

シリコンNチャネル接合形電界効果トランジスタ

SILICON N-CHANNEL JUNCTION FIELD EFFECT TRANSISTOR

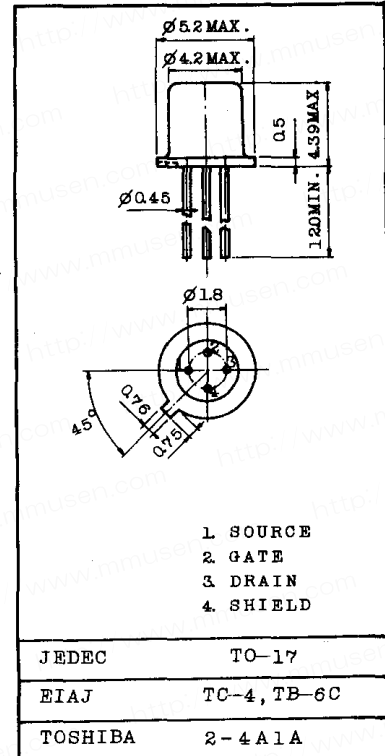
2SK 11
2SK 12
2SK 15

通信工業用 INDUSTRIAL APPLICATIONS

- 低周波増幅用
- 低雑音増幅用 (2SK15)
- DC, AC高入力抵抗回路用
- チョッパ増幅用
- 差動増幅用
- スイッチング回路用
 - ・ Low Frequency Amplifier, High Input Impedance Circuit, Chopper Amplifier, Differential Amplifier and Switching Circuit Applications.
 - ・ Low Noise Amplifier Applications (2SK15)
- ・ 高入力抵抗です;
 - $I_{GSS} = -1.0 \text{ nA (Max.) (2SK11)}$
 - $I_{GSS} = -0.1 \text{ nA (Max.) (2SK12, 2SK15)}$
- ・ 相互コンダクタンスが高い;
 - $g_m = 700 \sim 3200 \mu\text{S (2SK11)}$
 - $g_m = 800 \sim 3200 \mu\text{S (2SK12, 2SK15)}$
- ・ 低雑音です;
 - $NF = 3 \text{ dB (} f = 1 \text{ kHz, } R_g = 1 \text{ M}\Omega \text{) (Max.) (2SK12)}$
 - $NF = 3 \text{ dB (} f = 1 \text{ kHz, } R_g = 10 \text{ k}\Omega \text{) (Max.) (2SK15)}$
 - $NF = 10 \text{ dB (} f = 120 \text{ Hz, } R_g = 10 \text{ k}\Omega \text{) (Max.) (2SK15)}$

ペアー用の標準品として特性の良くそろったものを2個を1組としたものがあります。(ペアー用標準品名欄参照)
Matched Pairs are Available (Refer to Page 1d)

Unit in mm



最大定格 MAXIMUM RATINGS ($T_a = 25^\circ\text{C}$)

CHARACTERISTIC	SYMBOL	RATING	UNIT
ゲート・ドレイン間電圧	V_{GDS}	-20	V
ゲート電流	I_G	10	mA
許容損失	P_D	100	mW
接合温度	T_j	150	$^\circ\text{C}$
保存温度	T_{stg}	-65~150	$^\circ\text{C}$

2SK11
2SK12
2SK15

電気的特性 ELECTRICAL CHARACTERISTICS (Ta = 25°C)

CHARACTERISTIC		SYMBOL	CONDITION	MIN.	TYP.	MAX.	UNIT
ゲート漏れ電流	2SK11	I _{GSS}	V _{GS} =-10V	-	-	-1.0	nA
	2SK12		V _{DS} =0	-	-	-0.1	
	2SK15						
ゲート・ドレイン 間降伏電圧		V(BR)GDS	V _{DS} =0 I _G =-0.1mA	-20	-	-	V
ドレイン電流	(Note1) 2SK11	I _{DSS}	V _{DS} =10V	0.3	-	6.5	mA
	(Note2) 2SK12		V _{GS} =0	0.45	-	5.0	
	(Note3) 2SK15						
ピンチオフ電圧	(Note1) 2SK11	V _P	V _{DS} =10V	-0.5	-	-6.0	V
	(Note2) 2SK12		I _D =0.1μA	-0.65	-	-4.5	
	(Note3) 2SK15			-0.65	-	-5.0	
相互コンダク タンス	(Note1) 2SK11	g _m	V _{DS} =10V	700	-	3200	μS
	(Note2) 2SK12		V _{GS} =0	800	-	3200	
	(Note3) 2SK15		f=1kHz				
ゲート容量		C _G	V _{GS} =-10V V _{DS} =0 f=1MHz	-	3.0	5.0	pF
雑音電圧	2SK12	V _N	V _{DS} =10V I _D =0.45mA R _G =1MΩ Δf=10Hz~10kHz	-	-	16	μV
	2SK15	V _N (P-P)	V _{DS} =5V I _D =0.45mA R _G =10kΩ Δf=5Hz~50Hz	-	-	4	
雑音指数	2SK12	NF	V _{DS} =10V I _D =0.45mA R _G =1MΩ f=1kHz	-	-	3	dB
	2SK15	NF(1)	V _{DS} =10V I _D =0.45mA R _G =10kΩ f=1kHz	-	-	3	
		NF(2)	V _{DS} =10V I _D =0.45mA R _G =10kΩ f=120Hz	-	-	10	

2SK11
2SK12
2SK15

(Note 1) 2SK11は I_{DSS} , V_p および g_m により下表のように分類し、現品表示してあります。

According to the value of I_{DSS} , V_p and g_m , the 2SK11 is classified as follows.

