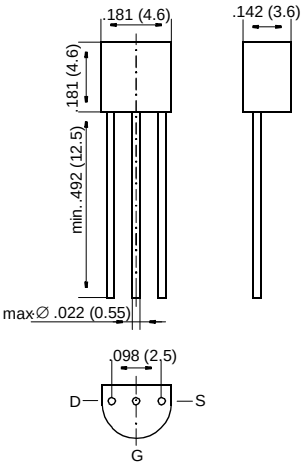
BS209

DMOS Transistors (P-Channel)

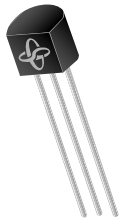
TO-92



Dimensions in inches and (millimeters)

FEATURES

- 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



MECHANICAL DATA

Case: TO-92 Plastic Package
Weight: approx. 0.18 g

MAXIMUM RATINGS AND ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DSS}$	400	V
Drain-Gate Voltage	$-V_{DGS}$	400	V
Gate-Source Voltage (pulsed)	V_{GS}	±20	V
Drain Current (continuous) at T_{amb} = 25 °C	$-I_D$	120	mA
Power Dissipation at T_{amb} = 25 °C	P_{tot}	830[1)]	mW
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	400	mA
Forward Voltage Drop (typ.) at V_{GS} = 0 V, I_F = 400 mA, T_j = 25 °C	V_F	1.0	V

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	$-V_{(BR)DSS}$	400	430	–	V
Gate-Body Leakage Current, Forward at $-V_{GSF}$ = 20 V, V_{DS} = 0 V	$-I_{GSSF}$	–	–	100	nA
Gate-Body Leakage Current, Reverse at $-V_{GSR}$ = 20 V, V_{DS} = 0 V	$-I_{GSSR}$	–	–	100	nA
Drain Cutoff Current at $-V_{DS}$ = 400 V, V_{GS} = 0 V	$-I_{DSS}$	–	–	500	nA
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$, $-I_D$ = 250 μA	$-V_{GS(th)}$	1	1.5	2.5	V
Drain-Source ON Resistance at $-V_{GS}$ = 5 V, $-I_D$ = 120 mA	$R_{DS(on)}$	–	50	60	Ω
Capacitance at $-V_{DS}$ = 25 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 $-V_{GS}$ = 10 V, $-V_{DS}$ = 10 V, R_D = 100 Ω Turn-On Time Turn-Off Time	 t_{on} t_{off}	 – –	 10 50	 – –	 ns ns
Thermal Resistance Junction to Ambient Air	R_{thJA}	–	–	150[1)]	K/W

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

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