N-CHANNEL SILICON FIELD-EFFECT TRANSISTORS

Symmetrical N-channel planar epitaxial junction field-effect transistors in a plastic TO-92 variant; intended for hi-fi amplifiers and other audio-frequency equipment.

QUICK REFERENCE DATA

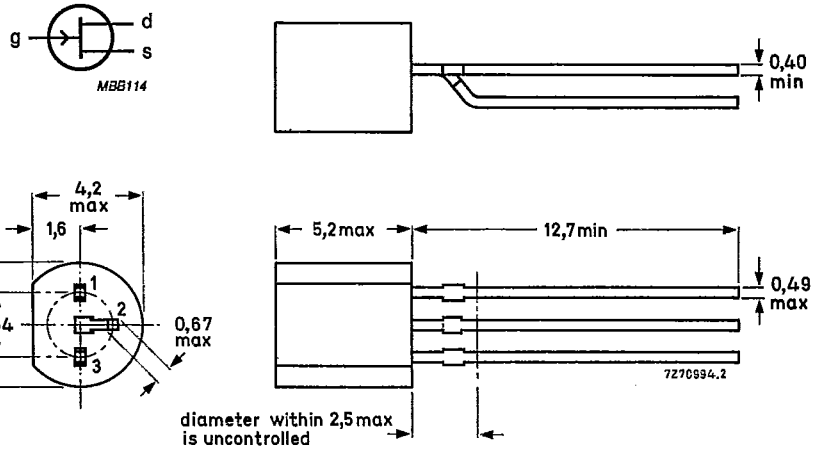
Drain-source voltage	$\pm V_{DS}$	max.	30 V
Total power dissipation up to T_{amb} = 75 °C	P_{tot}	max.	300 mW
Junction temperature	T_j	max.	150 °C
Drain current V_{DS} = 15 V; V_{GS} = 0	I_{DSS}		2 to 12 mA
Transfer admittance (common source) V_{DS} = 15 V; V_{GS} = 0; f = 1 kHz	$\|y_{fs}\|$	typ.	3,5 mS
Noise figure at V_{DS} = 15 V; V_{GS} = 0 f = 1 kHz; R_G = 1 MΩ	F	<	2 dB

MECHANICAL DATA

Dimensions in mm

Fig. 1 TO-92 variant.

Pinning:
1 = drain
2 = source
3 = gate



Note: Drain and source are interchangeable

RATINGS Limiting values in accordance with the Absolute Maximum System (IEC134)

Drain-source voltage	$\pm V_{DS}$	max.	30	V
Drain-gate voltage (open source)	V_{DGO}	max.	30	V
Gate-source voltage (open drain)	$-V_{GSO}$	max.	30	V
Gate current	I_G	max.	10	mA
Total power dissipation up to T_{amb} = 75 °C	P_{tot}	max.	300	mW
Storage temperature range	T_{stg}	−65 to +150		°C
Junction temperature	T_j	max.	150	°C