CLASSIFICATION	SYMBOL	I_{DSS} (mA)		V_p (V)		g_m (μU)	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
2SK11-R	R	0.3	1.0	-0.5	-2.0	700	2300
2SK11-O	O	0.8	2.5	-0.8	-3.5	1000	3000
2SK11-Y	Y	2.0	6.5	-1.4	-6.0	1300	3200

(Note 2) 2SK12は I_{DSS} , V_p および g_m により下表のように分類し、現品表示してあります。

According to the value of I_{DSS} , V_p and g_m , the 2SK12 is classified as follows.

CLASSIFICATION	SYMBOL	I_{DSS} (mA)		V_p (V)		g_m (μU)	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
2SK12-R	R	0.45	0.9	-0.65	-1.6	800	1900
2SK12-O	O	0.8	1.6	-0.9	-2.2	1000	2300
2SK12-Y	Y	1.4	2.8	-1.2	-3.0	1300	3000
2SK12-GR	GR	2.5	5.0	-1.7	-4.5	1600	3200

(Note 3) 2SK15は I_{DSS} , V_p および g_m により下表のように分類し、現品表示してあります。

According to the value of I_{DSS} , V_p and g_m , the 2SK15 is classified as follows.

CLASSIFICATION	SYMBOL	I_{DSS} (mA)		V_p (V)		g_m (μU)	
		MIN.	MAX.	MIN.	MAX.	MIN.	MAX.
2SK15-R	R	0.45	0.9	-0.65	-1.8	800	1900
2SK15-O	O	0.8	1.6	-0.9	-2.5	1000	2300
2SK15-Y	Y	1.4	2.8	-1.3	-3.5	1300	3000
2SK15-GR	GR	2.5	5.0	-1.8	-5.0	1600	3200

2SK11
2SK12
2SK15

ペア用標準品種名 STANDARD MATCHED PAIR FETs

2SK12-R ②	2SK15-R ②
2SK12-O ②	2SK15-O ②
2SK12-Y ②	2SK15-Y ②
2SK12-GR ②	2SK15-GR ②

ペア特性 MATCHED PAIR CHARACTERISTICS ($T_a = 25^\circ\text{C}$)

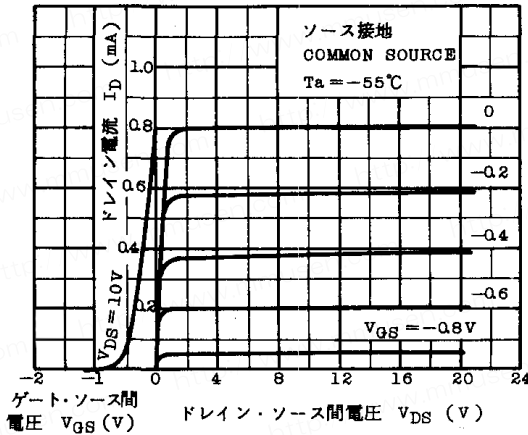
CHARACTERISTIC	SYMBOL	CONDITION	MIN.	TYP.	MAX.	UN.
ドレイン電流差	ΔI_{DS}	$V_{DS} = 10\text{V}$ $V_{GS} = 0$	—	—	10	%
ゲート・ソース間電圧差	ΔV_{GS}	$V_{DG} = 10\text{V}$ $I_D = 0.3\text{mA}$	—	—	20	mV

その他の電気的特性は2SK12, 2SK15一般品と同じです。

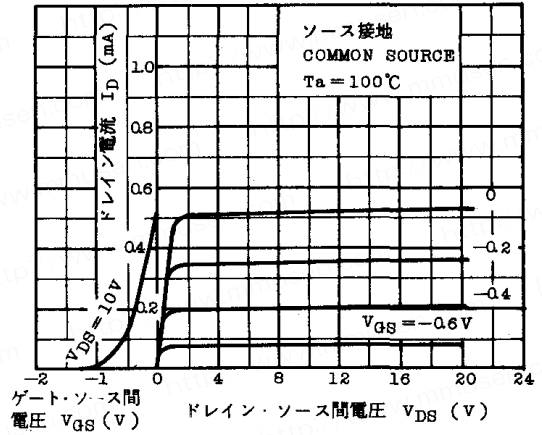
Other Characteristics are same as 2SK12, 2SK15.

