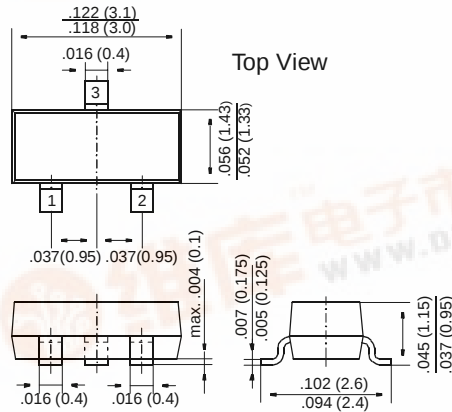


BS828

DMOS Transistors (N-Channel)

SOT-23

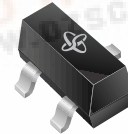


Dimensions in inches and (millimeters)

Pin configuration
1 = Gate, 2 = Source, 3 = Drain

FEATURES

- ◆ High breakdown voltage
- ◆ High input impedance
- ◆ 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: SOT-23 Plastic Package

Weight: approx. 0.008 g

Marking
S28

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 $T_{SB} = 50\text{ }^{\circ}\text{C}$	P_{tot}	0.310 ¹⁾	W
Junction Temperature	T_j	150	$^{\circ}\text{C}$
Storage Temperature Range	T_S	-65 to +150	$^{\circ}\text{C}$
¹⁾ Device on fiberglass substrate, see layout			

Inverse Diode

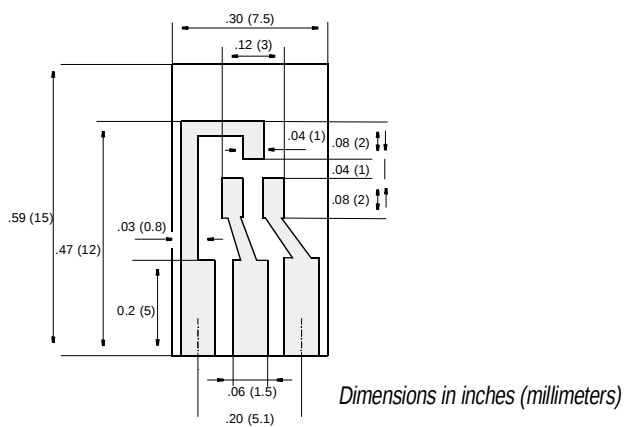
	Symbol	Value	Unit
Max. Forward Current (continuous) at $T_{amb} = 25\text{ }^{\circ}\text{C}$	I_F	0.3	A
Forward Voltage Drop (typ.) at $V_{GS} = 0$, $I_F = 0.3\text{ A}$, $T_j = 25\text{ }^{\circ}\text{C}$	V_F	0.85	V

BS828

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 $V_{GS} = V_{DS}$, $I_D = 1 mA$	$V_{GS(th)}$	—	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 Substrate Backside	R_{thSB}	—	—	320 ¹⁾	K/W
Thermal Resistance Junction to Ambient Air	R_{thJA}	—	—	450 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}	— — —	80 20 5	— — —	pF pF pF
Switching Times at $V_{GS} = 10 V$, $V_{DS} = 10 V$, $R_D = 100 \Omega$ Turn-On Time Turn-Off Time	t_{on} t_{off}	— —	5 50	— —	ns ns
¹⁾ Device on fiberglass substrate, see layout					



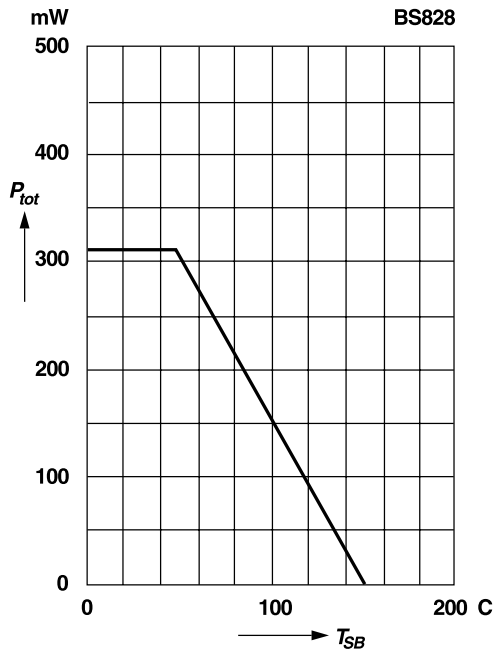
Layout for R_{thJA} test

Thickness: Fiberglass 0.059 in (1.5 mm)

