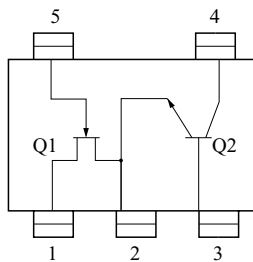


AM BAND AMPLIFLER APPLICATION

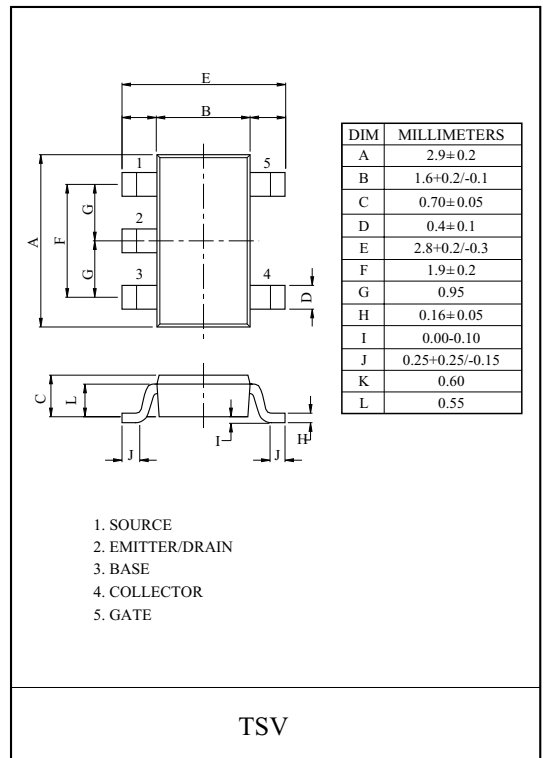
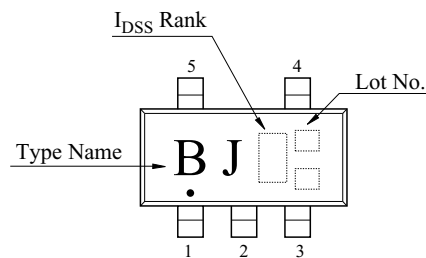
FEATURES

- Composite type with J-FET and NPN transistors contained in a package.
improving the mounting efficiency
- Drain and emitter are shared.

EQUIVALENT CIRCUIT (TOP VIEW)



Marking

Q₁ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Drain-Source Voltage	V_{DSX}	15	V
Gate-Drain Voltage	V_{GDS}	-15	V
Gate Current	I_G	10	mA
Drain Current	I_D	50	mA

Q₂ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector-Base Voltage	V_{CBO}	60	V
Collector-Emitter Voltage	V_{CEO}	50	V
Emitter-Base Voltage	V_{EBO}	5	V
Collector Current	I_C	150	mA
Base Current	I_B	30	mA

Q₁, Q₂ MAXIMUM RATING (Ta=25 °C)

CHARACTERISTIC	SYMBOL	RATING	UNIT
Collector Power Dissipation	P_C^*	0.9	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_{stg}	-55~150	°C

* Package mounted on a ceramic board (600mm² × 0.8mm)

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Q₁ ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Gate-Drain Breakdown Voltage	$V_{(BR)GDS}$	$V_{DS}=0V, I_G=-10\mu A$	-15	-	-	V
Gate-Source Cut-off Voltage	$V_{GS(OFF)}$	$V_{DS}=5V, I_D=100\mu A$	-0.4	-0.7	-1.5	V
Gate Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=-10V$	-	-	-1.0	nA
Drain Current	$I_{DSS}(\text{Note})$	$V_{DS}=5V, V_{GS}=0V$	10.0	-	32.0	mA
Forward Transfer Admittance	$ y_{fs} $	$V_{DS}=5V, V_{GS}=0V, f=1kHz$	24	35	-	mS
Input Capacitance	C_{iss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$	-	10.0	-	pF
Reverse Transfer Capacitance	C_{rss}	$V_{DS}=5V, V_{GS}=0V, f=1MHz$	-	2.9	-	pF
Noise Figure	NF	$V_{DS}=5V, R_g=1k\ \Omega, I_D=1mA, f=1kHz,$	-	1.0	-	dB