THERMAL RESISTANCE

From junction to ambient in free air	$R_{th\ j-a}$	=	250	K/W

CHARACTERISTICS

T_j = 25 °C unless otherwise specified

			BC264A	B	C	D	
Gate cut-off current							
$-V_{GS}$ = 20 V; V_{DS} = 0	$-I_{GSS}$	<	5	5	5	5	nA
Drain current							
V_{DS} = 15 V; V_{GS} = 0	I_{DSS}	>	2,0	3,5	5,0	7,0	mA
		<	4,5	6,5	8,0	12,0	mA
Gate-source breakdown voltage							
$-I_G$ = 1 µA; V_{DS} = 0	$-V_{(BR)GSS}$	>	30	30	30	30	V
Gate-source voltage							
I_D = 200 µA ; V_{DS} = 15 V	$-V_{GS}$	>	0,4	0,4	0,4	0,4	V
I_D = 1,0 mA; V_{DS} = 15 V	$-V_{GS}$	>	0,2	–	–	–	V
		<	1,2	–	–	–	V
I_D = 1,5 mA; V_{DS} = 15 V	$-V_{GS}$	>	–	0,4	–	–	V
		<	–	1,4	–	–	V
I_D = 2,5 mA; V_{DS} = 15 V	$-V_{GS}$	>	–	–	0,5	–	V
		<	–	–	1,5	–	V
I_D = 3,5 mA; V_{DS} = 15 V	$-V_{GS}$	>	–	–	–	0,6	V
		<	–	–	–	1,6	V
Gate-source cut-off voltage							
I_D = 10 nA ; V_{DS} = 15 V	$-V_{(P)GS}$	>	0,5	0,5	0,5	0,5	V
y-parameters at T_{amb} = 25 °C							
V_{DS} = 15 V; V_{GS} = 0; f = 1 kHz							
Transfer admittance	$\lvert y_{fs} \rvert$	>	2,5	3,0	3,5	4,0	mS
V_{DS} = 15 V; $-V_{GS}$ = 1 V; f = 1 MHz							
Input capacitance	C_{is}		typ.	4,0			pF
Feedback capacitance	C_{rs}		typ.	1,2			pF
Output capacitance	C_{os}		typ.	1,6			pF
Noise figure at f = 1 kHz; R_G = 1 MΩ							
V_{DS} = 15 V; V_{GS} = 0; T_{amb} = 25 °C	F		typ.	0,5			dB
			<	2			dB
Equivalent noise voltage at T_{amb} = 25 °C							
V_{DS} = 15 V; V_{GS} = 0; f = 10 Hz	$V_n/\sqrt{B}$		typ.	40			$nV/\sqrt{Hz}$

