

## 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

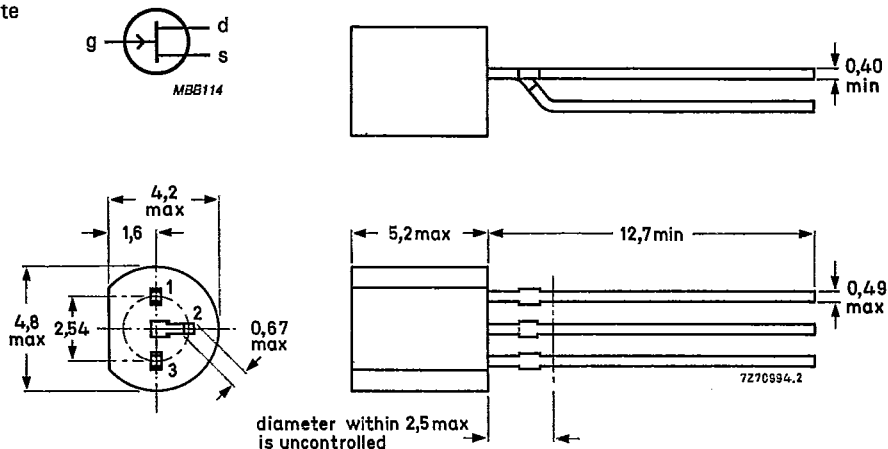
### MECHANICAL DATA

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 $T_{amb} = 75^\circ\text{C}$	$P_{tot}$	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

Gate cut-off current

$-V_{GS} = 20\text{ V}; V_{DS} = 0$

	BC264A	B	C	D
$-I_{GSS}$	< 5	5	5	5 nA

Drain current

$V_{DS} = 15\text{ V}; V_{GS} = 0$

$I_{DSS}$	> 2,0	3,5	5,0	7,0 mA
	< 4,5	6,5	8,0	12,0 mA

Gate-source breakdown voltage

$-I_G = 1\text{ }\mu\text{A}; V_{DS} = 0$

$-V_{(BR)GSS}$	> 30	30	30	30 V
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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
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$I_D = 1,0\text{ mA}; V_{DS} = 15\text{ V}$

$-V_{GS}$	> 0,2	-	-	- V
	< 1,2	-	-	- V

$I_D = 1,5\text{ mA}; V_{DS} = 15\text{ V}$

$-V_{GS}$	> -	0,4	-	- V
	< -	1,4	-	- V

$I_D = 2,5\text{ mA}; V_{DS} = 15\text{ V}$

$-V_{GS}$	> -	-	0,5	- V
	< -	-	1,5	- V

$I_D = 3,5\text{ mA}; V_{DS} = 15\text{ V}$

$-V_{GS}$	> -	-	-	0,6 V
	< -	-	-	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
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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
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$V_{DS} = 15\text{ V}; -V_{GS} = 1\text{ V}; f = 1\text{ MHz}$

Input capacitance

$C_{is}$	typ.	4,0	pF
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Feedback capacitance

$C_{rs}$	typ.	1,2	pF
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Output capacitance

