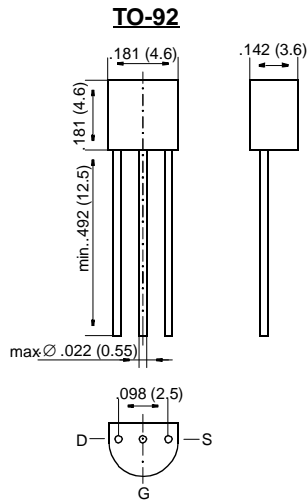


# BS108

## DMOS Transistors (N-Channel)



Dimensions in inches and (millimeters)

### FEATURES

- ◆ High breakdown voltage
- ◆ High input impedance
- ◆ Low gate threshold voltage
- ◆ Low drain-source ON resistance
- ◆ High-speed switching
- ◆ No minority carrier storage time
- ◆ CMOS logic compatible input
- ◆ No thermal runaway
- ◆ No secondary breakdown
- ◆ Specially suited for telephone subsets



### MECHANICAL DATA

**Case:** TO-92 Plastic Package

**Weight:** approx. 0.18 g

On special request, this transistor is also manufactured in the pin configuration TO-18.

## MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Value	Unit
Drain-Source Voltage	$V_{DSS}$	240	V
Drain-Gate Voltage	$V_{DGS}$	240	V
Gate-Source Voltage (pulsed)	$V_{GS}$	±20	V
Drain Current (continuous)	$I_D$	230	mA
Power Dissipation at $T_{amb} = 25\text{ °C}$	$P_{tot}$	0.83 <sup>1)</sup>	W
Junction Temperature	$T_j$	150	°C
Storage Temperature Range	$T_S$	-65 to +150	°C

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

### Inverse Diode

	Symbol	Value	Unit
Max. Forward Current (continuous) at $T_{amb} = 25\text{ °C}$	$I_F$	0.75	A
Forward Voltage Drop (typ.) at $V_{GS} = 0$ , $I_F = 0.75\text{ A}$ , $T_j = 25\text{ °C}$	$V_F$	0.85	V

# BS108

## ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

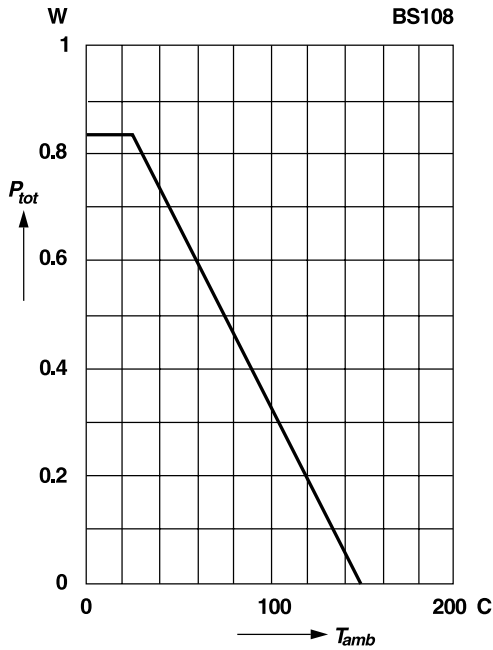
	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $I_D = 100 \mu\text{A}$ , $V_{GS} = 0$	$V_{(BR)DSS}$	240	250	–	V
Gate-Body Leakage Current at $V_{GS} = 15 \text{ V}$ , $V_{DS} = 0$	$I_{GSS}$	–	–	10	nA
Drain Cutoff Current at $V_{DS} = 130 \text{ V}$ , $V_{GS} = 0$ at $V_{DS} = 70 \text{ V}$ , $V_{GS} = 0.2 \text{ V}$	$I_{DSS}$ $I_{DSX}$	– –	– –	1 25	$\mu\text{A}$ $\mu\text{A}$
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$ , $I_D = 1 \text{ mA}$	$V_{GS(th)}$	0.8	1.5	2.5	V
Drain-Source ON Resistance at $V_{GS} = 2.8 \text{ V}$ , $I_D = 100 \text{ mA}$	$R_{DS(ON)}$	–	5.5	8	$\Omega$
Thermal Resistance Junction to Ambient Air	$R_{thJA}$	–	–	150 <sup>1)</sup>	K/W
Capacitance at $V_{DS} = 20 \text{ V}$ , $V_{GS} = 0$ , $f = 1 \text{ MHz}$ Input Capacitance Output Capacitance Feedback Capacitance	$C_{iSS}$ $C_{oSS}$ $C_{rSS}$	– – –	80 20 5	– – –	pF pF pF
Switching Times at $V_{GS} = 10 \text{ V}$ , $V_{DS} = 10 \text{ V}$ , $R_D = 100 \Omega$ Turn-On Time Turn-Off Time	$t_{on}$ $t_{off}$	– –	5 50	– –	ns ns

