

## 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 $T_{amb} = 75\text{ }^{\circ}\text{C}$	$P_{tot}$	max.	300 mW
Junction temperature	$T_j$	max.	150 $^{\circ}\text{C}$
Drain current $V_{DS} = 15\text{ V}; V_{GS} = 0$	$I_{DSS}$		2 to 12 mA
Transfer admittance (common source) $V_{DS} = 15\text{ V}; V_{GS} = 0; f = 1\text{ kHz}$	$ Y_{fs} $	typ.	3,5 mS
Noise figure at $V_{DS} = 15\text{ V}; V_{GS} = 0$ $f = 1\text{ kHz}; R_G = 1\text{ M}\Omega$	F	<	2 dB

### MECHANICAL DATA

Dimensions in mm

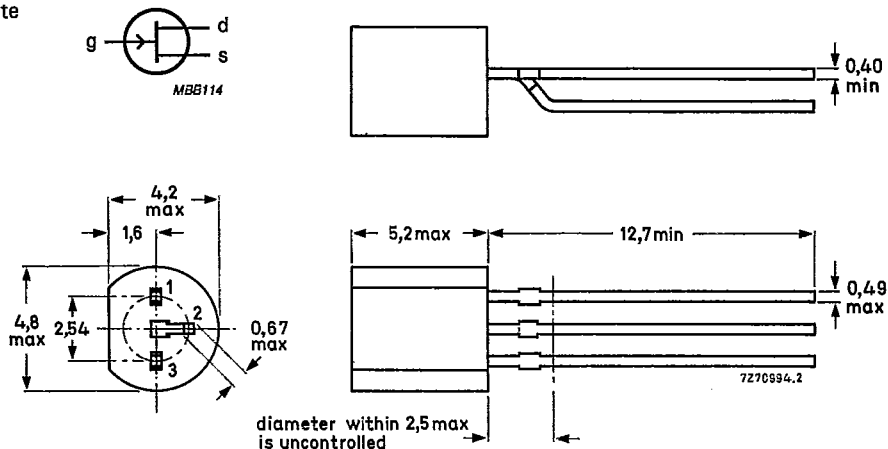
Fig. 1 TO-92 variant.

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 $T_{amb} = 75\text{ }^\circ\text{C}$	$P_{tot}$	max.	300	mW
Storage temperature range	$T_{stg}$		-65 to +150	$^\circ\text{C}$
Junction temperature	$T_j$	max.	150	$^\circ\text{C}$
<b>THERMAL RESISTANCE</b>				
From junction to ambient in free air	$R_{th\ j-a}$	=	250	K/W

**CHARACTERISTICS**

$T_j = 25\text{ }^\circ\text{C}$  unless otherwise specified

		BC264A	B	C	D	
Gate cut-off current						
$-V_{GS} = 20\text{ V}; V_{DS} = 0$	$-I_{GSS}$	< 5	5	5	5	nA
Drain current						
$V_{DS} = 15\text{ V}; V_{GS} = 0$	$I_{DSS}$	> 2,0 < 4,5	3,5 6,5	5,0 8,0	7,0 12,0	mA
Gate-source breakdown voltage						
$-I_G = 1\text{ }\mu\text{A}; V_{DS} = 0$	$-V_{(BR)GSS}$	> 30	30	30	30	V
Gate-source voltage						
$I_D = 200\text{ }\mu\text{A}; V_{DS} = 15\text{ V}$	$-V_{GS}$	> 0,4	0,4	0,4	0,4	V
$I_D = 1,0\text{ mA}; V_{DS} = 15\text{ V}$	$-V_{GS}$	> 0,2 < 1,2	-	-	-	V
$I_D = 1,5\text{ mA}; V_{DS} = 15\text{ V}$	$-V_{GS}$	> - < -	0,4 1,4	-	-	V
$I_D = 2,5\text{ mA}; V_{DS} = 15\text{ V}$	$-V_{GS}$	> - < -	-	0,5 1,5	-	V
$I_D = 3,5\text{ mA}; V_{DS} = 15\text{ V}$	$-V_{GS}$	> - < -	-	-	0,6 1,6	V
Gate-source cut-off voltage						
$I_D = 10\text{ nA}; V_{DS} = 15\text{ V}$	$-V_{(P)GS}$	> 0,5	0,5	0,5	0,5	V
y-parameters at $T_{amb} = 25\text{ }^\circ\text{C}$						
$V_{DS} = 15\text{ V}; V_{GS} = 0; f = 1\text{ kHz}$						
Transfer admittance	$ y_{fs} $	> 2,5	3,0	3,5	4,0	mS
$V_{DS} = 15\text{ V}; -V_{GS} = 1\text{ V}; f = 1\text{ MHz}$						
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 $f = 1\text{ kHz}; R_G = 1\text{ M}\Omega$						
$V_{DS} = 15\text{ V}; V_{GS} = 0; T_{amb} = 25\text{ }^\circ\text{C}$	F	typ. <		0,5 2		dB dB
Equivalent noise voltage at $T_{amb} = 25\text{ }^\circ\text{C}$						
$V_{DS} = 15\text{ V}; V_{GS} = 0; f = 10\text{ Hz}$	$V_n/\sqrt{B}$	typ.		40		nV/ $\sqrt{\text{Hz}}$

