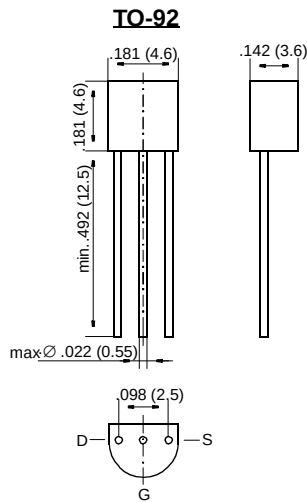


BS208

DMOS Transistors (P-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	$-V_{DS}$	240	V
Drain-Gate Voltage	$-V_{DGS}$	240	V
Gate-Source Voltage (pulsed)	V_{GS}	± 20	V
Drain Current (continuous)	$-I_D$	200	mA
Power Dissipation at $T_{amb} = 25\text{ °C}$	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 $T_{amb} = 25\text{ °C}$	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

BS208

ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

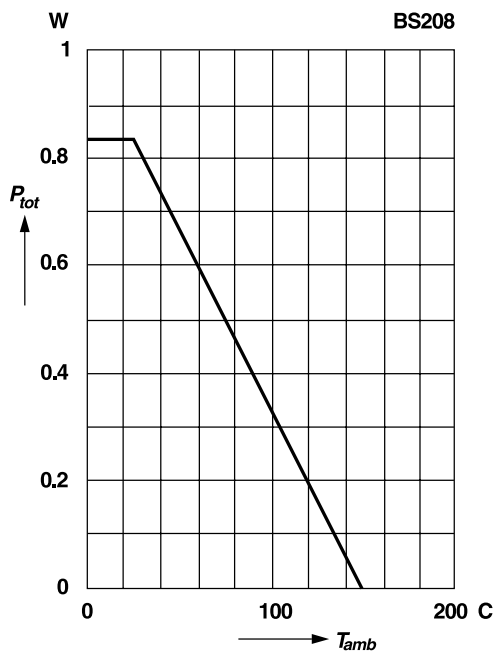
	Symbol	Min.	Typ.	Max.	Unit
Drain-Source Breakdown Voltage at $-I_D = 100 \mu A$, $V_{GS} = 0$	$-V_{(BR)DSS}$	240	250	—	V
Gate-Body Leakage Current at $-V_{GS} = 15 V$, $V_{DS} = 0$	$-I_{GSS}$	—	—	10	nA
Drain Cutoff Current at $-V_{DS} = 130 V$, $V_{GS} = 0$ at $-V_{DS} = 70 V$, $-V_{GS} = 0.2 V$	$-I_{DSS}$ $-I_{DSX}$	— —	— —	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 $-V_{GS} = 5 V$, $-I_D = 100 mA$	$R_{DS(ON)}$	—	7	14	Ω
Thermal Resistance Junction to Ambient Air	R_{thJA}	—	—	150 ¹⁾	K/W
Capacitances at $-V_{DS} = 20 V$, $V_{GS} = 0$, $f = 1 MHz$ Input Capacitance Output Capacitance Feedback Capacitance	C_{iss} C_{oss} C_{rss}	— — —	200 30 10	— — —	pF pF pF
Switching Times at $-I_D = 200 mA$, $-U_{GS} = 10 V$ Turn-on Time Fall Time	t_{on} t_f	— —	5 15	— —	ns ns

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

RATINGS AND CHARACTERISTIC CURVES BS208

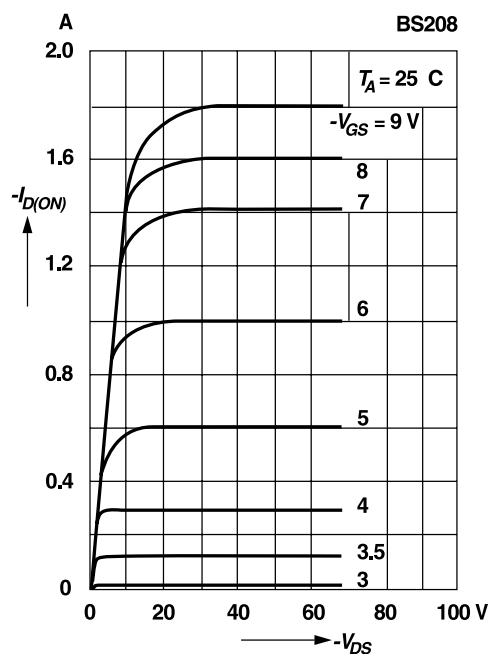
Admissible power dissipation versus temperature

