



QNHCHIP

BS250

Product Specification

BS250

P-Channel Enhancement Mode Dmos Transistor



Features

- High Input Impedance
- Fast Switching Speed
- CMOS Logic Compatible Input
- No Thermal Runaway or Secondary Breakdown

Mechanical Data

- Case: TO-92, Plastic
- Leads: Solderable per MIL-STD-202, Method 208
- Pin Connection: See Diagram
- Approx Weight: 0.18 grams

Maximum Ratings

@ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	$-V_{DS}$	60	V
Drain-Gate Voltage	$-V_{DGS}$	60	V
Gate-Source-Voltage (pulsed)	V_{GS}	± 20	V
Drain Current (continuous)	$-I_D$	250	mA
Power Dissipation @ $T_C = 25^\circ\text{C}$ (Note 1)	P_d	830	mW
Operating and Storage Temperature Range	T_j, T_{STG}	-55 +150	$^\circ\text{C}$

Inverse Diode

@ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Value	Unit
Maximum Forward Current (continuous)	I_F	0.15	A
Forward Voltage Drop (Typ.) @ $V_{GS} = 0, I_F = 0.15\text{A}, T_j = 25^\circ\text{C}$	V_F	0.85	V



Electrical Characteristics

@ $T_A = 25^\circ\text{C}$ unless otherwise specified

Characteristic	Symbol	Test Condition	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	$-V_{(BR)DSS}$	$I_D = 100\mu\text{A}$, $V_{GS} = 0$	60	70		V
Gate Threshold Voltage	$-V_{GS(th)}$	$V_{GS} = V_{DS}$, $-I_D = 1.0\text{mA}$		1.0	3.0	V
Gate-Body Leakage Current	$-I_{GSS}$	$-V_{GS} = 15\text{V}$, $V_{DS} = 0$			20	nA
Drain-Source Cutoff Current	$-I_{DSS}$	$-V_{DS} = 25\text{V}$, $V_{GS} = 0$			0.5	μA
Drain-Source ON Resistance	$r_{DS(ON)}$	$-V_{GS} = 10\text{V}$, $-I_D = 0.2\text{A}$		3.5	5.0	Ω
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	Note 1			150	K/W
Forward Transconductance	g_{FS}	$-V_{DS} = 10\text{V}$, $-I_D = 0.2\text{A}$, $f = 1.0\text{MHz}$		150		mS
Input Capacitance	C_{iss}	$-V_{DS} = 10\text{V}$, $V_{GS} = 0$, $f = 1.0\text{MHz}$		60		pF
Switching Times Turn On Time Turn Off Time	t_{on} t_{off}	$-V_{GS} = 10\text{V}$, $-V_{DS} = 10\text{V}$, $R_D = 100\Omega$		5 25		ns