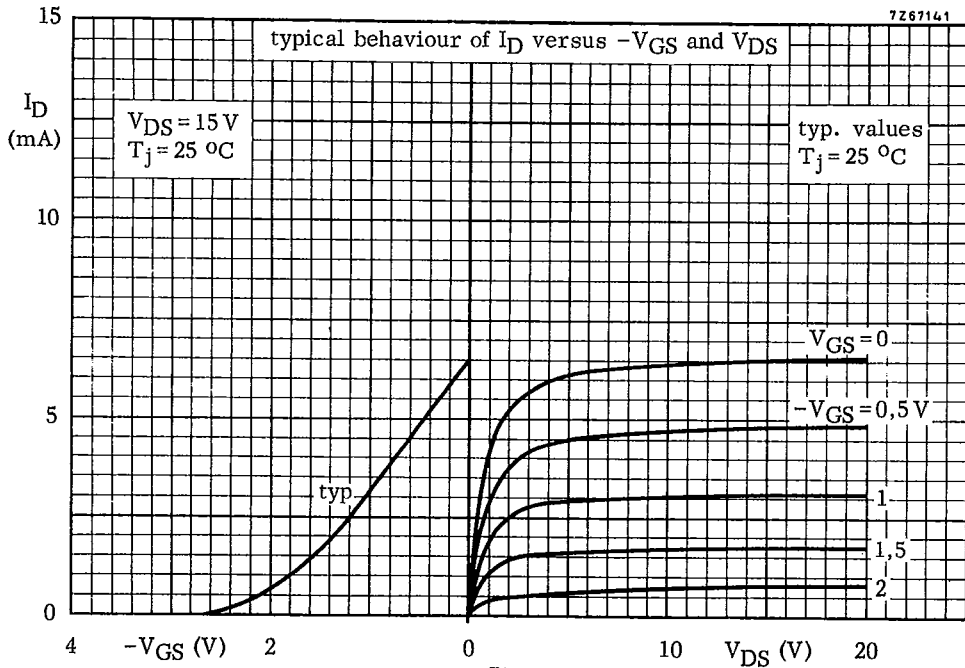


Fig. 2

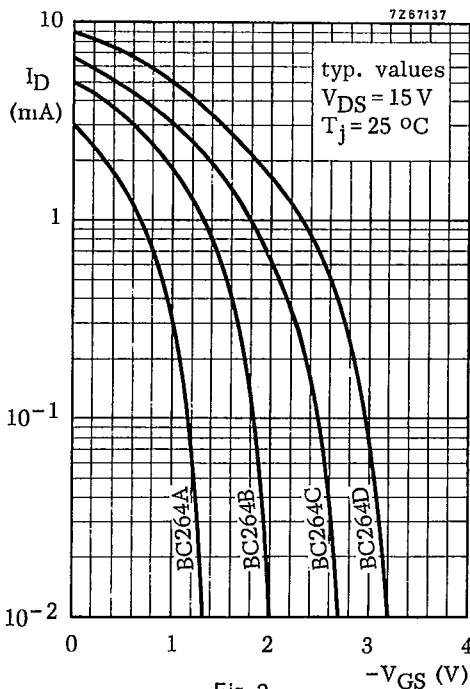


Fig. 3

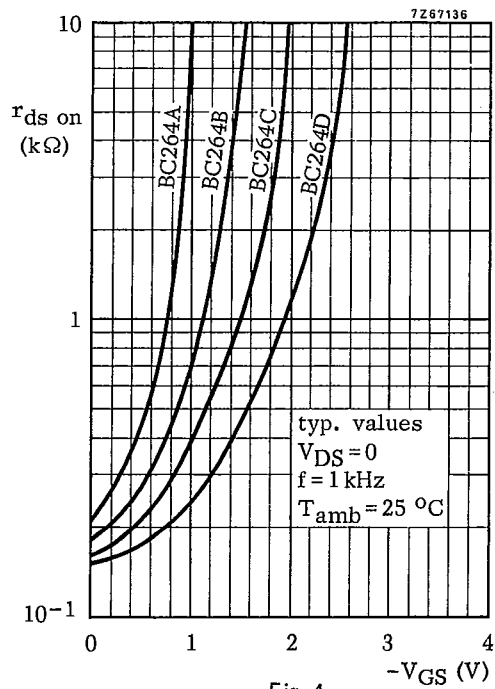


