omega, f = 10 Hz$		0.1		dB

規格細分 Classifications

Rank		I_{DSS}	V_p	β_m	R_{ON}, R_{OFF}
		($V_{DS} = 10V, V_{GS} = 0$)	($V_{DS} = 10V, I_D = 30\mu A$)	($V_{DS} = 10V, f = 1 kHz$)	
2SK43-	1	0.9–3.3 mA	0.18–0.61 V	6.3 m Ω –	–
	2	2.7–5.5 mA	0.36–0.83 V	6.3 m Ω –	–
	3	4.5–7.7 mA	0.45–0.99 V	10.8 m Ω –	–
	4	6.3–9.9 mA	0.58–1.21 V	10.8 m Ω –	–
	5	8.1–12.1 mA	0.72–1.38 V	12.6 m Ω –	–
	6	9.9–14.3 mA	0.85–1.49 V	12.6 m Ω –	–
2SK43 $\text{\textcircled{S}}$ -	A	0.9–3.3 mA	0.18–0.61 V	6.3 m Ω –	–
	B	2.7–5.5 mA	0.36–0.83 V	6.3 m Ω –	–
	C	4.5–9.9 mA	0.45–1.21 V	10.8 m Ω –	–
	D	8.1–14.3 mA	0.72–1.49 V	14.0 m Ω –	\circ

Table 1 2SK43 $\text{\textcircled{S}}$ -D R_{ON}, R_{OFF} Characteristics

Characteristics	Symbol	Conditions	Min.	Typ.	Max.	Unit
On-State Resistance	R_{ON}	$V_{DS} = 0.1V, V_{GS} = 0$			80	Ω
Distribution of R_{ON}	ΔR_{ON}	$ R_{ON(max)} - R_{ON(min)} $			± 17.5	Ω
Off-State Resistance	R_{OFF}	$V_{DS} = 10V, V_{GS} = -15V$	10^9	10^{12}		Ω