Note : I_{DSS} Classification G : 10.0~20.0 , H : 16.0~32.0

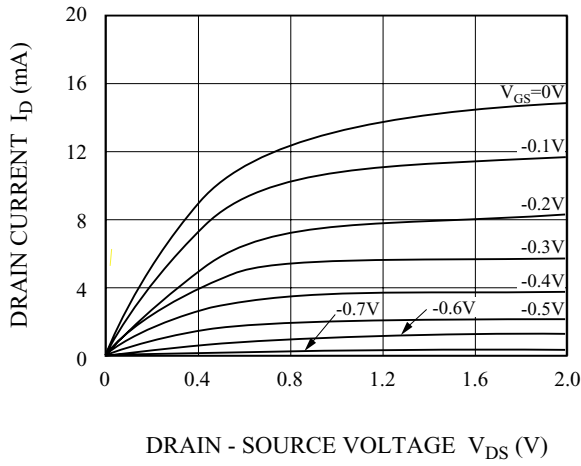
Q₂ ELECTRICAL CHARACTERISTICS (Ta=25 °C)

CHARACTERISTIC	SYMBOL	TEST CONDITION	MIN.	TYP.	MAX.	UNIT
Collector Cut-off Current	I_{CBO}	$V_{CB}=60V, I_E=0$	-	-	0.1	μA
Emitter Cur-off Current	I_{EBO}	$V_{EB}=5V, I_C=0$	-	-	0.1	μA
DC Current Gain	h_{FE}	$V_{CE}=6V, I_C=2mA$	135	-	400	-
Collector-Emitter Saturation Voltage	$V_{CE(sat)}$	$I_C=100mA, I_B=10mA$	-	0.1	0.25	V
Base-Emitter Saturation Voltage	$V_{BE(sat)}$	$I_C=100mA, I_B=10mA$	-	0.86	1.0	V
Transition Frequency	f_r	$V_{CE}=10V, I_C=1mA$	80	-	-	MHz
Collector Output Capacitance	C_{ob}	$V_{CB}=10V, I_E=0, f=1MHz$	-	2.0	3.5	pF
Noise Figure	NF	$V_{CE}=6V, I_C=0.1mA,$ $f=1kHz, R_g=10k\ \Omega$	-	1.0	10	dB

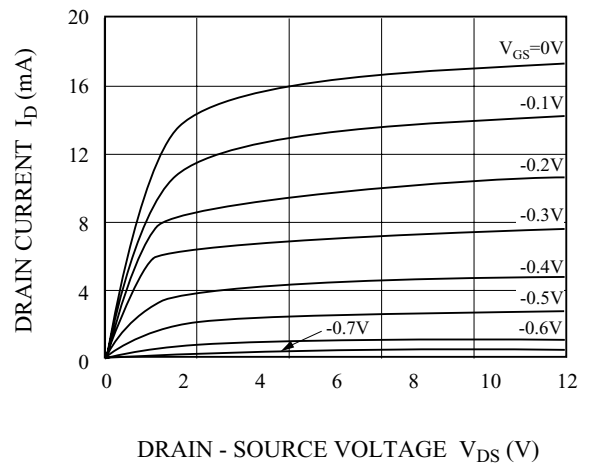
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Q₁ (JFET)