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



Typical Application Circuit

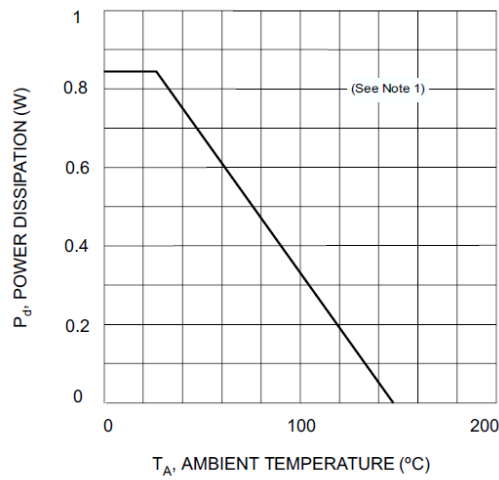


Fig. 1, Power Derating Curve

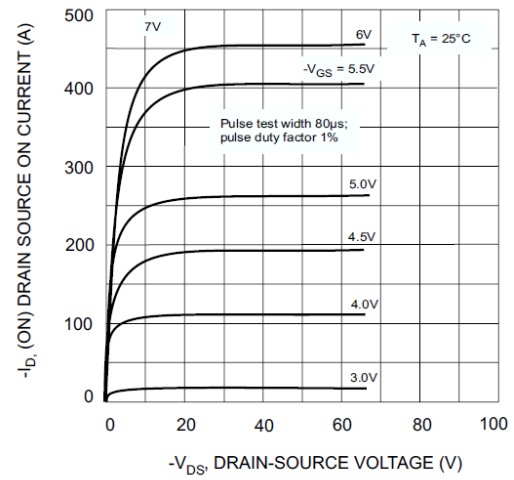


Fig. 2, Output Characteristics

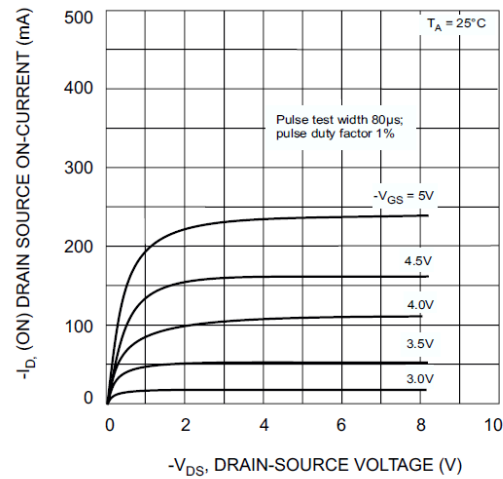


Fig. 3, Saturation Characteristics

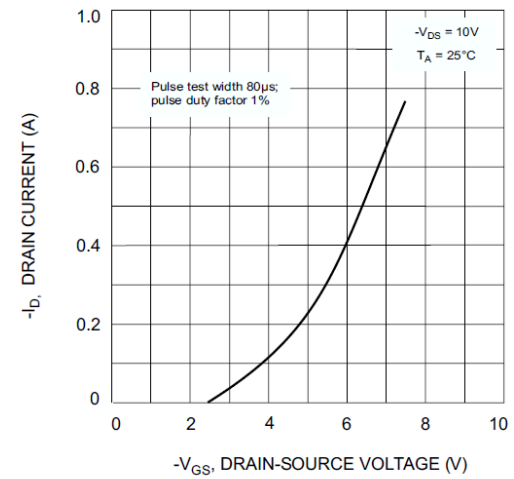


Fig. 4, Drain Current vs Gate-Source Voltage

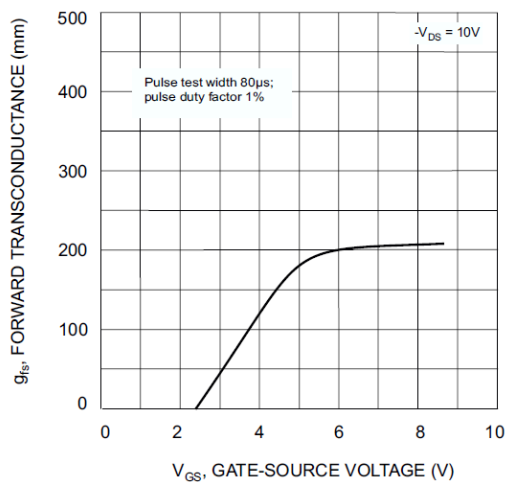


Fig. 5, Transconductance vs Gate-Source Voltage

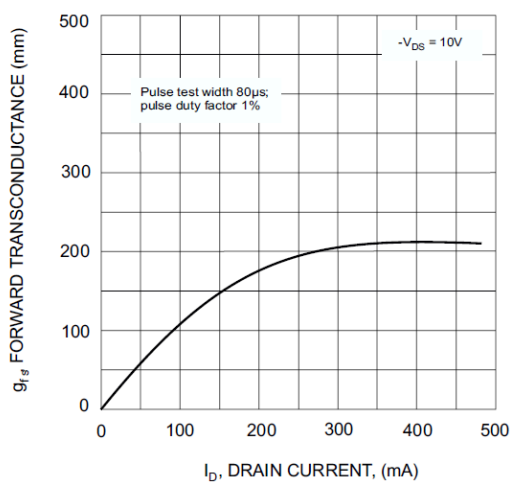
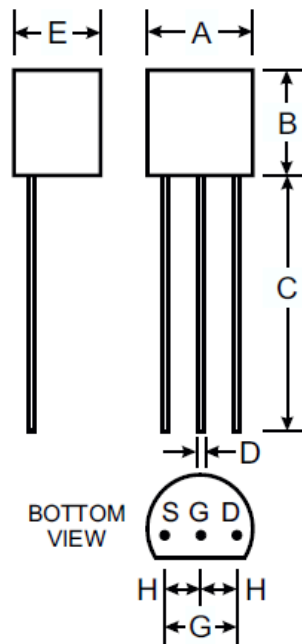


Fig. 6, Transconductance vs. Drain Current



Packaging Information

TO-92



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		

Ordering information

Order Code	Package Type	Minimum Packing QTY	Belivery Mode
BS250	TO-92	3000	Tape & Reel