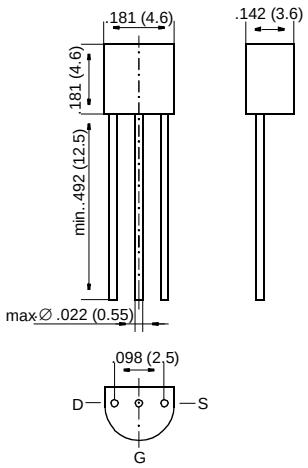
BS108

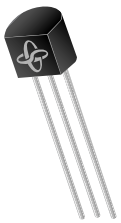
DMOS Transistors (N-Channel)

TO-92



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 °C	P_{tot}	0.83[1)]	W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_S	–65 to +150	°C
[1)] 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 °C	I_F	0.75	A
Forward Voltage Drop (typ.) at V_{GS} = 0, I_F = 0.75 A, T_j = 25 °C	V_F	0.85	V

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ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

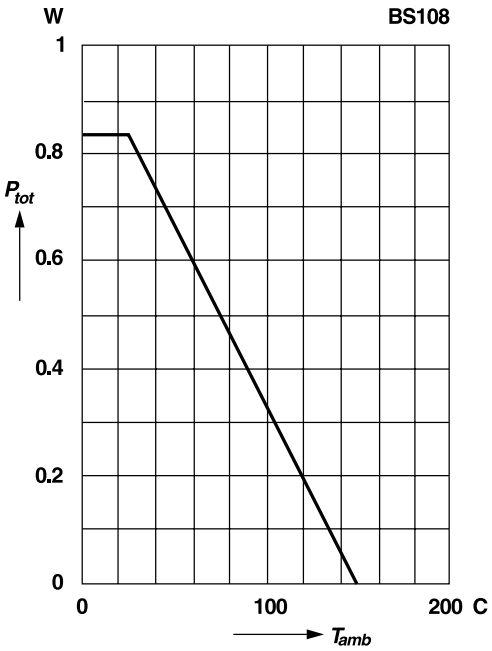
	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at I_D = 100 µA, V_{GS} = 0	$V_{(BR)DSS}$	240	250	–	V
Gate-Body Leakage Current at V_{GS} = 15 V, V_{DS} = 0	I_{GSS}	–	–	10	nA
Drain Cutoff Current at V_{DS} = 130 V, V_{GS} = 0 at V_{DS} = 70 V, V_{GS} = 0.2 V	 I_{DSS} I_{DSX}	 – –	 – –	 1 25	 µA µA
Gate-Source Threshold Voltage at V_{GS} = V_{DS}, I_D = 1 mA	$V_{GS(th)}$	0.8	1.5	2.5	V
Drain-Source ON Resistance at V_{GS} = 2.8 V, I_D = 100 mA	$R_{DS(ON)}$	–	5.5	8	Ω
Thermal Resistance Junction to Ambient Air	R_{thJA}	–	–	150[1)]	K/W
Capacitance at V_{DS} = 20 V, V_{GS} = 0, f = 1 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 V, V_{DS} = 10 V, R_D = 100 Ω Turn-On Time Turn-Off Time	 t_{on} t_{off}	 – –	 5 50	 – –	 ns ns

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

RATINGS AND CHARACTERISTIC CURVES BS108

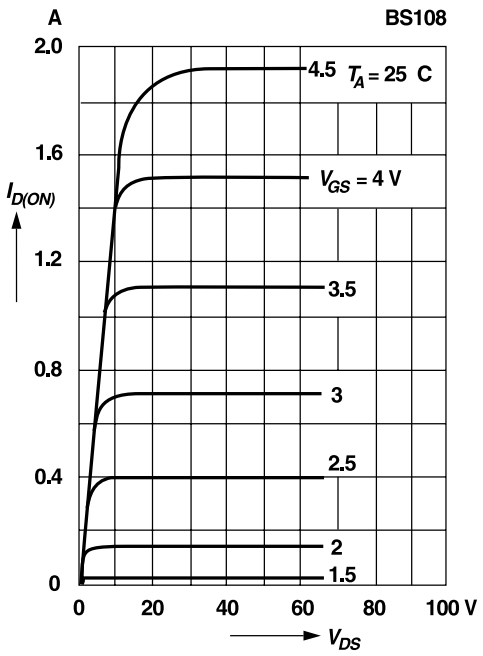
Admissible power dissipation versus temperature