2SK11
2SK12
2SK15

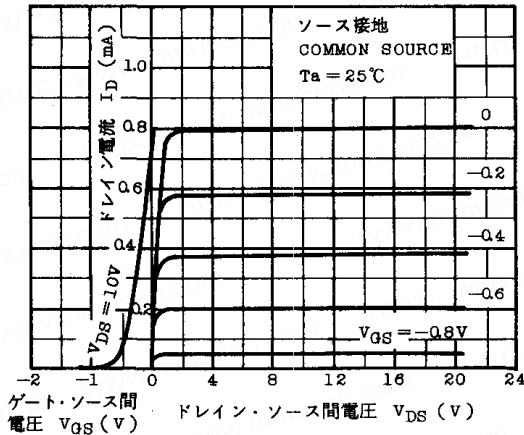
2SK11-R, 2SK12-R, 2SK15-R
STATIC CHARACTERISTICS



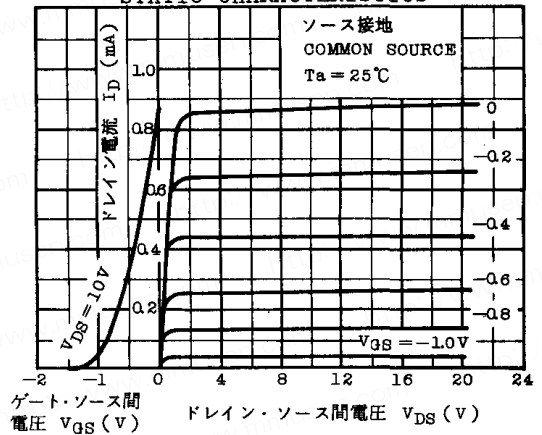
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STATIC CHARACTERISTICS



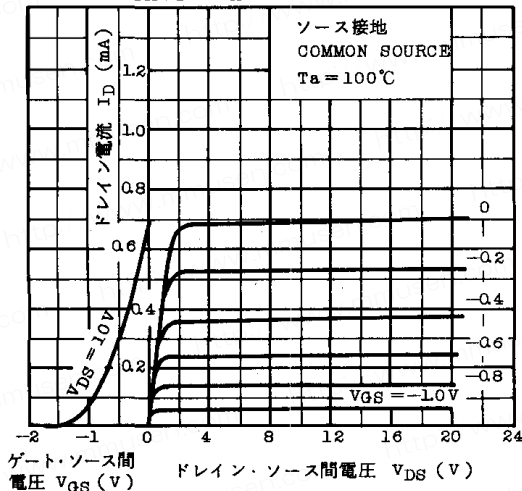
2SK11-R, 2SK12-R, 2SK15-R
STATIC CHARACTERISTICS



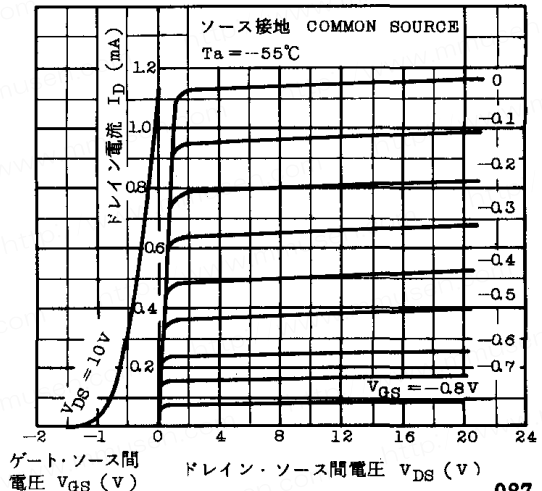
2SK11-O, 2SK12-O, 2SK15-O
STATIC CHARACTERISTICS



