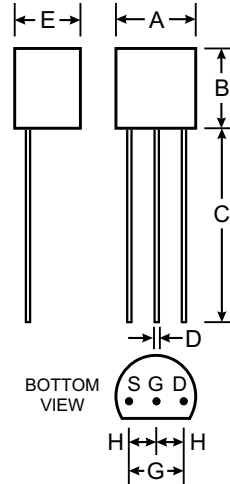


N-CHANNEL ENHANCEMENT MODE TRANSISTOR

Features

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



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		

Mechanical Data

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

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

Characteristic	Symbol	Value	Unit
Drain-Source Voltage	V_{DSS}	60	V
Drain-Gate Voltage	V_{DGS}	60	V
Gate-Source-Voltage (pulsed)	V_{GS}	± 20	V
Drain Current (continuous)	I_D	300	mA
Power Dissipation @ $T_C = 25^\circ\text{C}$ (Note 1)	P_d	830	mW
Junction Temperature	T_j	150	$^\circ\text{C}$
Operating and Storage Temperature Range	T_j, T_{STG}	-55 to +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	0.50	A
Forward Voltage Drop (typ.) @ $V_{GS} = 0, I_F = 0.5\text{A}, T_j = 25^\circ\text{C}$	V_F	0.85	V

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

Characteristic	Symbol	Min	Typ	Max	Unit	Test Condition
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	90	—	V	$I_D = 100\mu\text{A}, V_{GS} = 0$
Gate Threshold Voltage	$V_{GS(th)}$	0.8	1.0	3.0	V	$V_{GS} = V_{DS}, I_D = 1.0\text{mA}$
Gate-Body Leakage Current	I_{GSS}	—	—	10	nA	$V_{GS} = 15\text{V}, V_{DS} = 0$
Drain-Cutoff Current	I_{DSS}	—	—	0.5	μA	$V_{DS} = 25\text{V}, V_{GS} = 0$
Drain-Source ON Resistance	$r_{DS(ON)}$	—	3.5	5.0	Ω	$V_{GS} = 10\text{V}, I_D = 0.2\text{mA}$
Thermal Resistance, Junction to Ambient Air	$R_{\theta JA}$	—	—	150	K/W	Note 1
Forward Transconductance	g_{FS}	—	200	—	mS	$V_{DS} = 10\text{V}, I_D = 0.2\text{A}, f = 1\text{MHz}$
Input Capacitance	C_{iss}	—	60	—	pF	$V_{DS} = 10\text{V}, V_{GS} = 0, f = 1.0\text{MHz}$
Turn On Time	t_{on}	—	5.0	—	ns	$V_{GS} = 10\text{V}, V_{DS} = 10\text{V}, R_D = 100\Omega$
Turn Off Time	t_{off}	—	15	—	ns	

Notes: 1. Valid provided that leads are kept at ambient temperature at a distance of 2.0mm from case.

