BS208

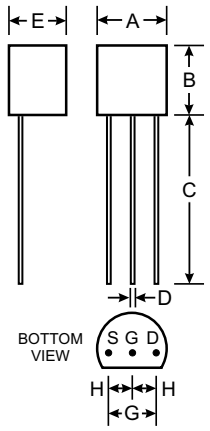
P–CHANNEL ENHANCEMENT MODE DMOS TRANSISTOR

Features

- High Breakdown Voltage
- High Input Impedance
- Fast Switching Speed
- Low Drain-Source On-Resistance
- Specially Suited for Telephone Subsets

Mechanical Data

- Case: TO-92, Plastic
- Leads: Solderable per MIL-STD-202, Method 208
- Pin Connections: See Diagram
- Weight: 0.18 grams (approx.)



TO-92		
Dim	**Min**	**Max**
A	4.45	4.70
B	4.46	4.70
C	12.7	—
D	0.41	0.63
E	3.43	3.68
G	2.42	2.67
H	1.14	1.40
All Dimensions in mm		

Maximum Ratings @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source-Voltage	$-V_{DSS}$	240	V
Drain-Gate-Voltage	$-V_{DGS}$	200	V
Gate-Source-Voltage (pulsed) (Note 2)	V_{GS}	±20	V
Drain-Current (continuous)	$-I_D$	200	mA
Power Dissipation @T_C = 25°C (Note 1)	P_d	830	mW
Operating and Storage Temperature Range	T_j, T_{STG}	–55 to +150	°C

Inverse Diode @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Value	Unit
Maximum Forward Current (continuous)	I_F	0.22	A
Forward Voltage Drop (Typical) @ V_{GS} = 0, I_F = 0.75A, T_j = 25°C	V_F	0.85	V

Electrical Characteristics @ T_A = 25°C unless otherwise specified

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	200	230	—	V	$-I_D$ = 100µA, V_{GS} = 0
Gate-Body Leakage Current	$-I_{GSS}$	—	—	10	nA	$-V_{GS}$ = 15V, V_{DS} = 0
Drain-Source Cutoff Current	$-I_{DSS}$ $-I_{DSX}$	—	—	1.0 25	µA	$-V_{DS}$ =130V, V_{GS} = 0 $-V_{DS}$ = 10V, $-V_{GS}$ = 0.2V
Gate-Source Threshold Voltage	$-V_{GS(th)}$	—	2.8	4.0	V	V_{GS} = V_{DS}, $-I_D$ = 1.0mA
Drain-Source ON Resistance	$r_{DS(ON)}$	—	7.0	14	Ω	$-V_{GS}$ = 10V, $-I_D$ = 100 mA
Thermal Resistance Junction to Ambient	$R_{\theta JA}$	—	—	150	K/W	Note 1
Input Capacitance Output Capacitance Feedback Capacitance	C_{iss} C_{oss} C_{rss}	—	270 35 6.0	—	pF	$-V_{DS}$ = 20V, V_{GS}= 0, f =1.0MHz

Notes: 1. Valid provided that leads are kept at ambient temperature at a distance of 2.0mm from case.
2. Pulse Test: Pulse width = 80µs, duty factor = 1%.