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



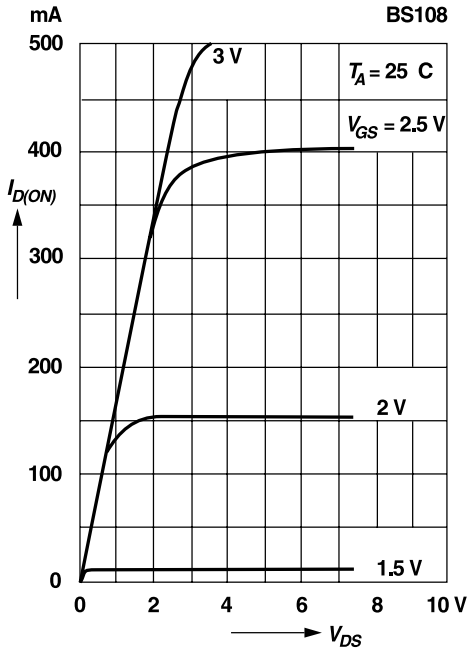
Output characteristics

Pulse test width 80 ms; pulse duty factor 1%

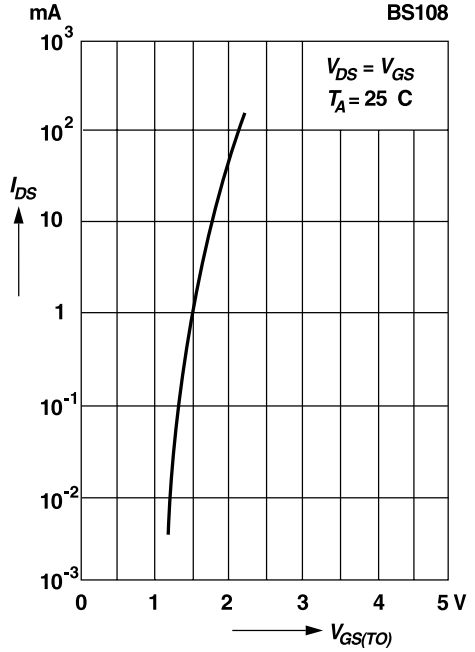


Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%



Drain-source current versus gate threshold voltage



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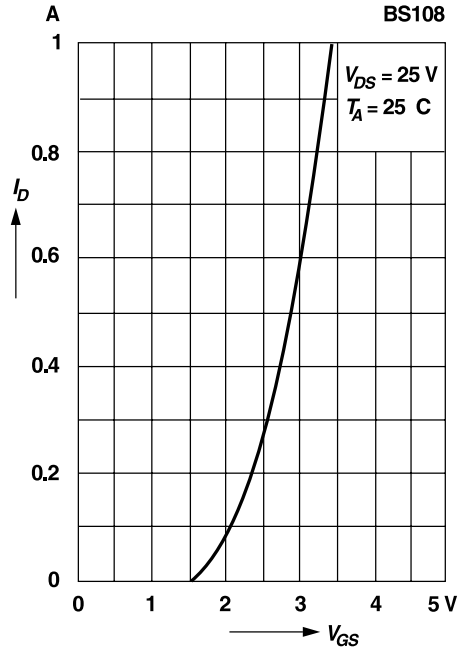
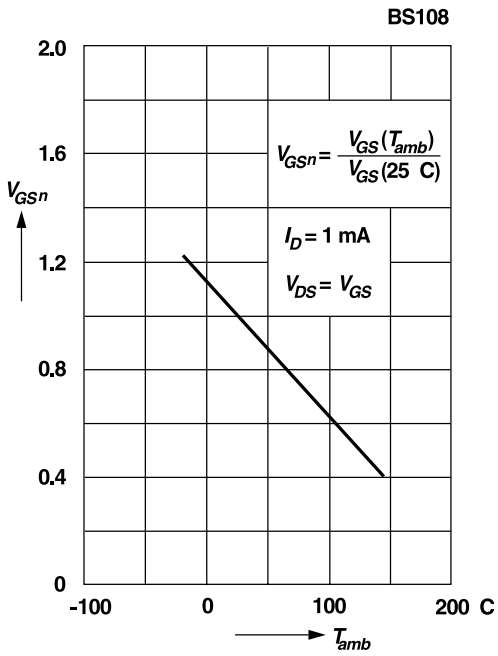
Drain current versus gate-source voltage

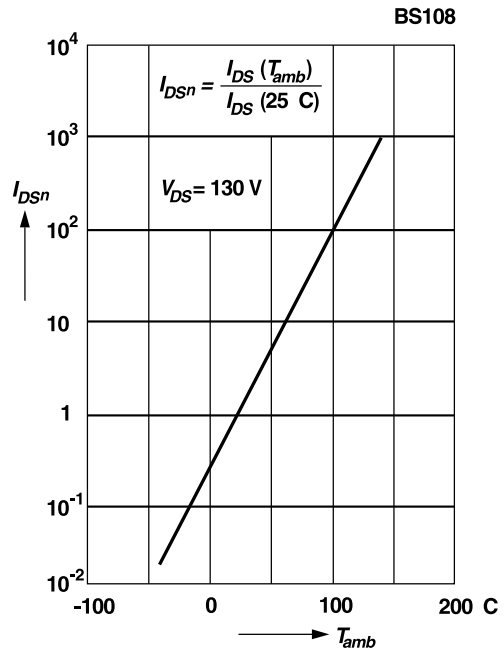
Pulse test width 80 ms; pulse duty factor 1%