2SK11-O, 2SK12-O, 2SK15-O
STATIC CHARACTERISTICS

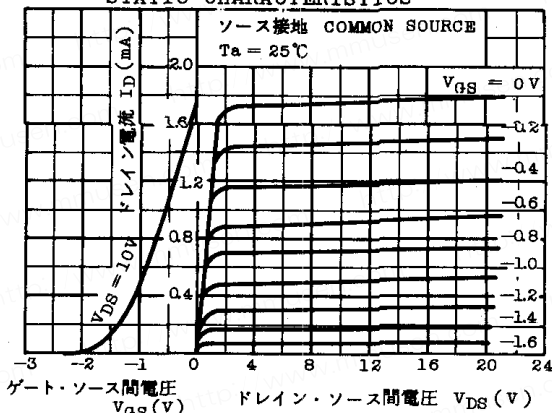


2SK11-O, 2SK12-O, 2SK15-O
STATIC CHARACTERISTICS

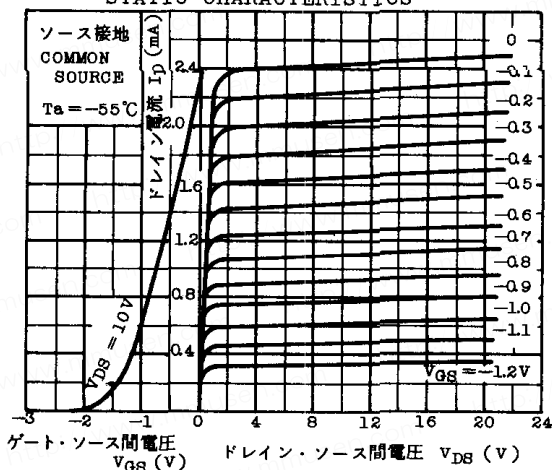


2SK11
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2SK15

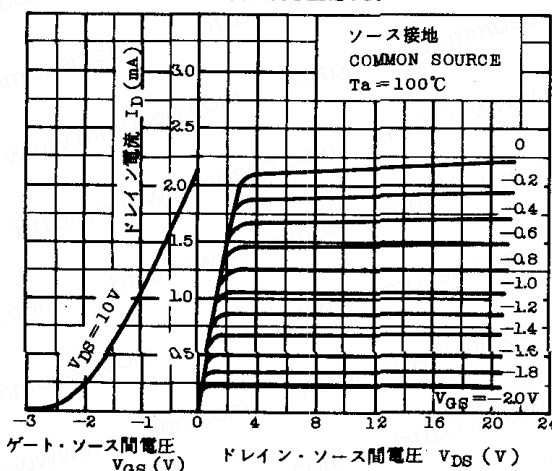
2SK11-O, 2SK12-Y, 2SK15-Y
STATIC CHARACTERISTICS



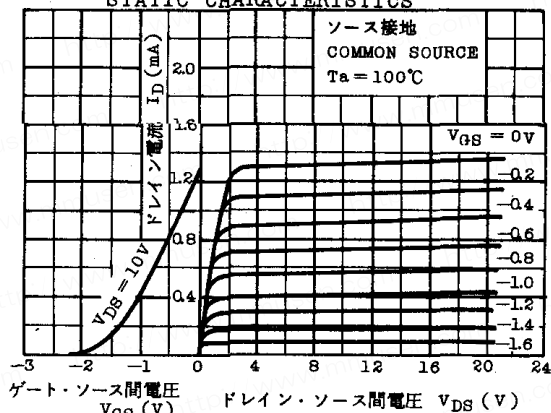
2SK11-O, 2SK12-Y, 2SK15-Y
STATIC CHARACTERISTICS



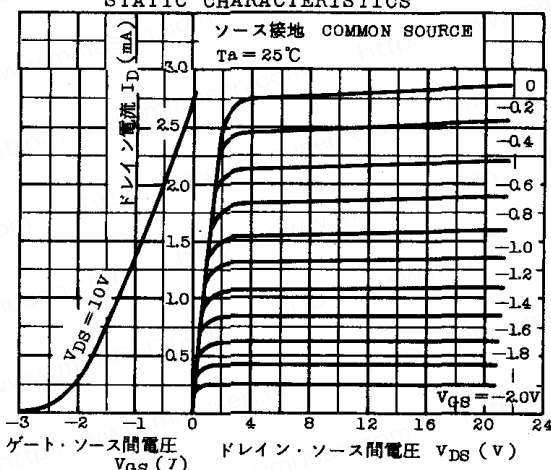
2SK11-Y, 2SK12-GR, 2SK15-GR
STATIC CHARACTERISTICS



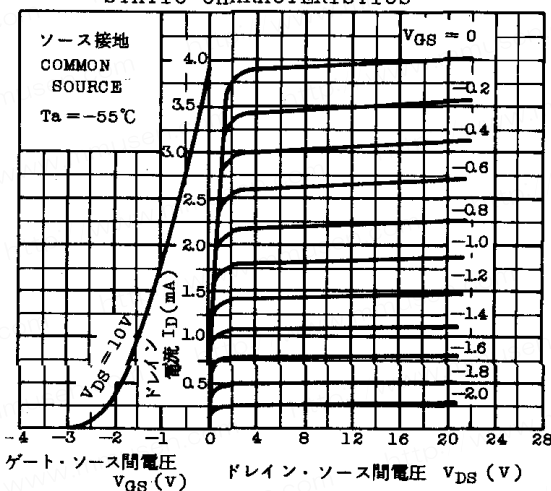
2SK11-O, 2SK12-Y, 2SK15-Y
STATIC CHARACTERISTICS