<sup>1)</sup> Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case

# RATINGS AND CHARACTERISTIC CURVES BS108

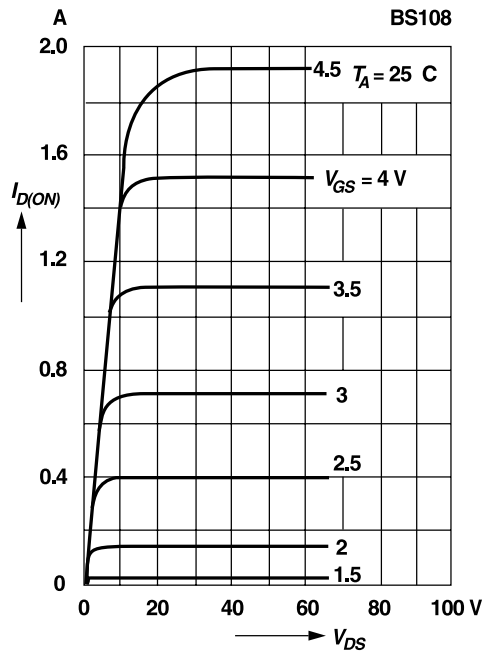
## Admissible power dissipation versus temperature

Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case



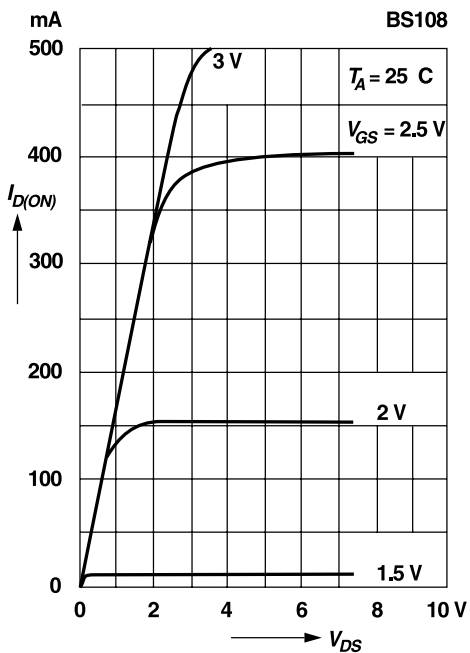
## Output characteristics

Pulse test width 80 ms; pulse duty factor 1%

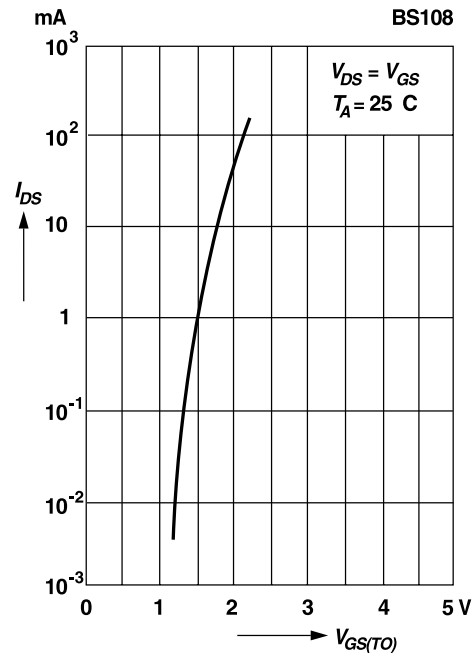


## Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%



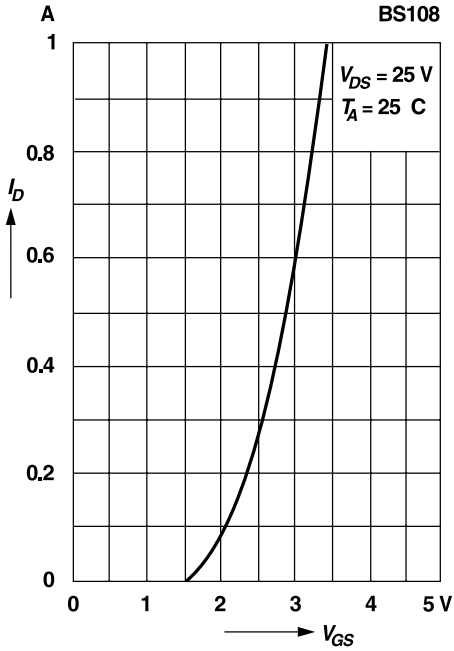
## Drain-source current versus gate threshold voltage



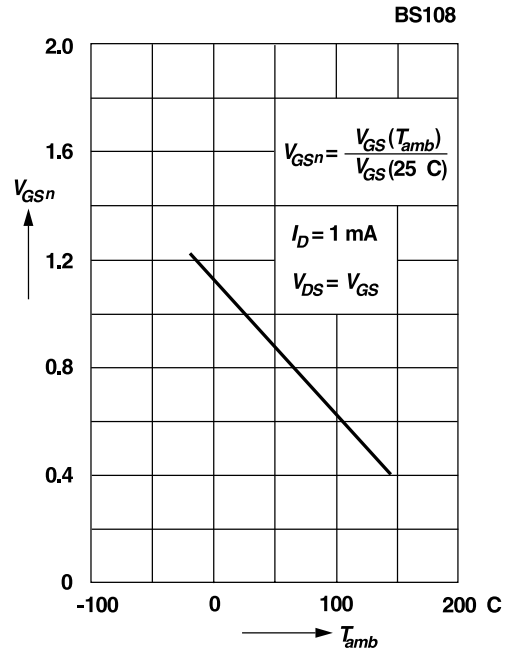
# RATINGS AND CHARACTERISTIC CURVES BS108

## Drain current versus gate-source voltage

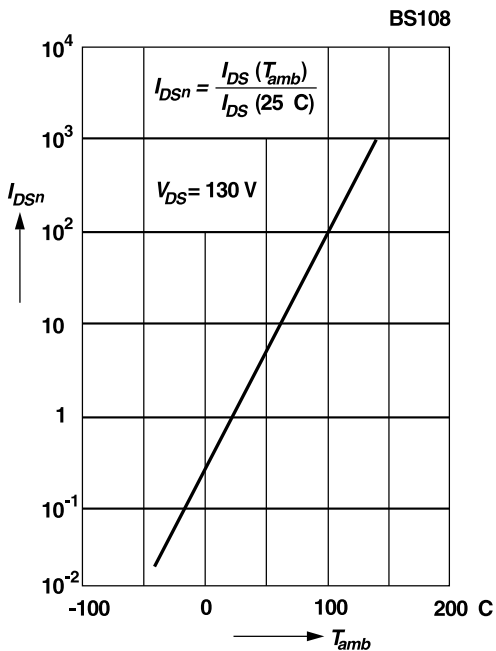
Pulse test width 80 ms; pulse duty factor 1%



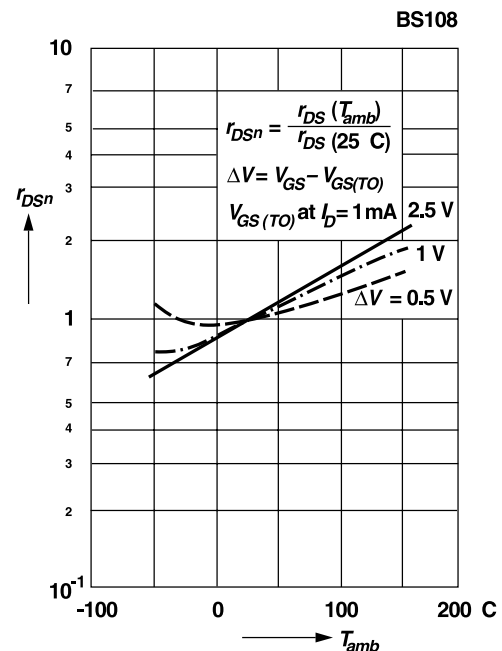
## Normalized gate-source voltage versus temperature