$C_{os}$	typ.	1,6	pF
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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	dB
	<	2	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/ $\sqrt{\text{Hz}}$
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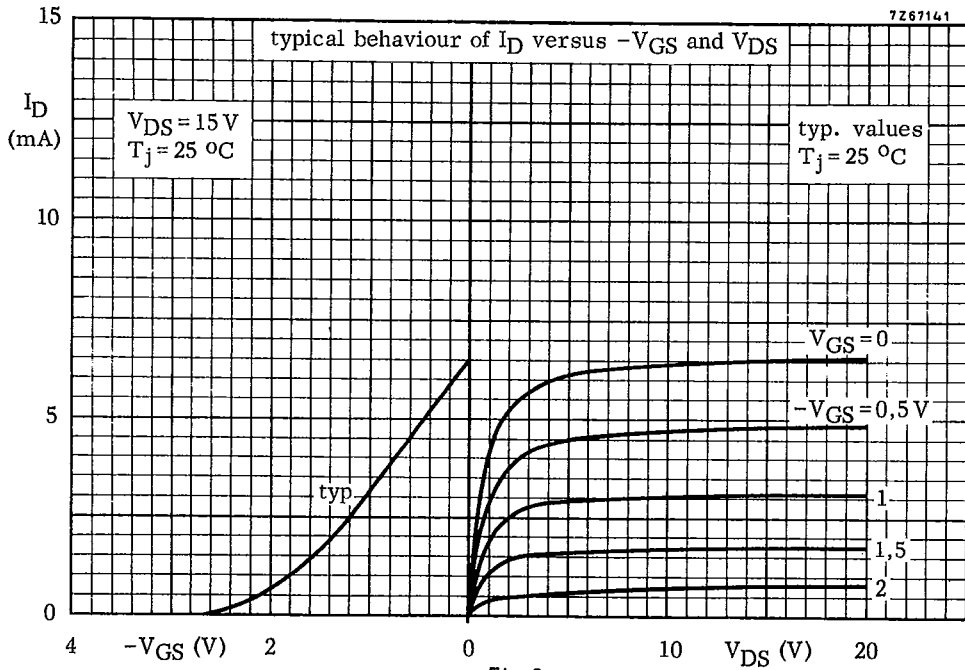