Fig. 4

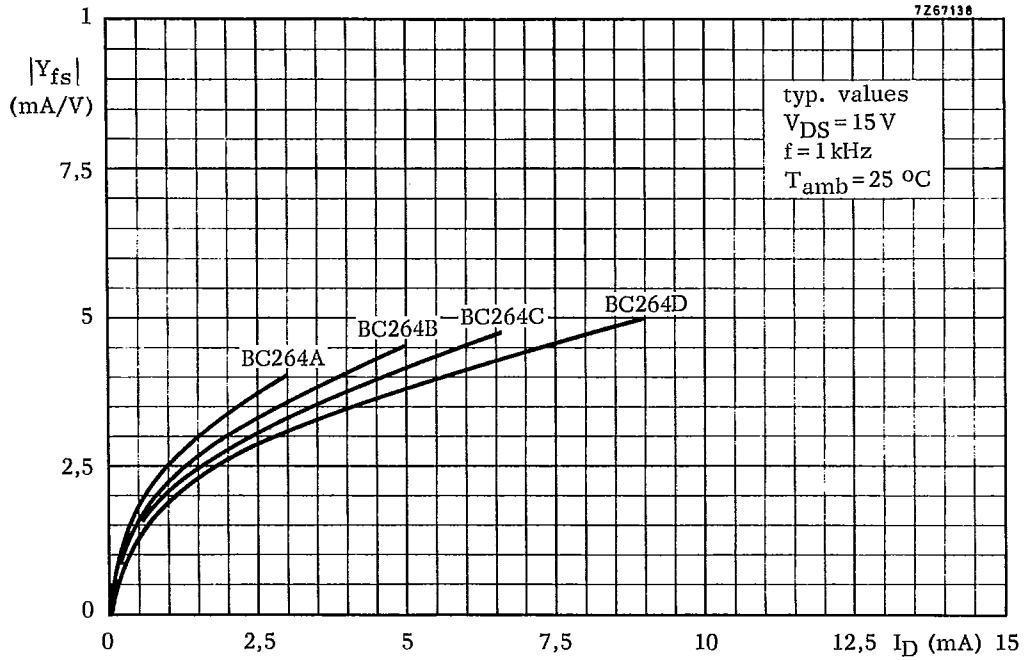


Fig. 5

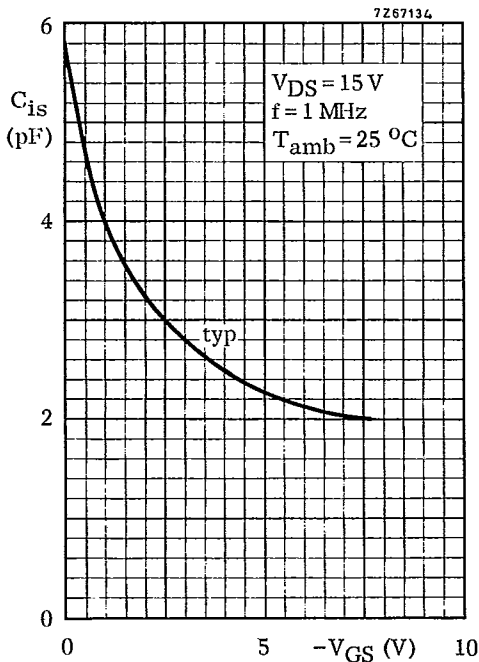


Fig. 6