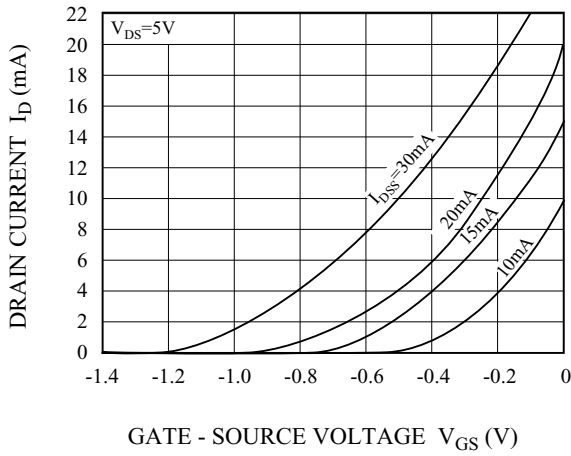
$I_D - V_{DS}$



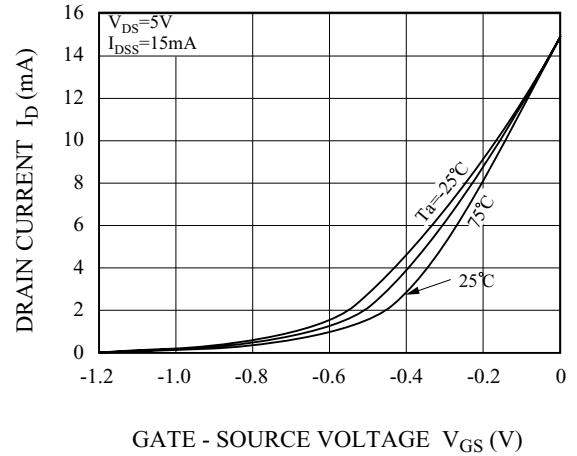
$I_D - V_{DS}$



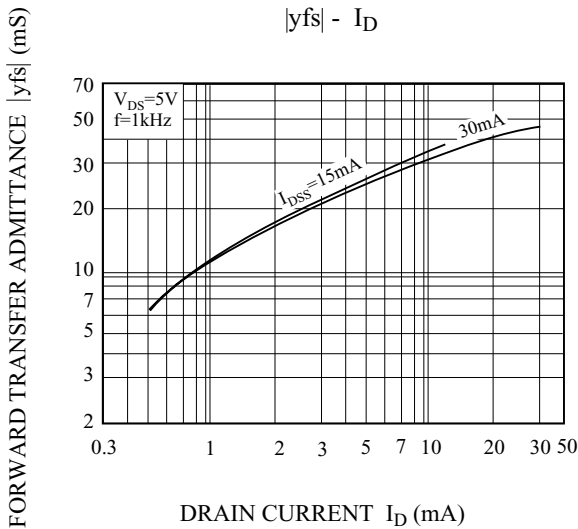
$I_D - V_{GS}$



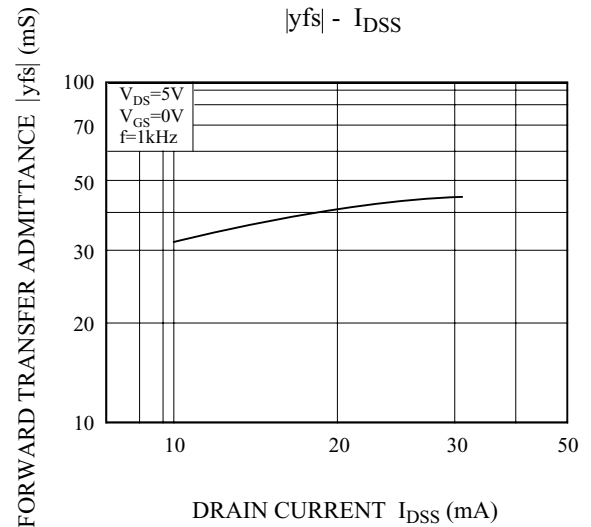
