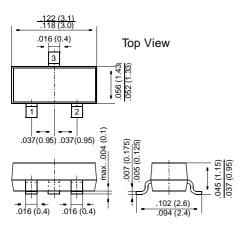
BS828

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 °C	P _{tot}	0.310 ¹⁾	W	
Junction Temperature	Tj	150	°C	
Storage Temperature Range	T _S	-65 to +150	°C	
1) Device on fiberglass substrate, see layout			•	

Inverse Diode

	Symbol	Value	Unit
Max. Forward Current (continuous) at T _{amb} = 25 °C	lF	0.3	А
Forward Voltage Drop (typ.) at $V_{GS} = 0$, $I_F = 0.3$ A, $T_j = 25$ °C	V _F	0.85	V



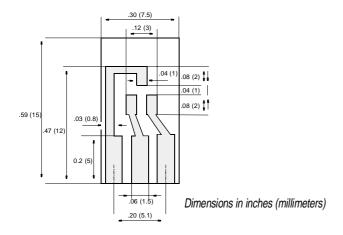
BS828

ELECTRICAL CHARACTERISTICS

Ratings at 25 °C ambient temperature unless otherwise specified

	Symbol	Min.	Тур.	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 $V_{DS} = 130 \text{ V}$, $V_{GS} = 0$ at $V_{DS} = 70 \text{ V}$, $V_{GS} = 0.2 \text{ V}$	I _{DSS}	_ _	_ _ _	1 25	μA μA
Gate-Source Threshold Voltage at $V_{GS} = V_{DS}$, $I_D = 1 \text{ mA}$	V _{GS(th)}	_	1.5	2.5	V
Drain-Source ON Resistance at $V_{GS} = 2.8 \text{ V}$, $I_D = 100 \text{ mA}$	R _{DS(ON)}	_	5.5	8	Ω
Thermal Resistance Junction to Substrate Backside	R _{thSB}	_	-	3201)	K/W
Thermal Resistance Junction to Ambient Air	R _{thJA}	_	_	4501)	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 Ω Turn-On Time Turn-Off Time	t _{on} t _{off}	_ _ _	5 50		ns ns

¹⁾ Device on fiberglass substrate, see layout



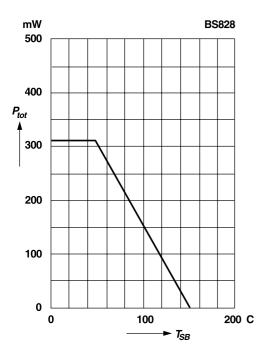
Layout for R_{thJA} test Thickness: Fiberglass 0.059 in (1.5 mm) Copper leads 0.012 in (0.3 mm)



RATINGS AND CHARACTERISTIC CURVES BS828

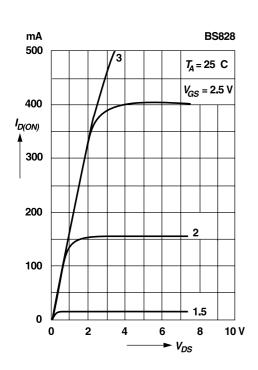
Admissible power dissipation versus temperature of substrate backside

Device on fiberglass substrate, see layout



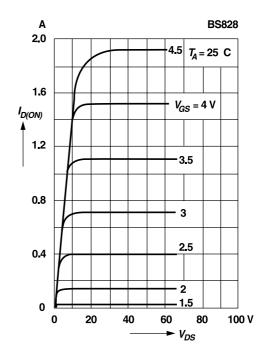
Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%

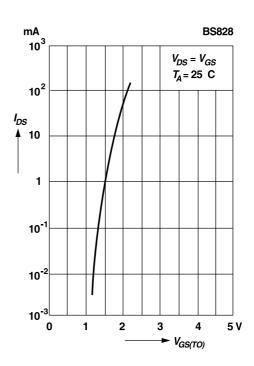


Output characteristics

Pulse test width 80 ms; pulse duty factor 1%



Drain-source current versus gate threshold voltage

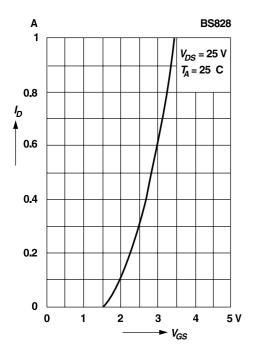




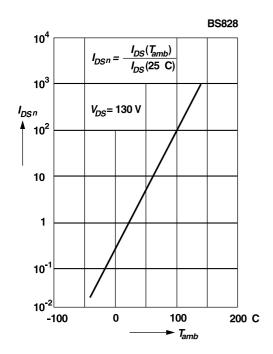
RATINGS AND CHARACTERISTIC CURVES BS828

Drain current versus gate-source voltage

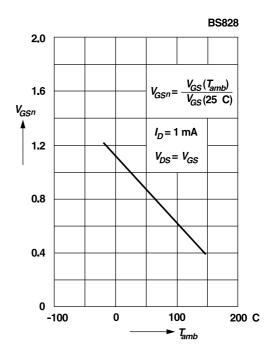
Pulse test width 80 ms; pulse duty factor 1%



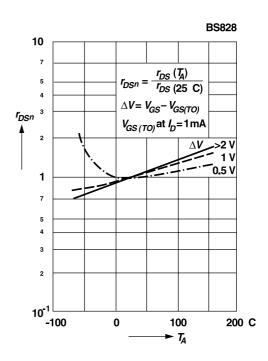
Normalized drain-source current versus temperature



Normalized gate-source voltage versus temperature



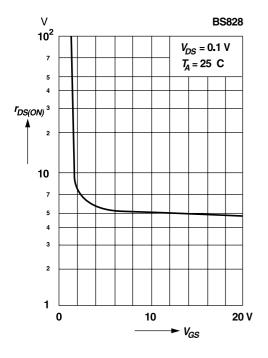
Normalized drain-source resistance versus temperature





RATINGS AND CHARACTERISTIC CURVES BS828

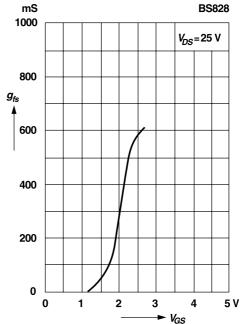
Drain-source resistance versus gate-source voltage



Pulse test width 80 ms; pulse duty factor 1% mS BS8

versus gate-source voltage

Transconductance



Transconductance versus drain current

Pulse test width 80 ms; pulse duty factor 1%