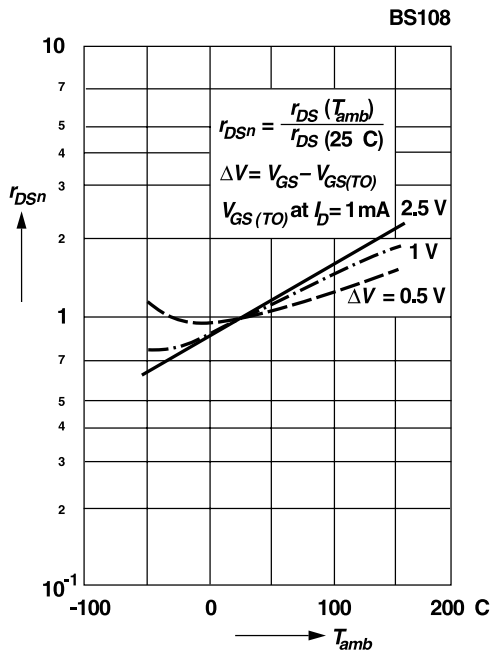
Normalized gate-source voltage versus temperature



Normalized drain-source current versus temperature



Normalized drain-source resistance versus temperature



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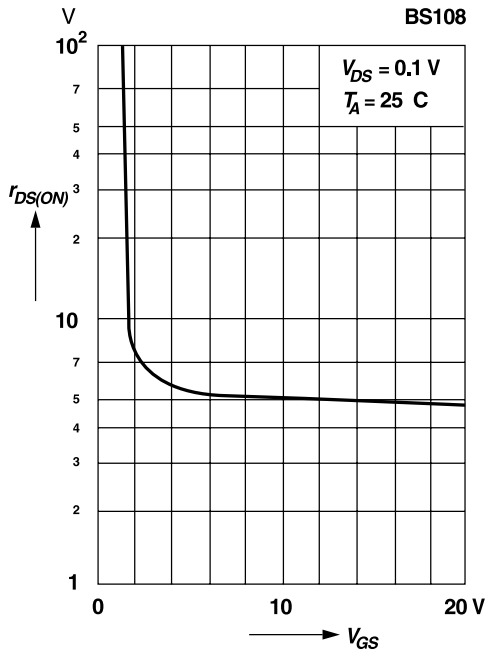
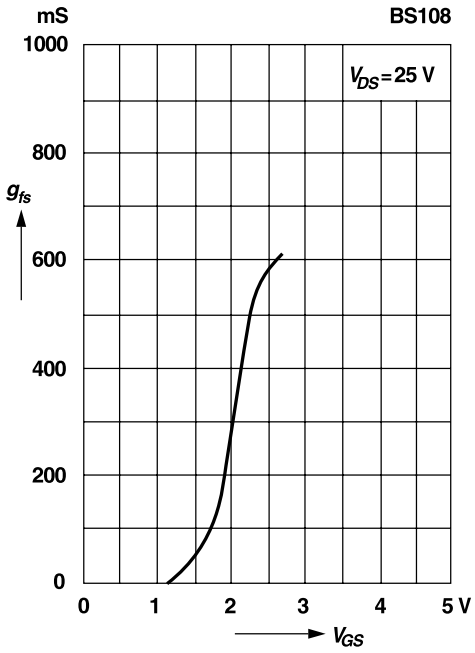
Drain-source resistance versus gate-source voltage



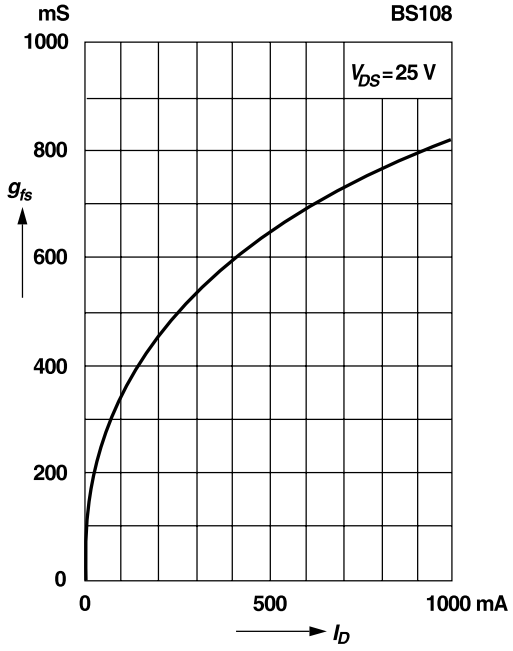
Transconductance versus gate-source voltage

Pulse test width 80 ms; pulse duty factor 1%



Transconductance versus drain current

Pulse test width 80 ms; pulse duty factor 1%



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