## Normalized drain-source current versus temperature

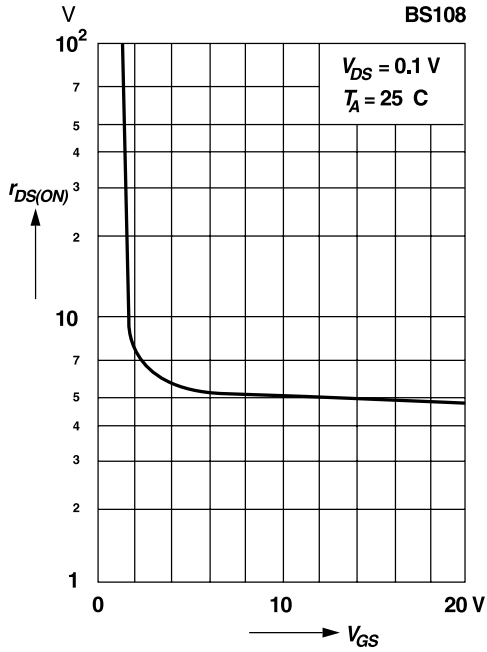


## Normalized drain-source resistance versus temperature



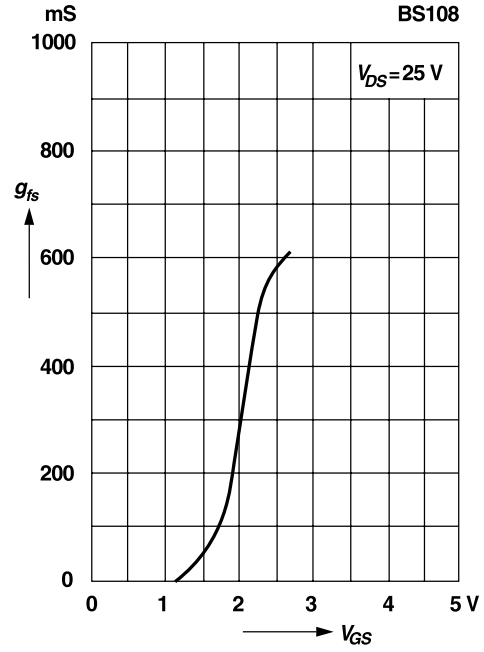
# RATINGS AND CHARACTERISTIC CURVES BS108

**Drain-source resistance  
versus gate-source voltage**



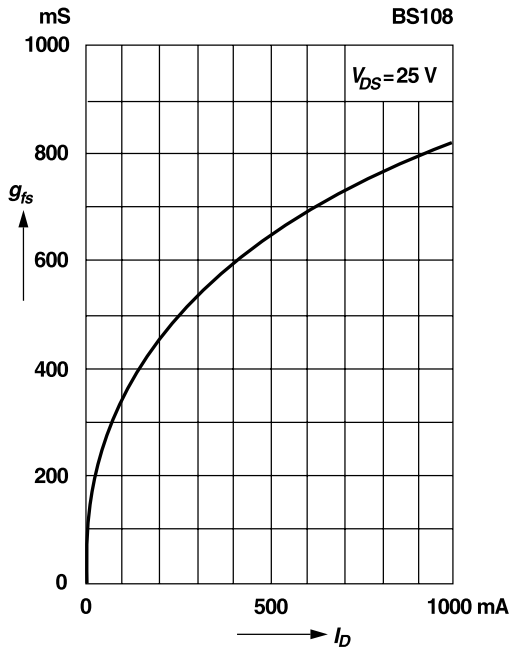
**Transconductance  
versus gate-source voltage**

Pulse test width 80 ms; pulse duty factor 1%



**Transconductance  
versus drain current**

Pulse test width 80 ms; pulse duty factor 1%



This datasheet has been download from:

[www.datasheetcatalog.com](http://www.datasheetcatalog.com)

Datasheets for electronics components.