$I_D - V_{GS}$



$|y_{fs}| - I_D$



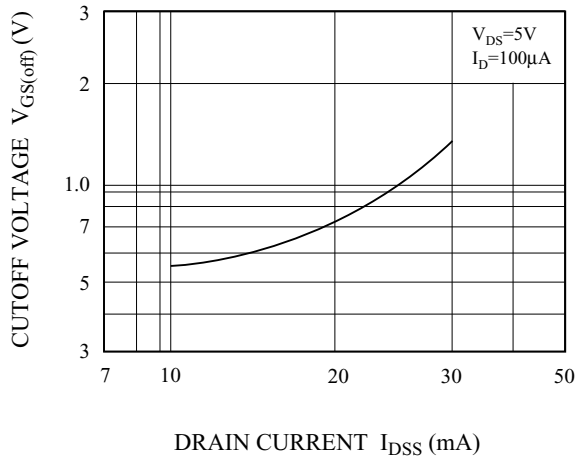
$|y_{fs}| - I_{DSS}$



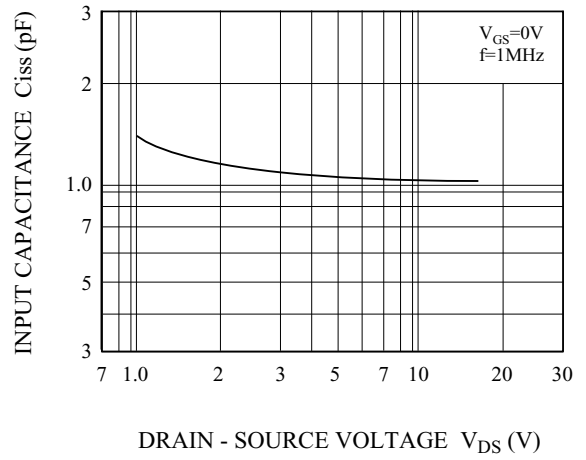
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Q₁ (JFET)