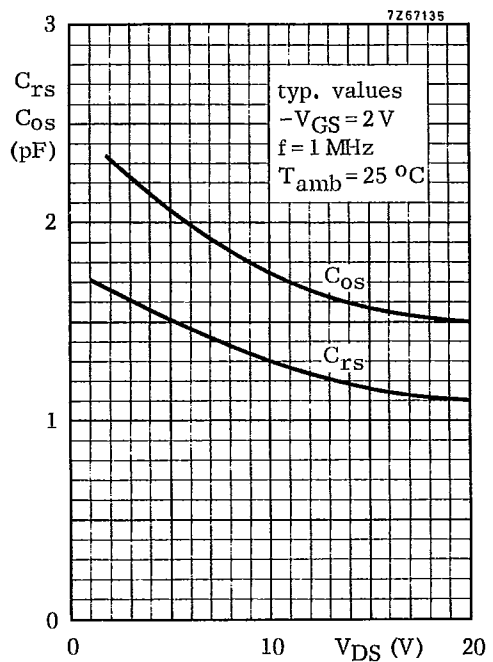


Fig. 7

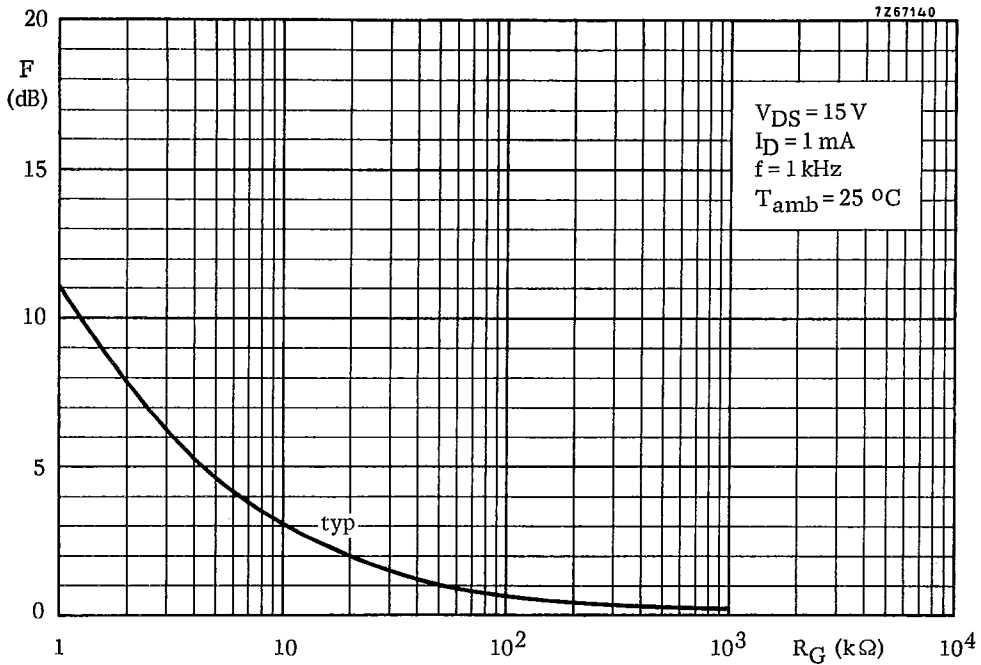


Fig. 8

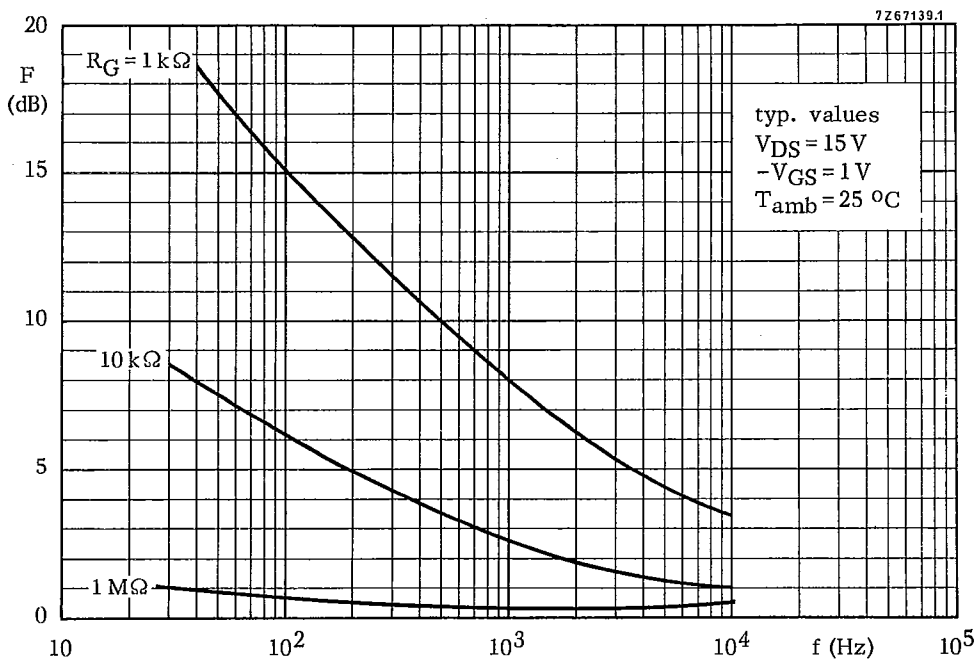


Fig. 9