2SK11-Y, 2SK12-GR, 2SK15-GR
STATIC CHARACTERISTICS

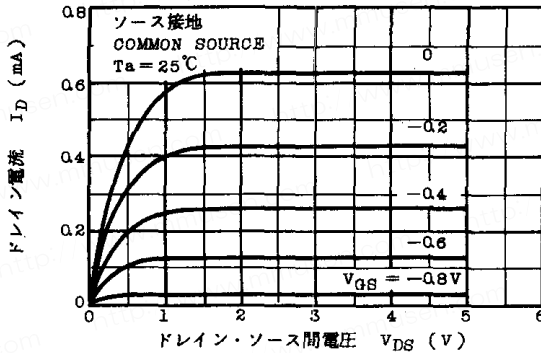


2SK11-Y, 2SK12-GR, 2SK15-GR
STATIC CHARACTERISTICS

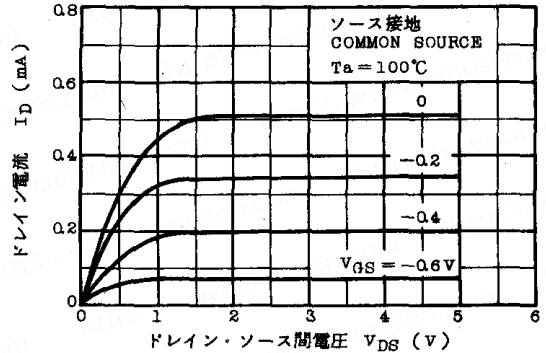


2SK11
2SK12
2SK15

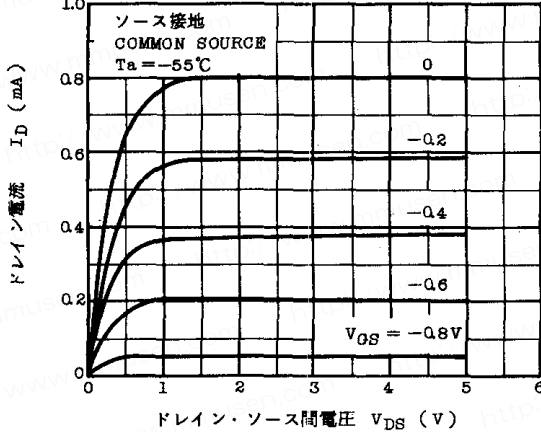
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 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



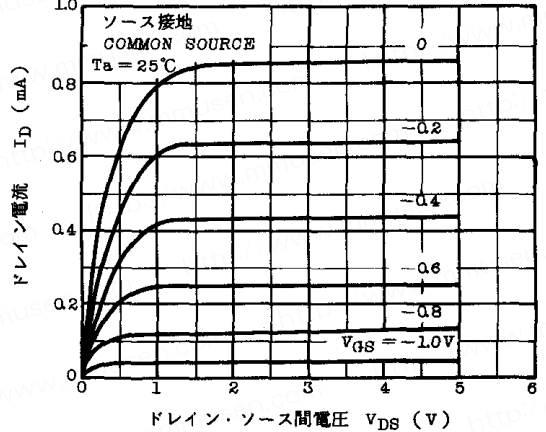
2SK11-R, 2SK12-R, 2SK15-R
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



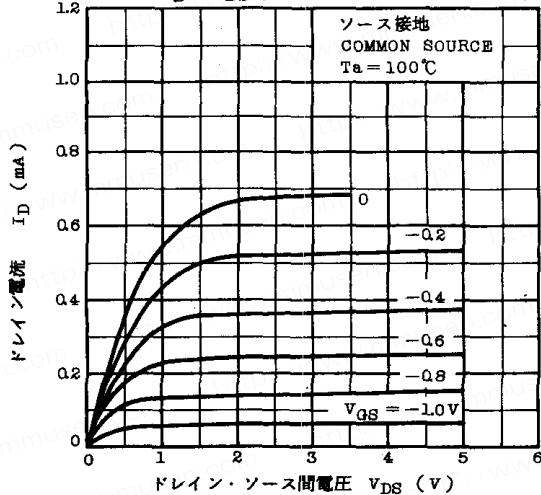
2SK11-R, 2SK12-R, 2SK15-R
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



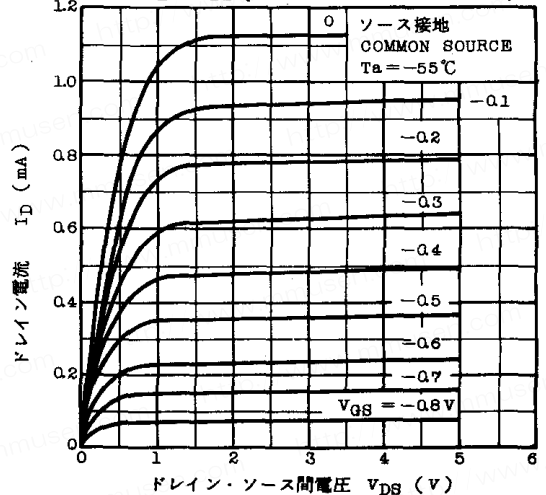
2SK11-O, 2SK12-O, 2SK15-O
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



2SK11-O, 2SK12-O, 2SK15-O
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)

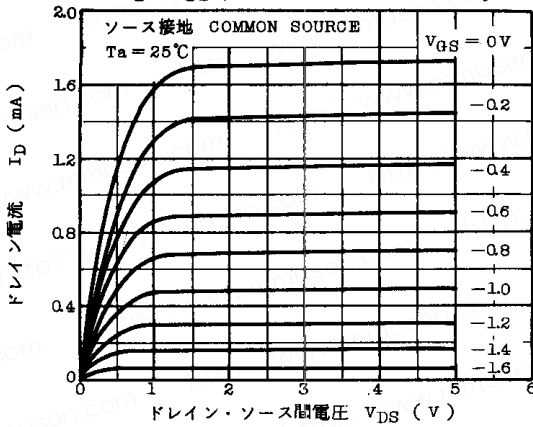


2SK11-O, 2SK12-O, 2SK15-O
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)