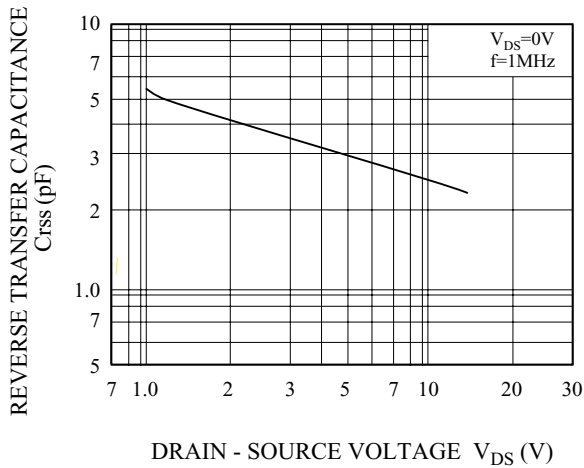
$V_{GS(off)} - I_{DSS}$



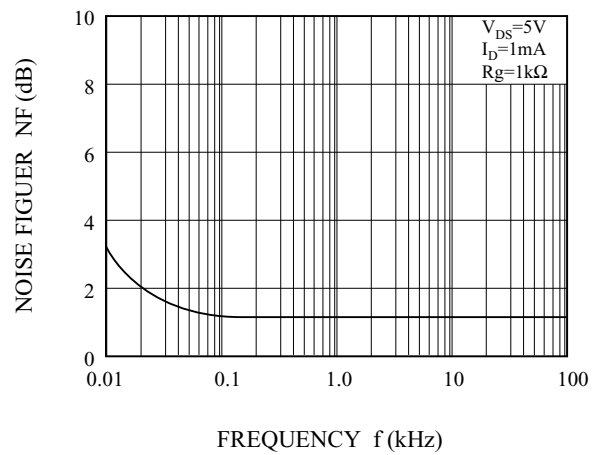
$C_{iss} - V_{DS}$



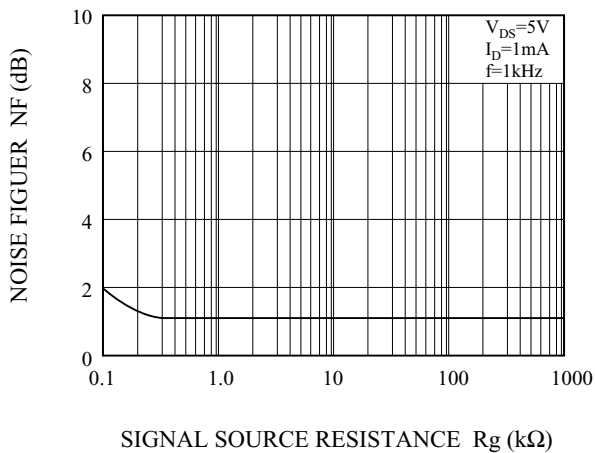
$C_{rss} - V_{DS}$



NF - f



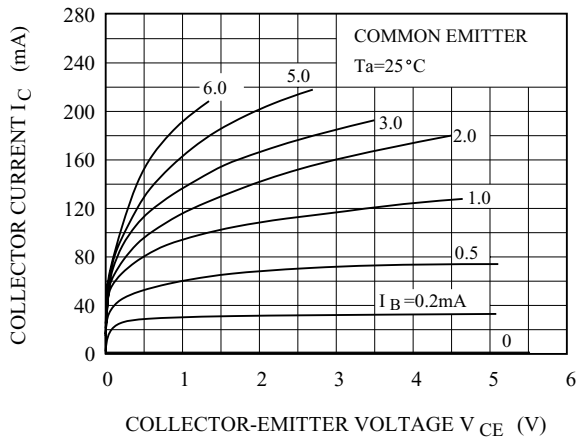
NF - R_g



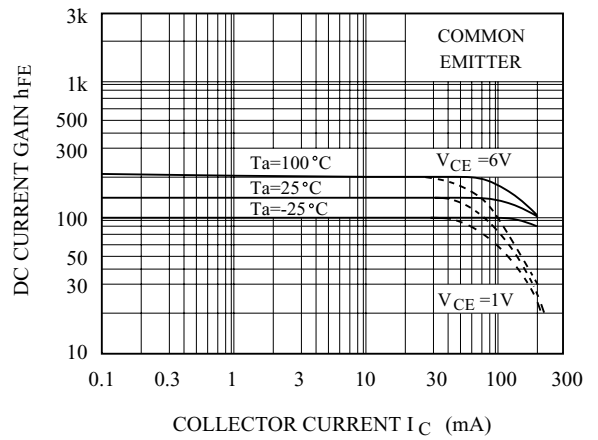
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Q₂ (NPN TRANSISOR)