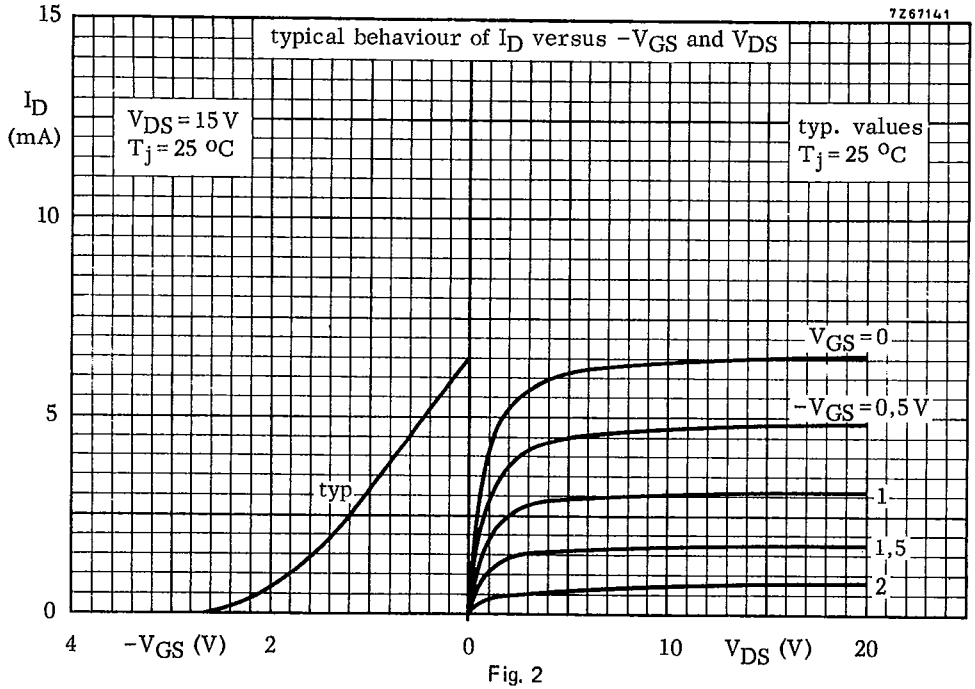


Fig. 2

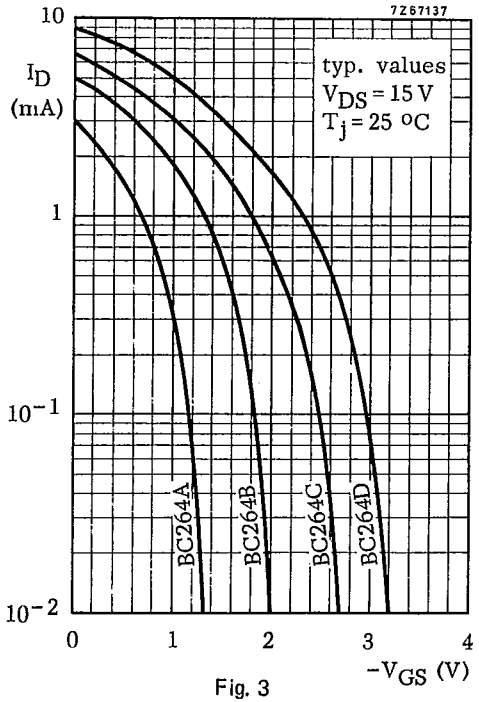


Fig. 3

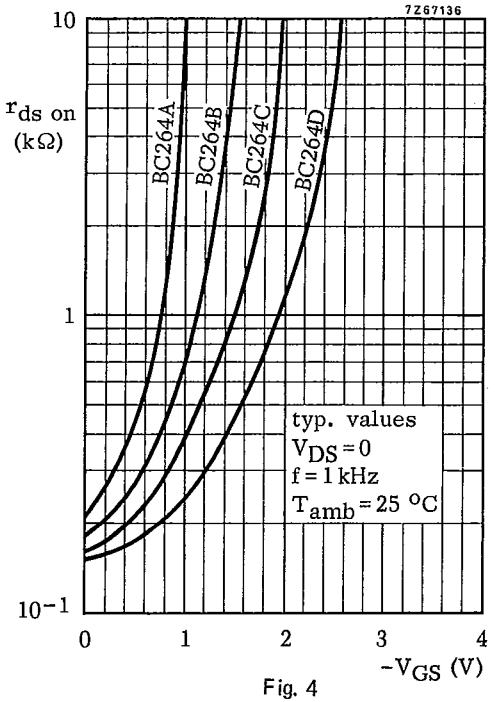


Fig. 4

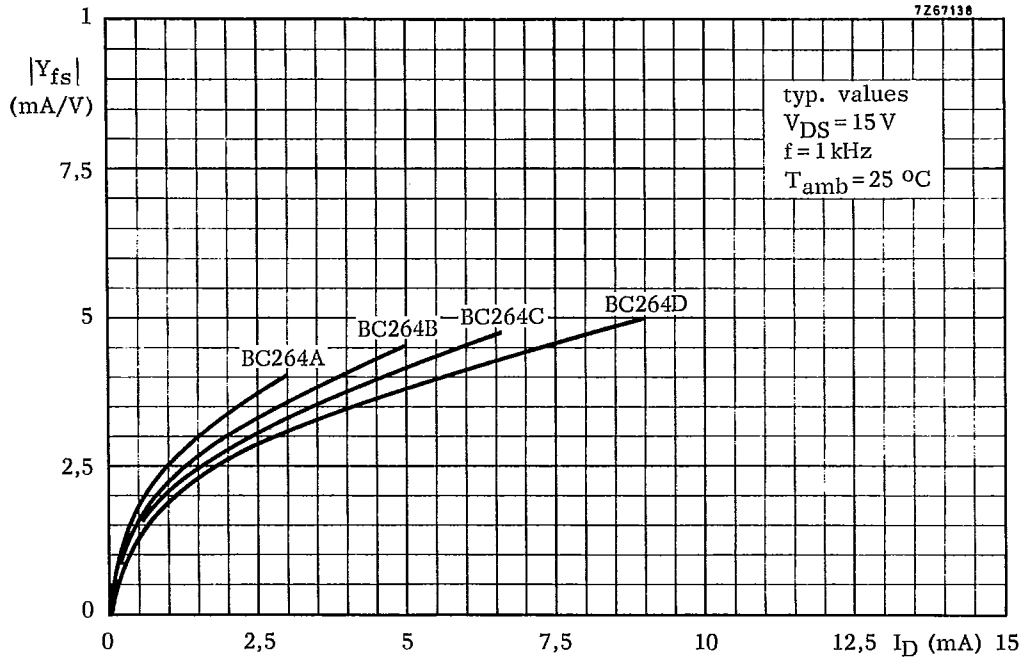


Fig. 5