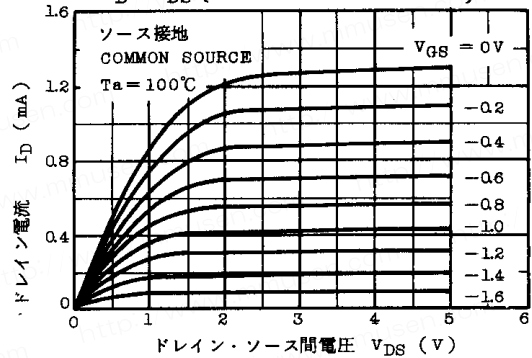


2SK11
2SK12
2SK15

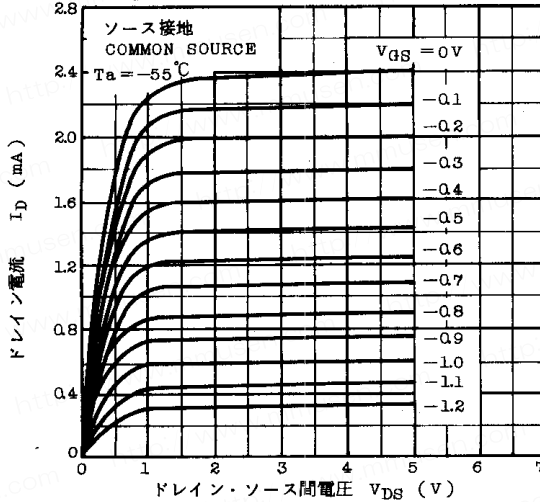
2SK11-O, 2SK12-Y, 2SK15-Y
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



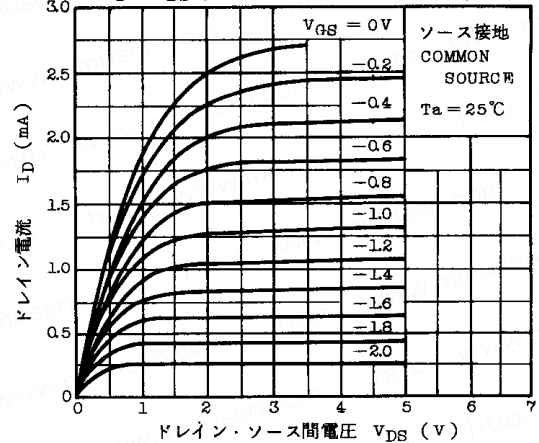
2SK11-O, 2SK12-Y, 2SK15-Y
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



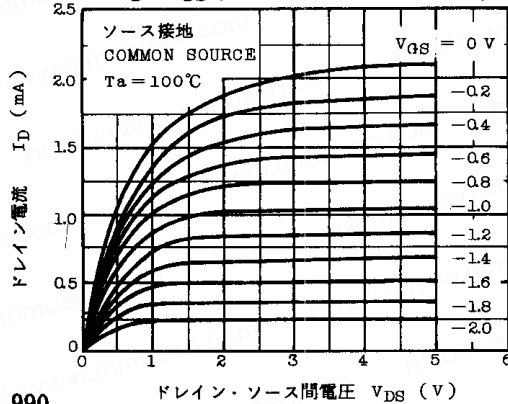
2SK11-O, 2SK12-Y, 2SK15-Y
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



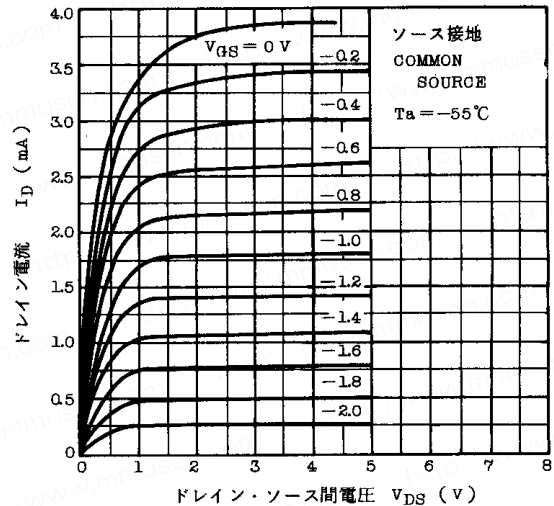
2SK11-Y, 2SK12-GR, 2SK15-GR
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