Fig. 2

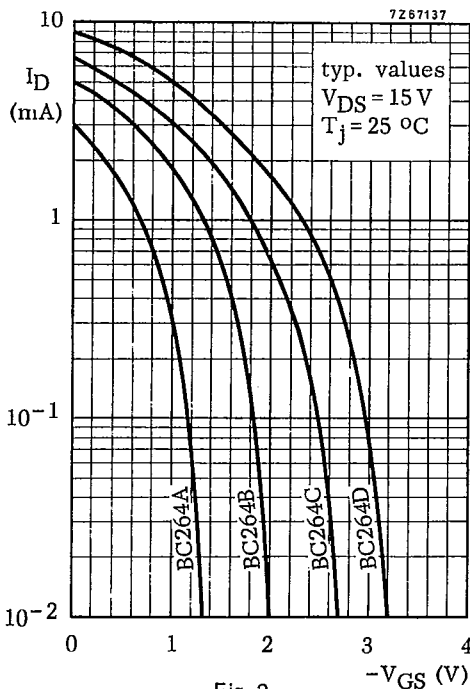


Fig. 3

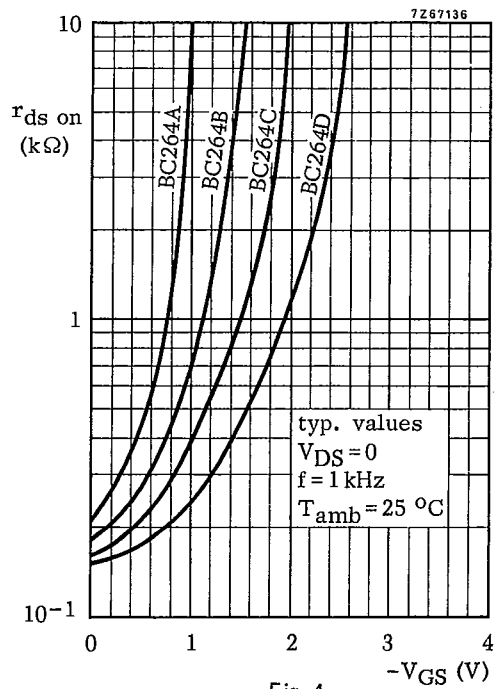


Fig. 4

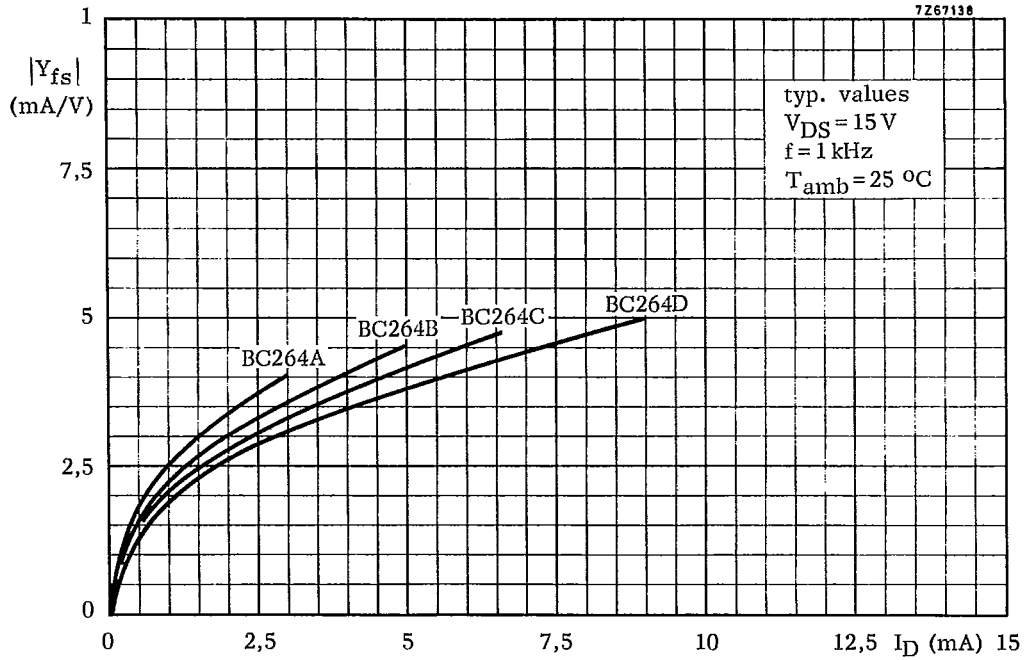


Fig. 5

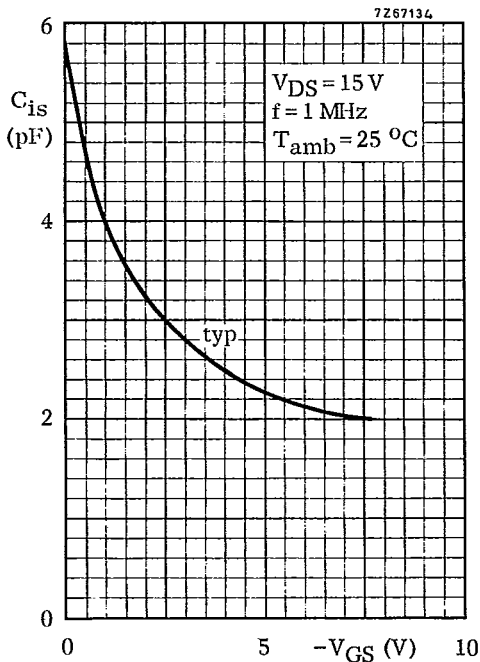


Fig. 6

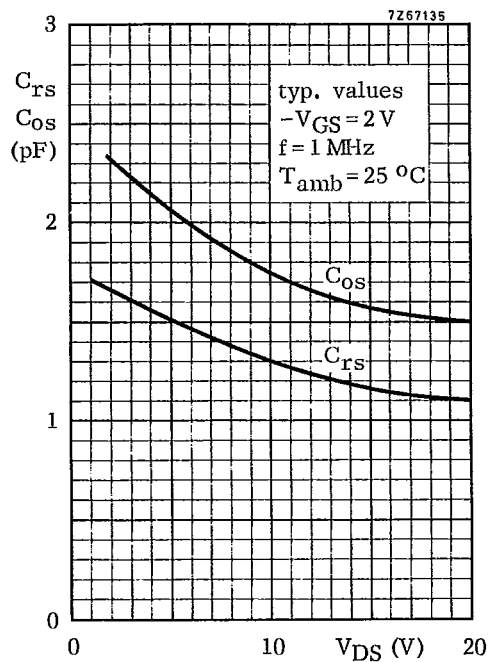


Fig. 7

