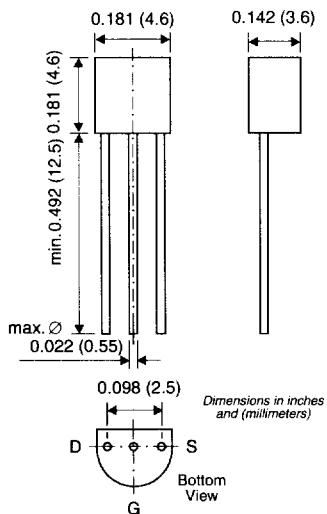


DMOS Transistor (N-Channel)



TO-226AA (TO-92)



Features

- High input impedance
- High-speed switching
- No minority carrier storage time
- CMOS logic compatible input
- No thermal runaway
- No secondary breakdown
- On special request, this transistor is also manufactured in the pin configuration TO-18.

Mechanical Data

Case: TO-92 Plastic Package

Weight: approx. 0.18g

Packaging Codes/Options:

E6/Bulk- 5K per container, 20K/box

E7/4K per Ammo tape, 20K/box

Maximum Ratings and Thermal Characteristics ($T_A = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Limit	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGSS}	60	V
Gate-Source-Voltage (pulsed)	V_{GS}	± 20	V
Drain Current (continuous)	I_D	300	mA
Power Dissipation at $T_{amb} = 25^\circ\text{C}$	P_{tot}	0.83 ⁽¹⁾	W
Thermal Resistance Junction to Ambient Air	$R_{\theta JA}$	150 ⁽¹⁾	°C/W
Junction Temperature	T_j	150	°C
Storage Temperature Range	T_s	-65 to +150	°C

Note:

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

DMOS Transistor (N-Channel)
Electrical Characteristics ($T_J = 25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$V_{(\text{BR})DSS}$	$I_D = 100\mu\text{A}, V_{GS} = 0$	60	80	—	V
Gate-Source Threshold Voltage	$V_{GS(\text{th})}$	$V_{GS} = V_{DS}, I_D = 1\text{mA}$	1.0	2	3.0	V
Gate-Body Leakage Current	I_{GSS}	$V_{GS} = 15\text{V}, V_{DS} = 0$	—	—	10	nA
Drain Cutoff Current	I_{DSS}	$V_{DS} = 25\text{V}, V_{GS} = 0$	—	—	0.5	μA
Drain-Source ON Resistance	$R_{DS(\text{on})}$	$V_{GS} = 10\text{V}, I_D = 0.2\text{A}$	—	3.5	5.0	Ω
Forward Transconductance	g_m	$V_{DS} = 10\text{V}, I_D = 0.2\text{A}$ $f = 1\text{MHz}$	—	200	—	mS
Input Capacitance	C_{iss}	$V_{DS} = 10\text{V}, V_{GS} = 0,$ $f = 1\text{MHz}$	—	30	—	pF
Turn-On Time	t_{on}	$V_{GS} = 10\text{V}, V_{DS} = 10\text{V}$	—	5	—	ns
Turn-Off Time	t_{off}		$R_D = 100\Omega$	—	15	—

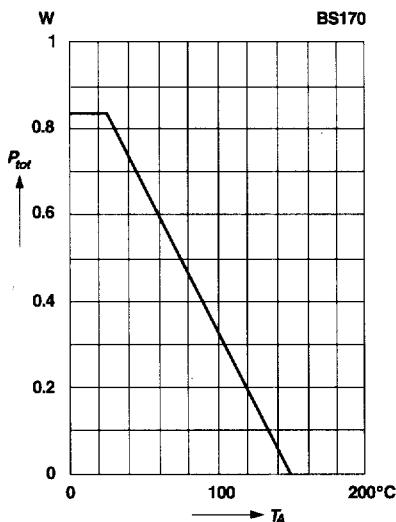
Inverse Diode

Parameters	Symbol	Test Condition	Value	Unit
Maximum Forward Current (continuous)	I_F	$T_{\text{amb}} = 25^\circ\text{C}$	0.5	A
Forward Voltage Drop (typ.)	V_F	$V_{GS} = 0, I_F = 0.5 \text{ A}$ $T_j = 25^\circ\text{C}$	0.85	V

