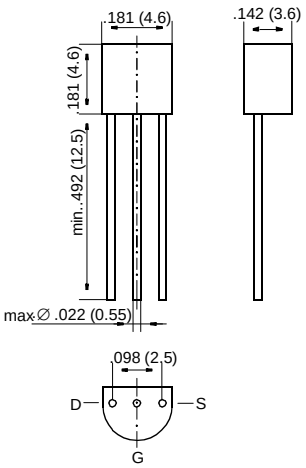
BS123

DMOS Transistors (N-Channel)

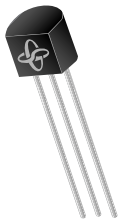
TO-92



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}	60	V
Drain-Gate Voltage	V_{DGS}	60	V
Gate-Source Voltage (pulsed)	V_{GS}	±20	V
Drain Current (continuous) at T_{amb}[1] = 25 °C, at T_{SB}[2] = 50 °C	I_D	1.1	A
Power Dissipation at T_{amb}[1] = 25 °C, at T_{SB}[2] = 50 °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 (for TO-92).

GENERAL SEMICONDUCTOR®

BS123

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	$V_{(BR)DSS}$	60	80	–	V
Gate-Body Leakage Current, Forward at V_{GSF} = 20 V, V_{DS} = 0 V	I_{GSSF}	–	–	500	nA
Gate-Body Leakage Current, Reverse at V_{GSR} = 20 V, V_{DS} = 0 V	I_{GSSR}	–	–	500	nA
Drain Cutoff Current at V_{DS} = 60 V, V_{GS} = 0 V	I_{DSS}	–	–	250	µA
Gate-Source Threshold Voltage at V_{GS} = V_{DS}, I_D = 250 µA	$V_{GS(th)}$	1	1.5	3	V
Drain-Source ON Resistance at V_{GS} = 10 V, I_D = 600 mA	$R_{DS(on)}$	–	0.3	0.4	Ω
Capacitance at V_{DS} = 25 V, V_{GS} = 0 V, f = 1 MHz Input Capacitance Output Capacitance Feedback Capacitance	 C_{iSS} C_{OSS} C_{rSS}	 – – –	 350 150 35	 – – –	 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}	 – –	 40 100	 – –	 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 (for TO-92).

Inverse Diode

	Symbol	Value	Unit
Max. Forward Current (continuous) at T_{amb} = 25 °C	I_F	1.1	A
Forward Voltage Drop (typ.) at V_{GS} = 0 V, I_F = 1.1 A, T_j = 25 °C	V_F	1	V