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



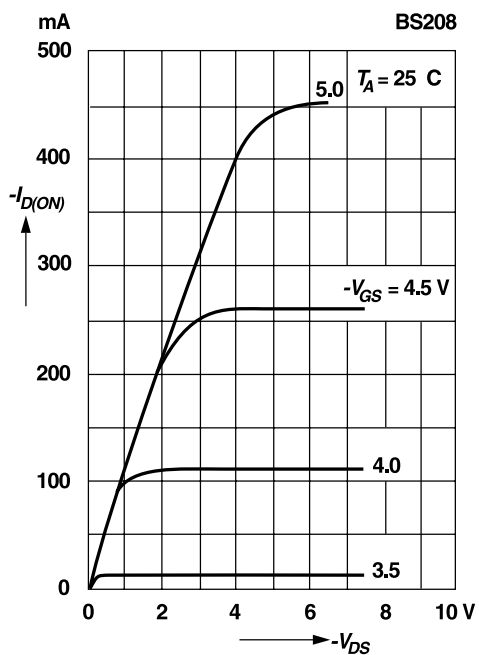
Output characteristics

Pulse test width 80 ms; pulse duty factor 1%

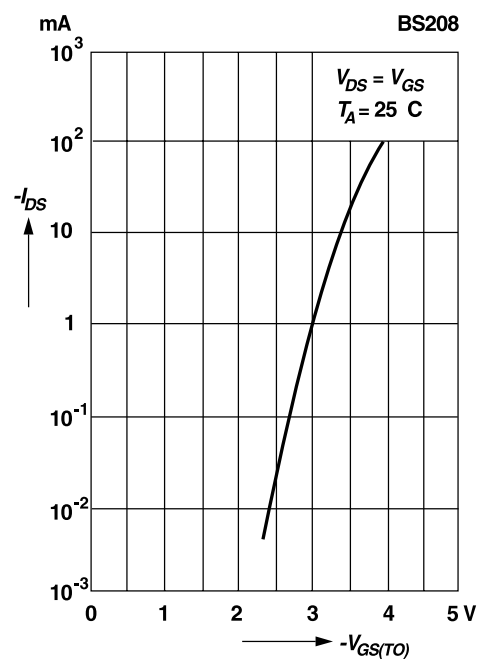


Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%



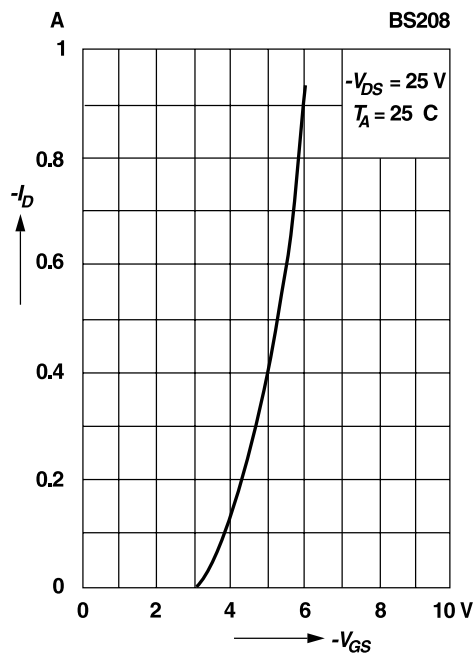
Drain-source current versus gate threshold voltage



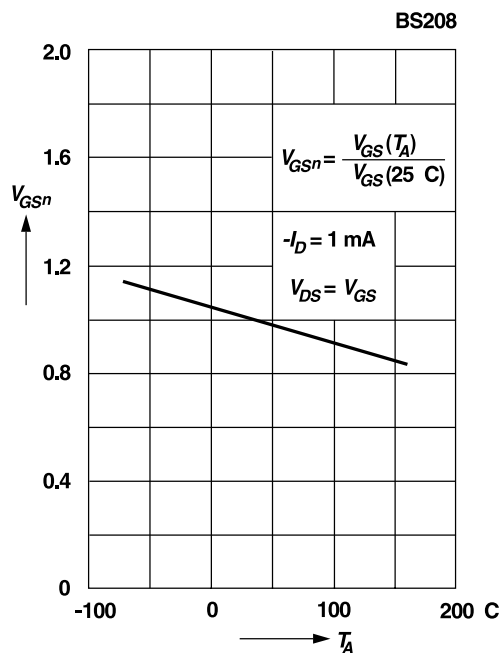
RATINGS AND CHARACTERISTIC CURVES BS208

**Drain current
versus gate-source voltage**

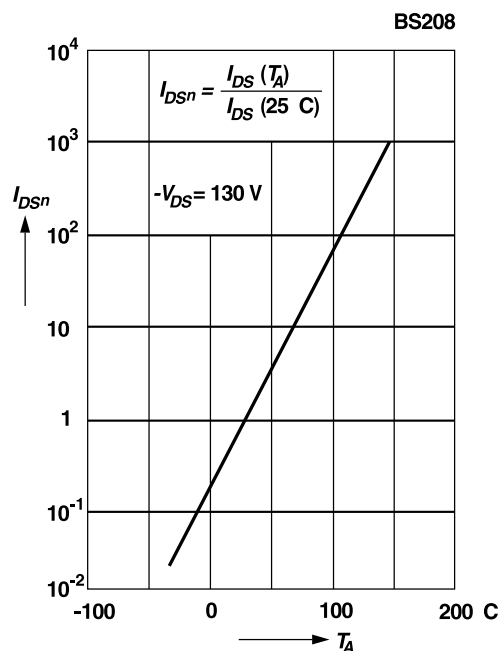
Pulse test width 80 ms; pulse duty factor 1%