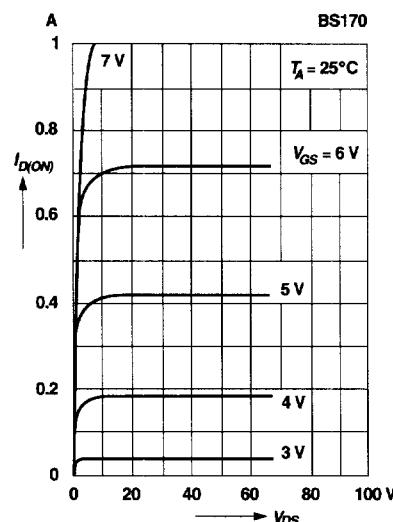
DMOS Transistor (N-Channel)
**Ratings and
Characteristic Curves** ($T_A = 25^\circ\text{C}$ unless otherwise noted)

**Admissible power dissipation
versus temperature**

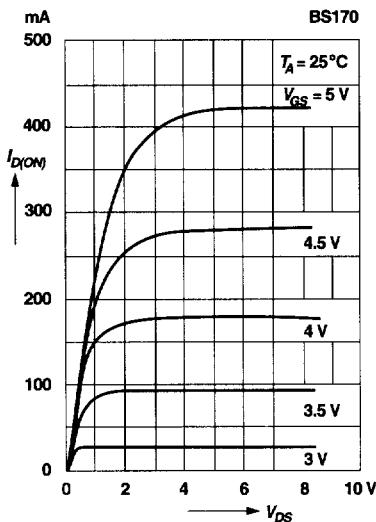
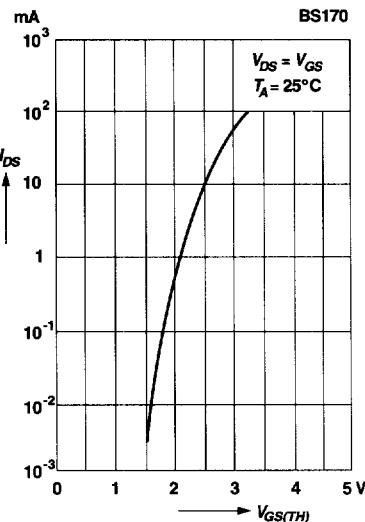
Valid provided that leads are kept at ambient temperature at a distance of 2 mm from case