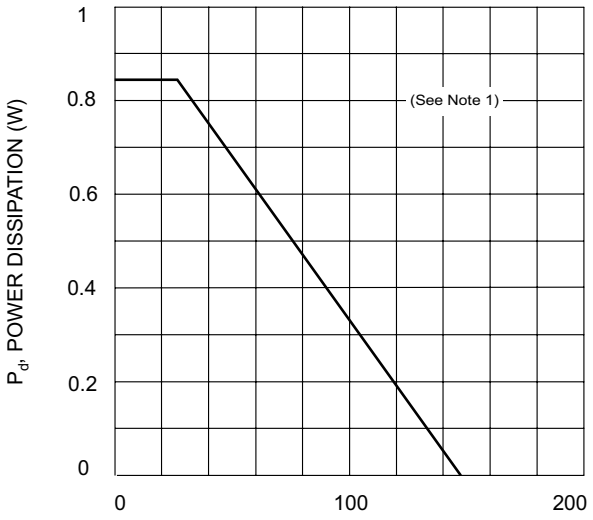


Fig. 1. Power Derating Curve

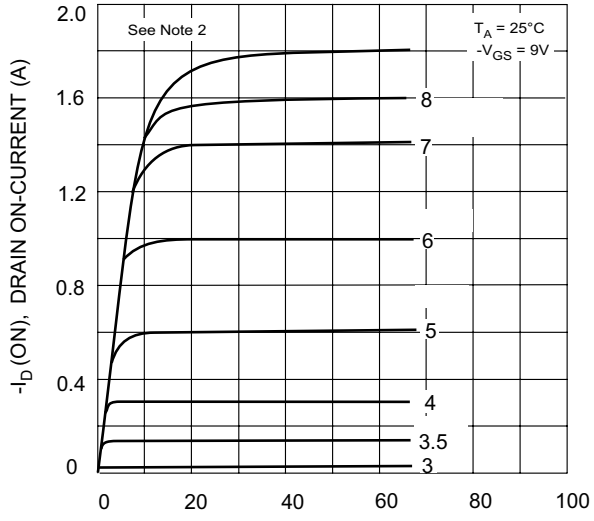


Fig. 2, Output Characteristics

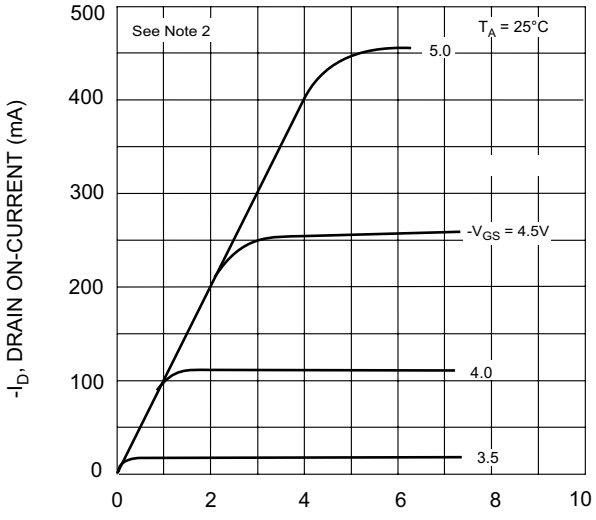


Fig. 3. Saturation Characteristics

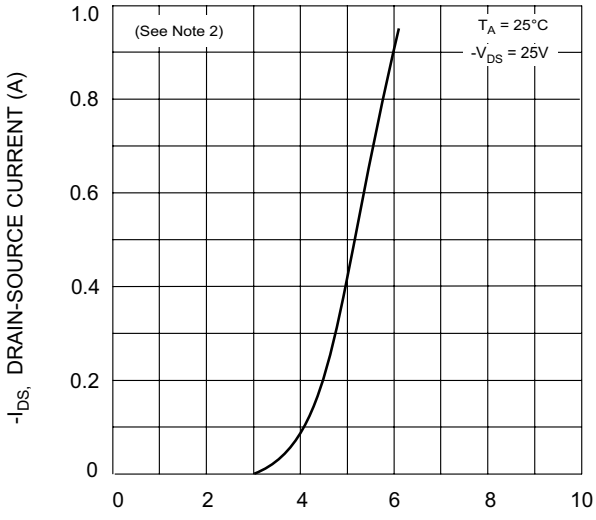


Fig. 4. Drain-Source Current vs Gate-Source Voltage

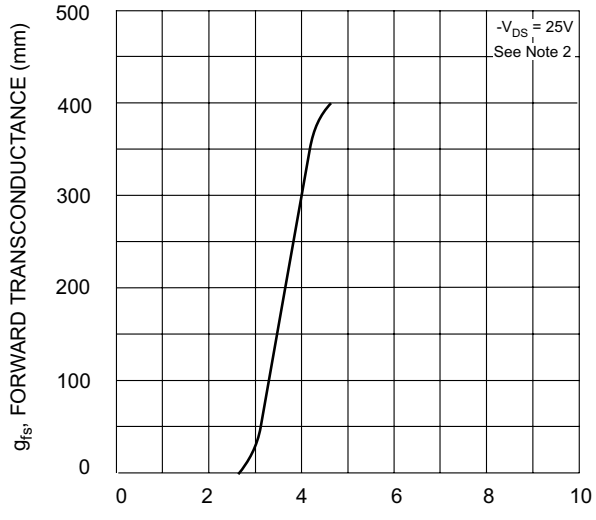


Fig. 5. Transconductance vs Gate-Source Voltage

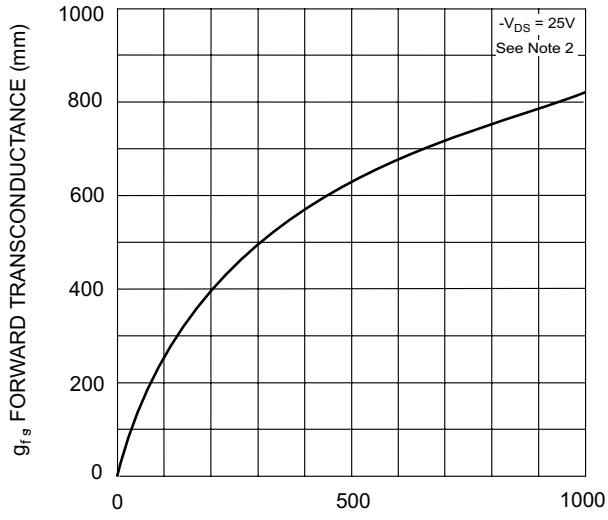


Fig. 6. Transconductance vs. Drain Current