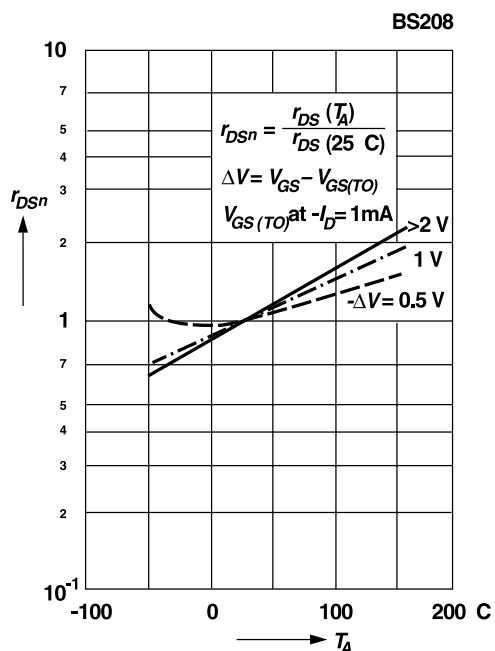
**Normalized gate-source voltage
versus temperature**



**Normalized drain-source current
versus temperature**

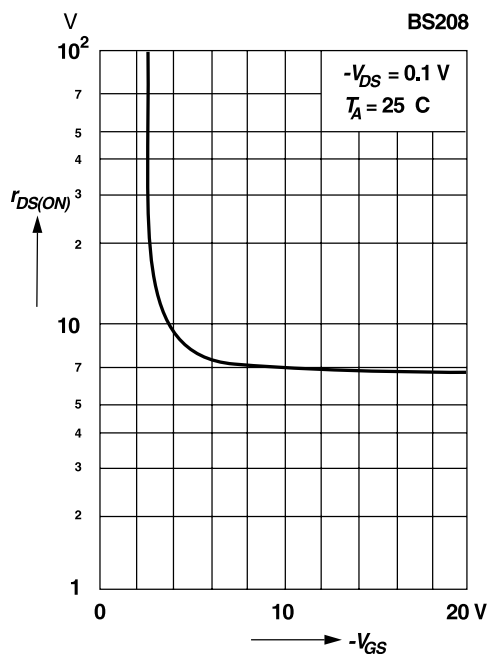


**Normalized drain-source resistance
versus temperature**



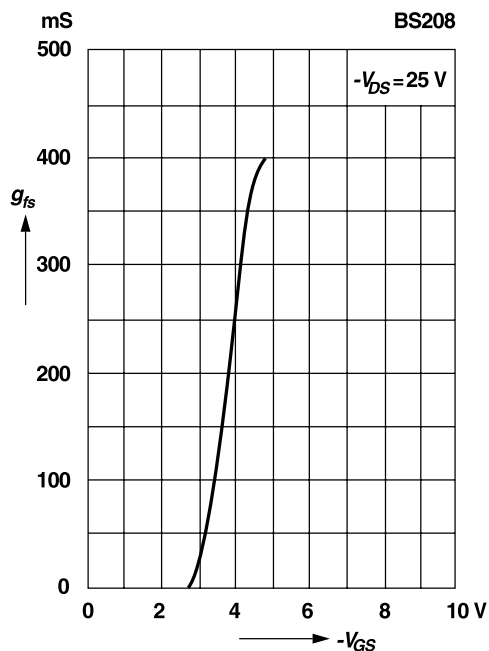
RATINGS AND CHARACTERISTIC CURVES BS208

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



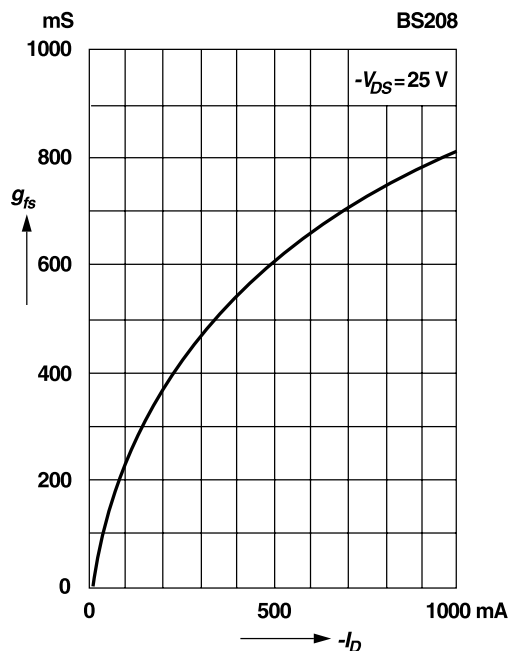
**Transconductance
versus gate-source voltage**

Pulse test width 80 ms; pulse duty factor 1%



**Transconductance
versus drain current**

Pulse test width 80 ms; pulse duty factor 1%



**Capacitance
versus drain-source voltage**