Output characteristics

Pulse test width 80 ms; pulse duty factor 1%

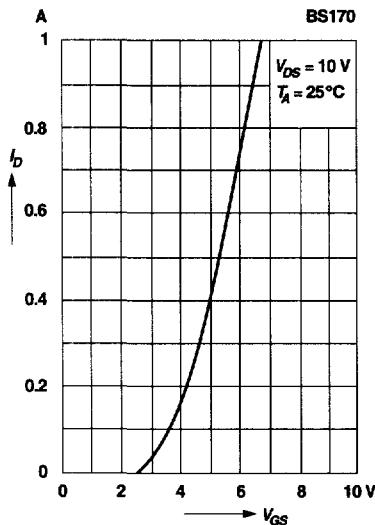

Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%

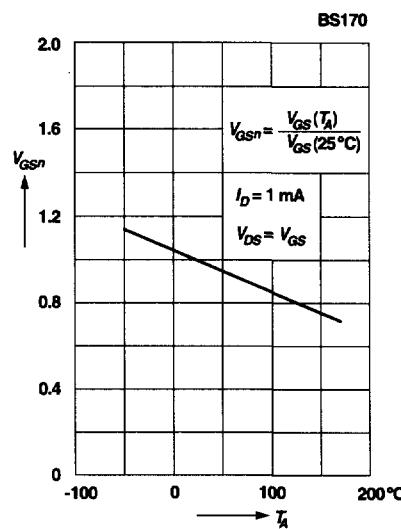

**Drain-source current
versus gate threshold voltage**


DMOS Transistor (N-Channel)
Ratings and
Characteristic Curves

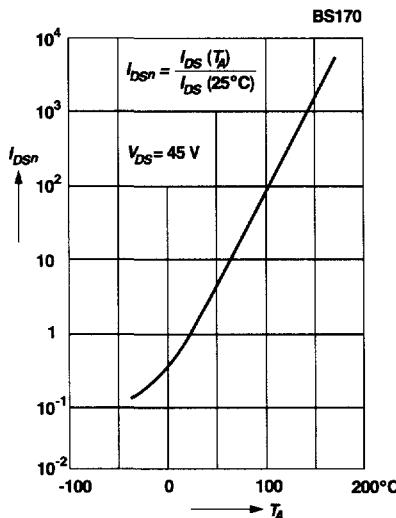
**Drain current
versus gate-source voltage**
Pulse test width 80 ms; pulse duty factor 1%



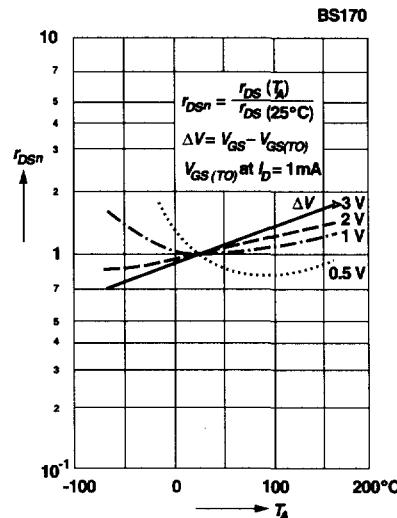
**Normalized gate-source voltage
versus temperature**



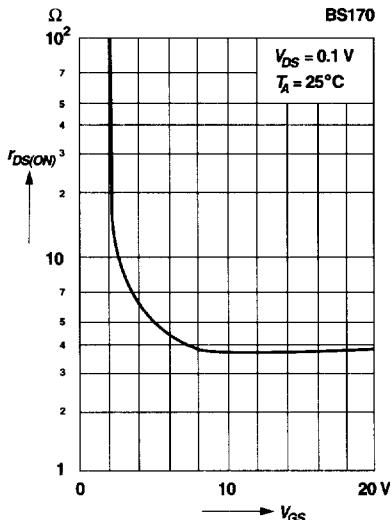
**Normalized drain-source current
versus temperature**



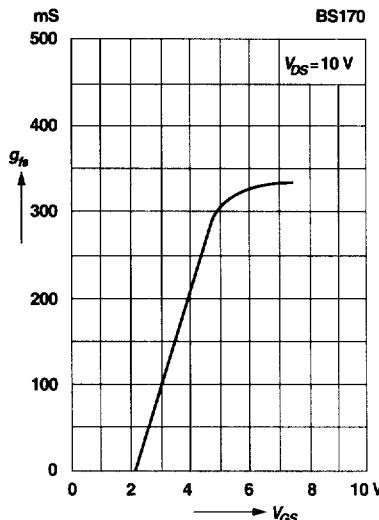
**Normalized drain-source resistance
versus temperature**



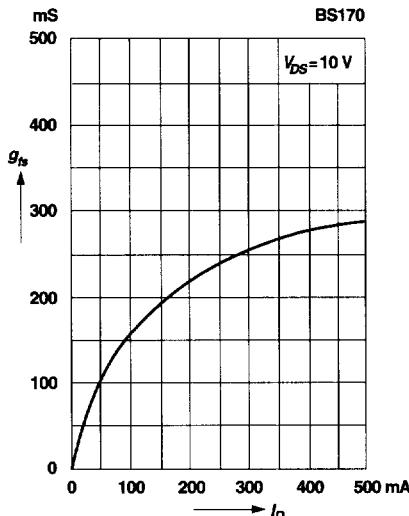
DMOS Transistor (N-Channel)
**Ratings and
Characteristic Curves** ($T_A = 25^\circ\text{C}$ unless otherwise noted)

**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**