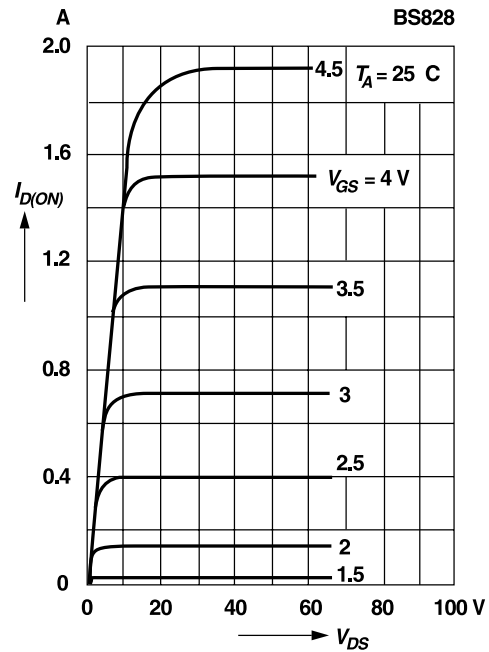
Copper leads 0.012 in (0.3 mm)

RATINGS AND CHARACTERISTIC CURVES BS828

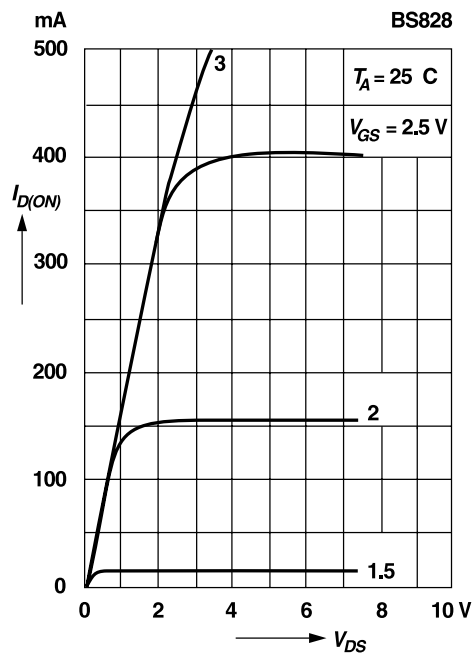
**Admissible power dissipation
versus temperature of substrate backside**
Device on fiberglass substrate, see layout



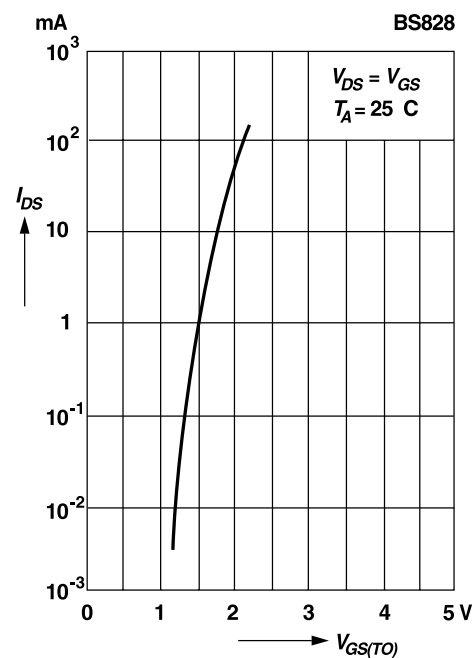
Output characteristics
Pulse test width 80 ms; pulse duty factor 1%



Saturation characteristics
Pulse test width 80 ms; pulse duty factor 1%



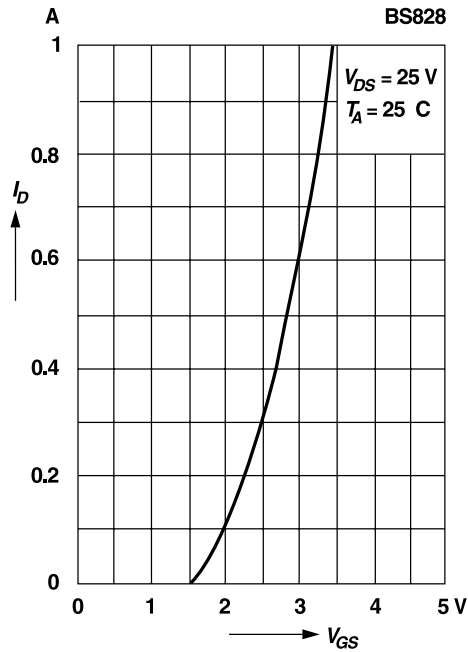
**Drain-source current
versus gate threshold voltage**