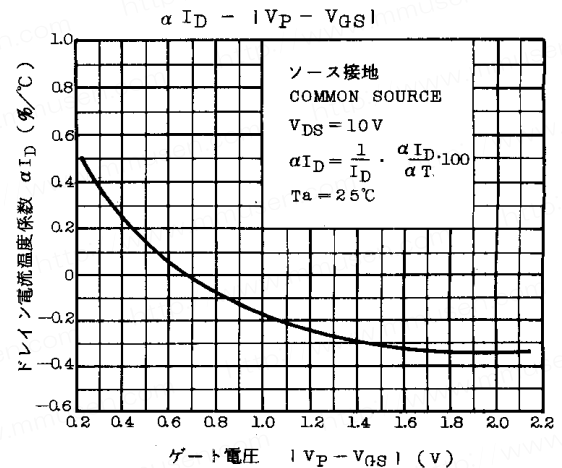
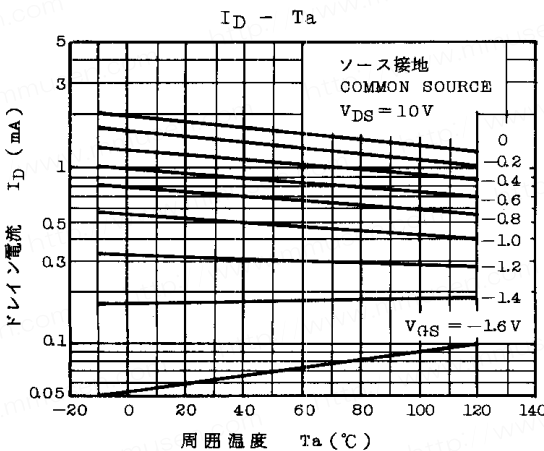
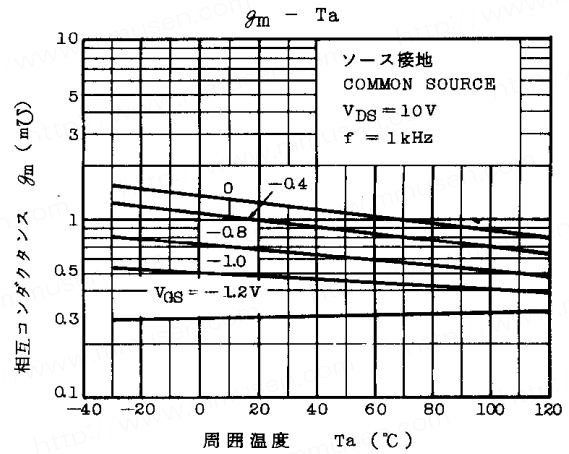
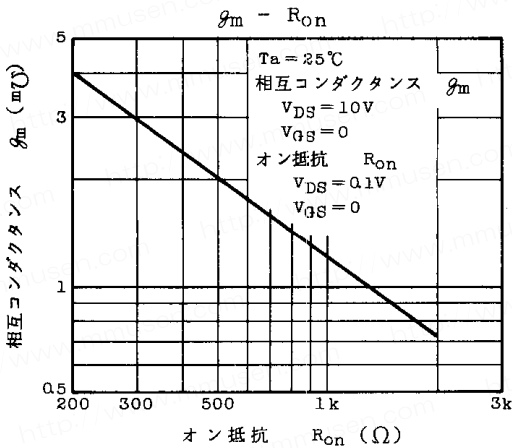
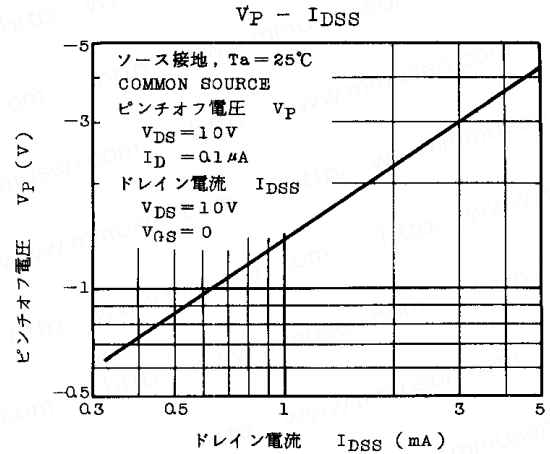
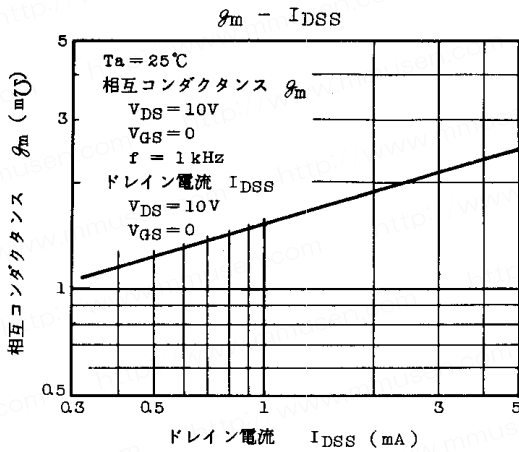
2SK11-Y, 2SK12-GR, 2SK15-GR
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