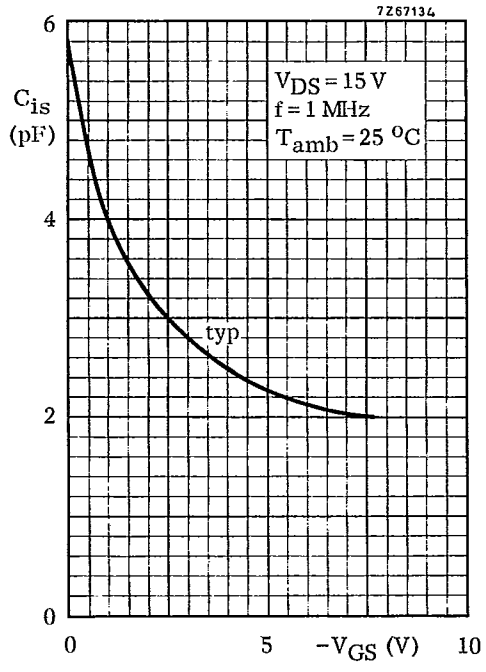


Fig. 6

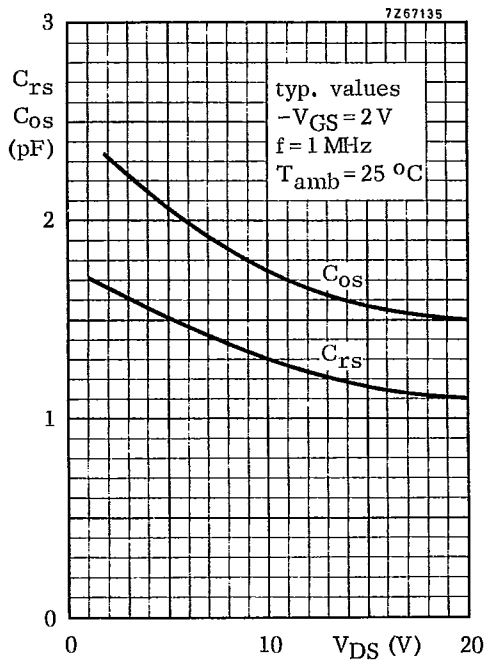


Fig. 7

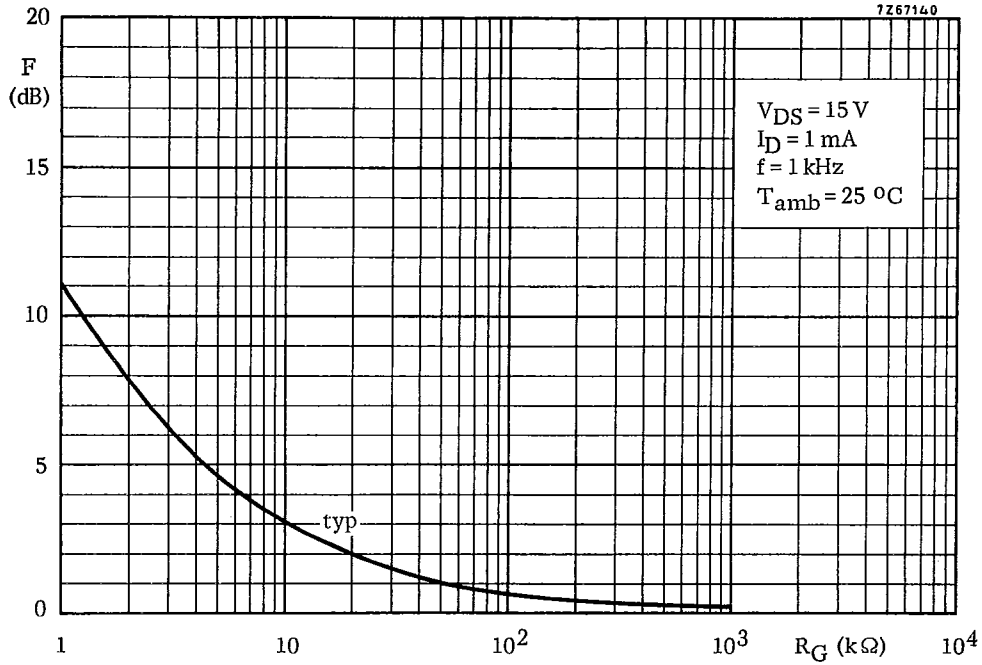

7Z67140
20
F
(dB)
15
10
5
0
1
10
10^2
10^3
R_G (kΩ)
10^4
typ
V_{DS} = 15 V
I_D = 1 mA