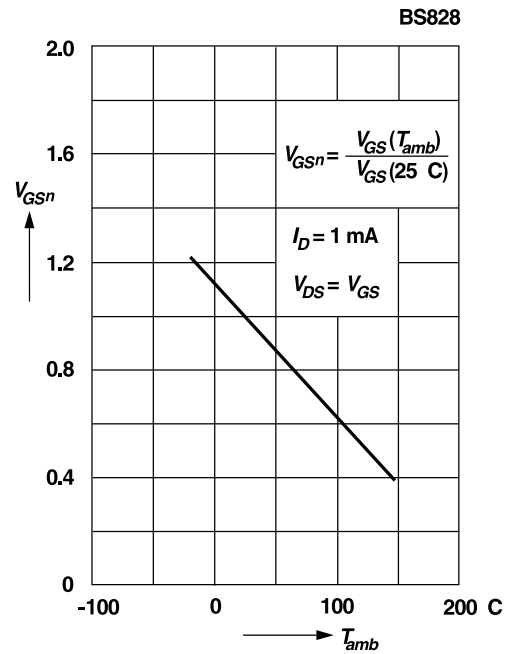
RATINGS AND CHARACTERISTIC CURVES BS828

Drain current versus gate-source voltage

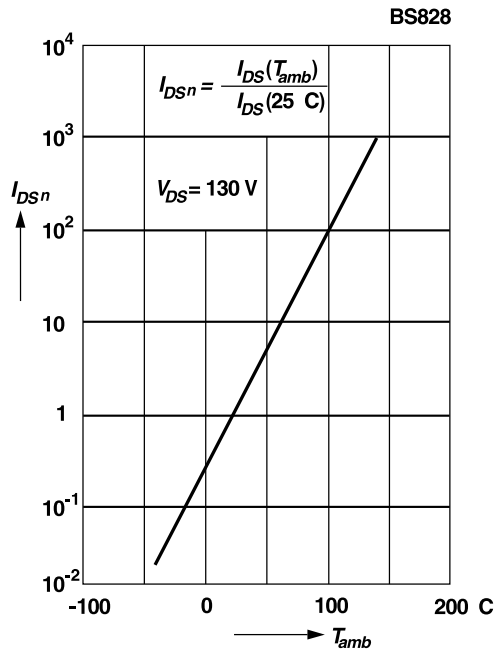
Pulse test width 80 ms; pulse duty factor 1%



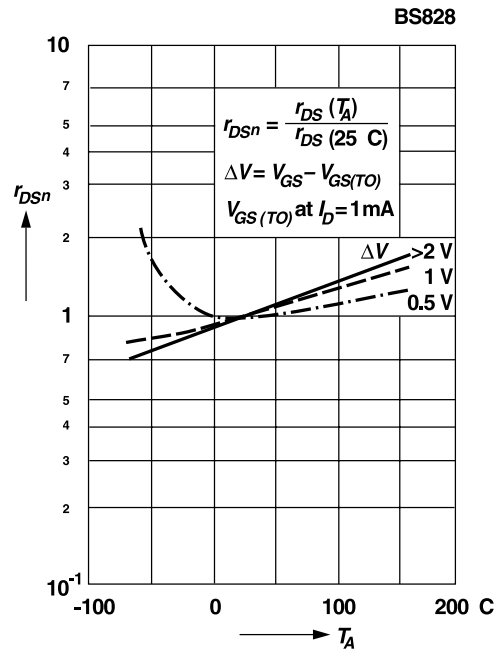
Normalized gate-source voltage versus temperature



Normalized drain-source current versus temperature

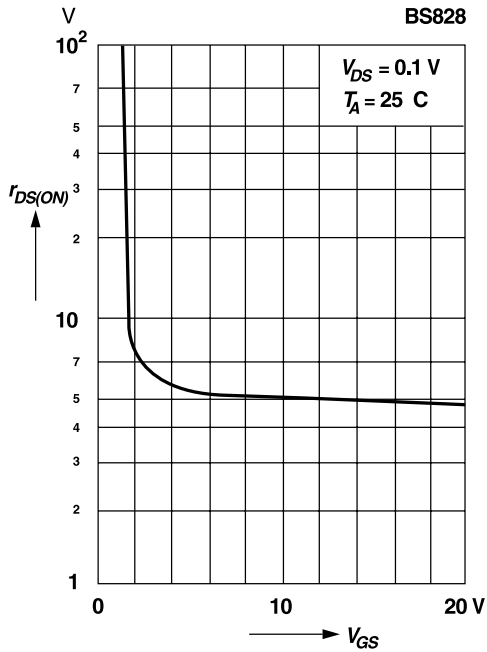


Normalized drain-source resistance versus temperature



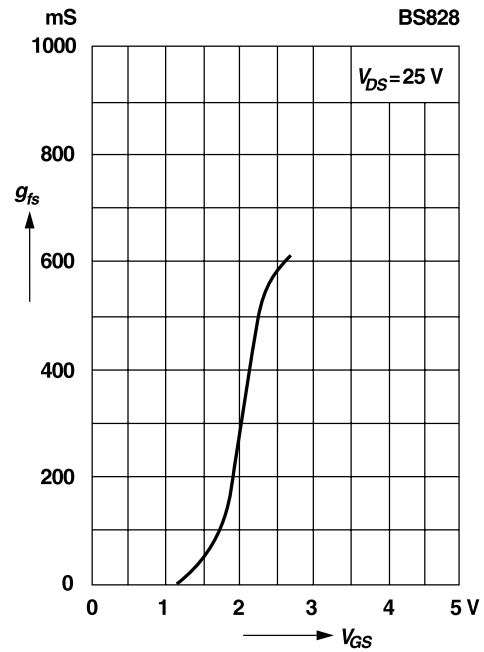
RATINGS AND CHARACTERISTIC CURVES BS828

**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%