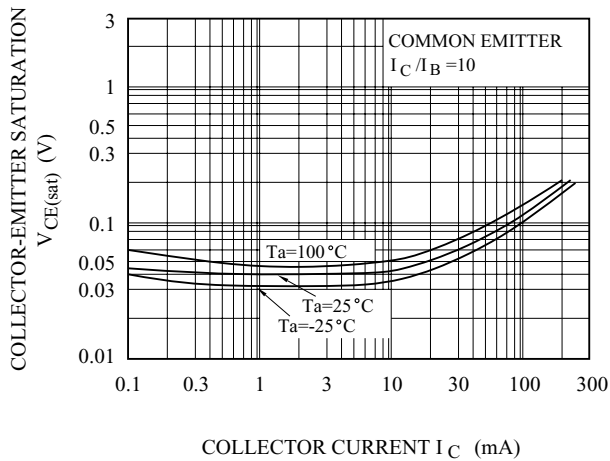
$I_C - V_{CE}$



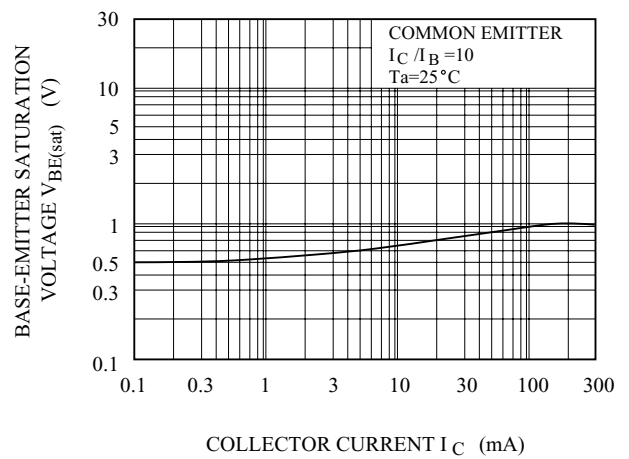
$h_{FE} - I_C$



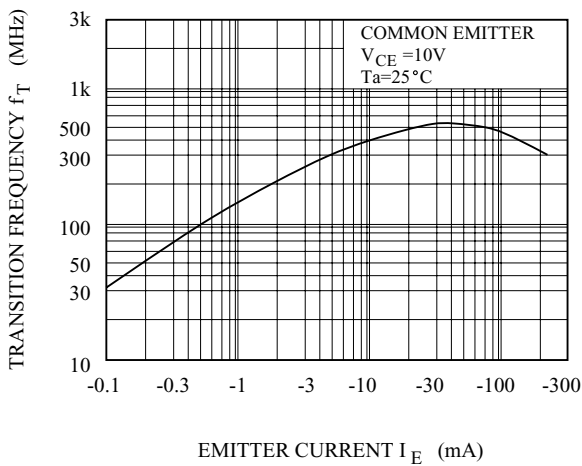
$V_{CE(sat)} - I_C$



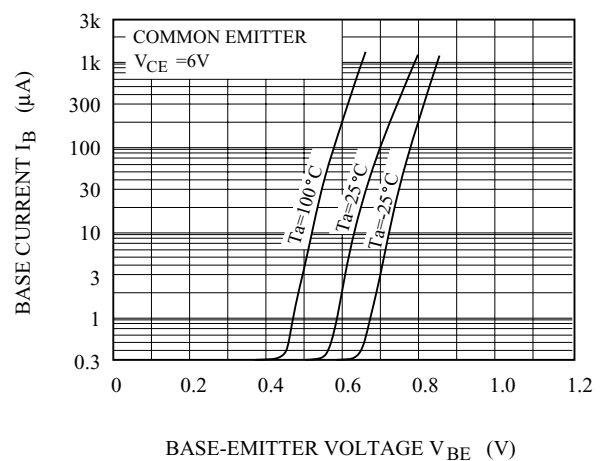
$V_{BE(sat)} - I_C$



$f_T - I_E$



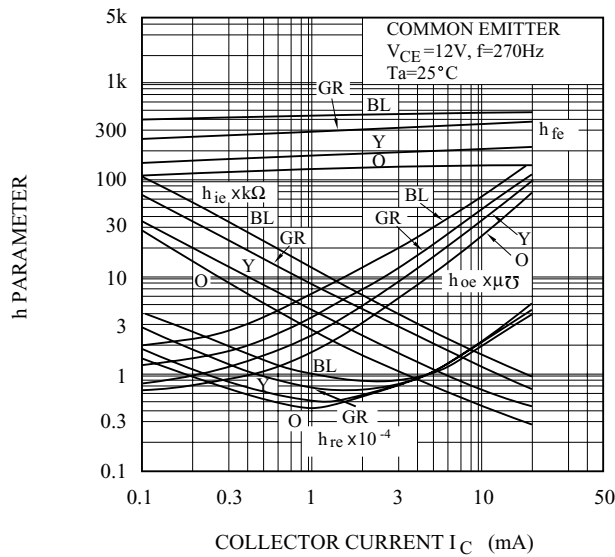
$I_B - V_{BE}$



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Q₂ (NPN TRANSISOR)

h PARAMETER - I_C



h PARAMETER - V_{CE}