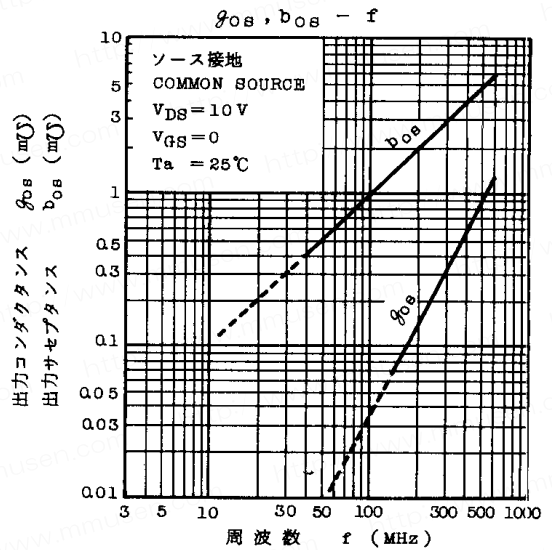
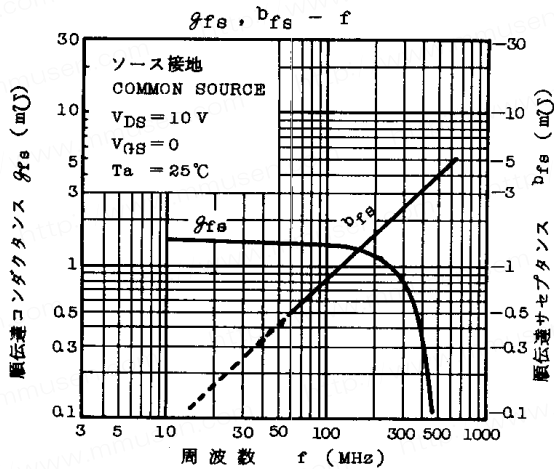
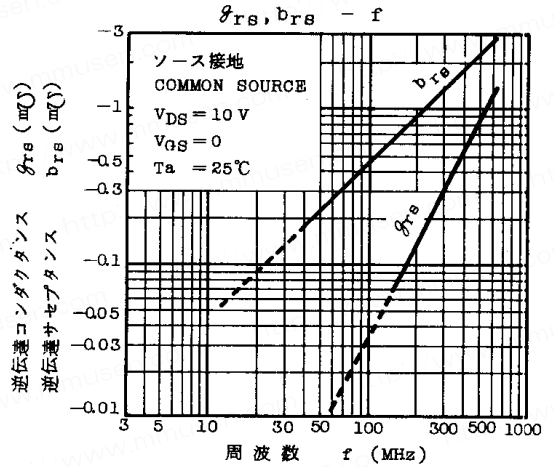
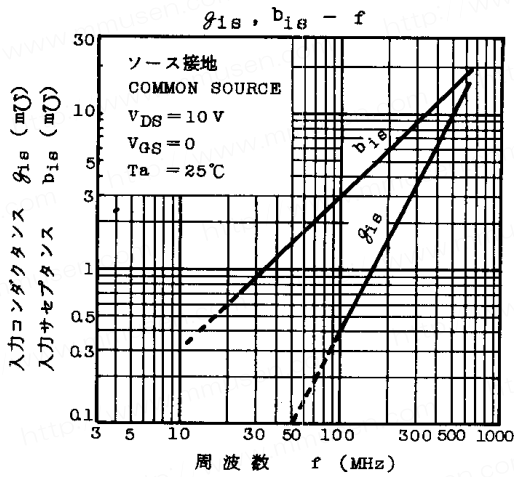
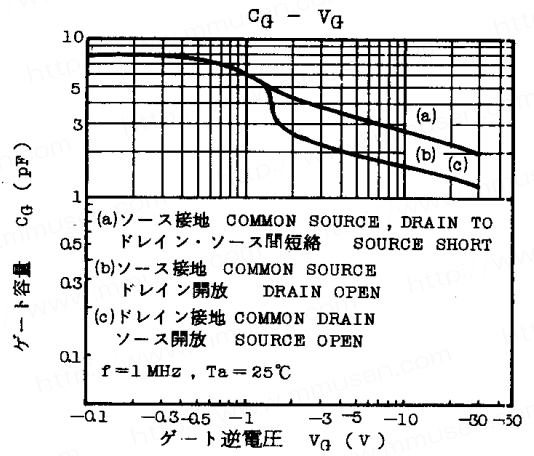
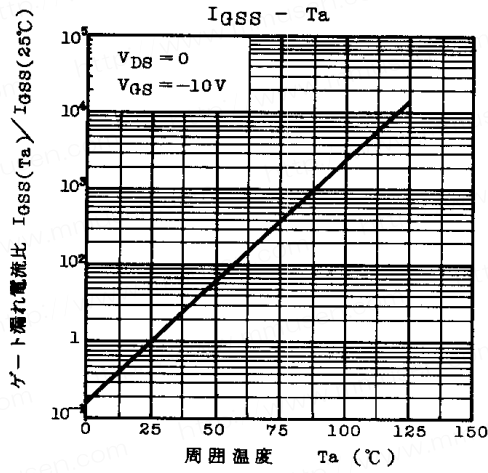
2SK11-Y, 2SK12-GR, 2SK15-GR
 $I_D - V_{DS}$ (LOW VOLTAGE REGION)



2SK11
2SK12
2SK15



2SK11
2SK12
2SK15



2SK11
2SK12
2SK15