f = 1 kHz
T_{amb} = 25 °C

Fig. 8

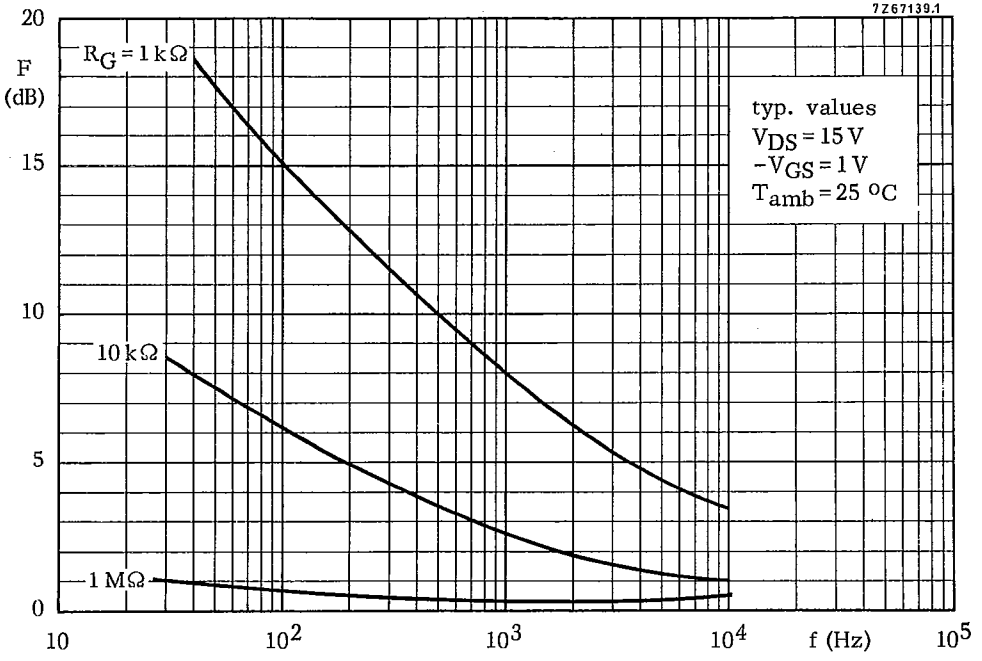

7Z67139.1
20
F
(dB)
15
10
5
0
10
10^2
10^3
10^4
f (Hz)
10^5
R_G = 1 kΩ
10 kΩ
1 MΩ
typ. values
V_{DS} = 15 V
$-V_{GS}$ = 1 V
T_{amb} = 25 °C

Fig. 9