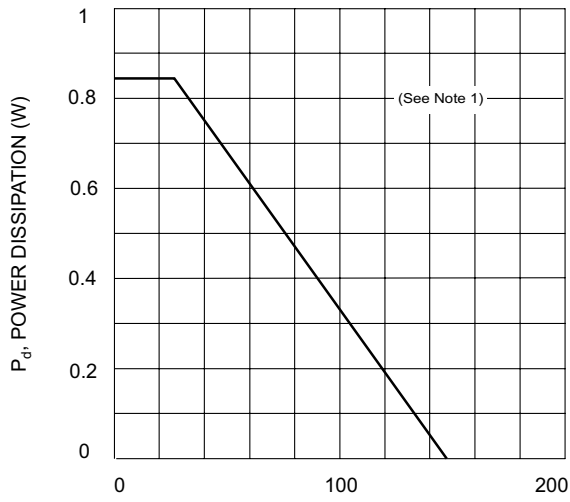


Fig. 1. Power Derating Curve

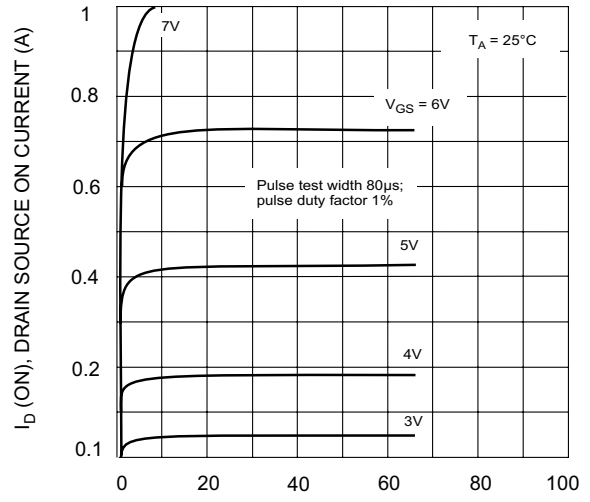


Fig. 2. Output Characteristics

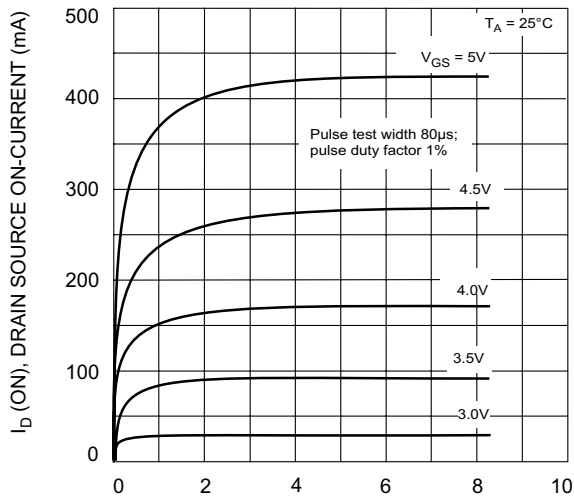


Fig. 3. Saturation Characteristics

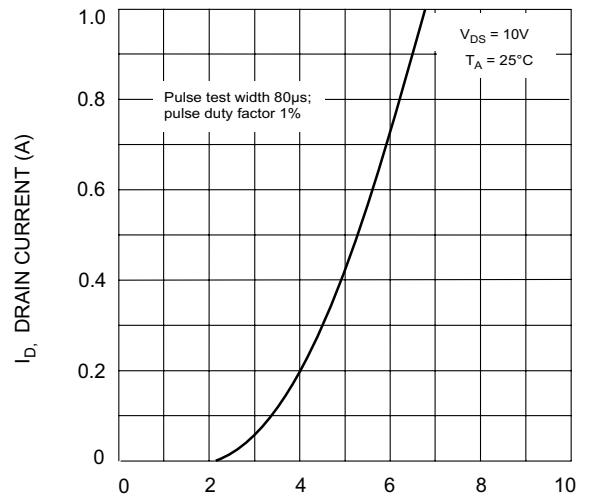


Fig. 4. Drain Current vs Gate-Source Voltage

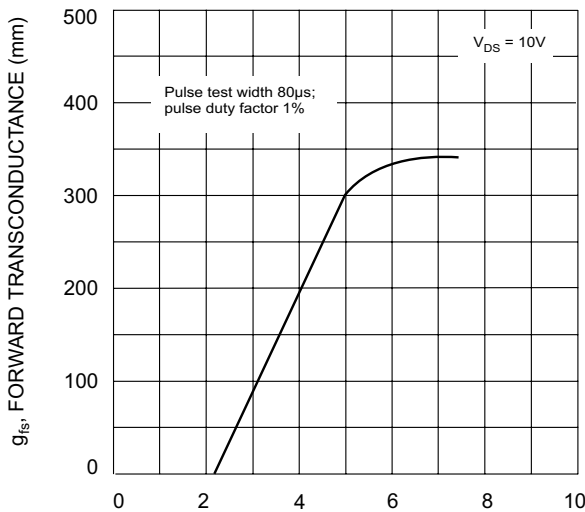


Fig. 5. Transconductance vs Gate-Source Voltage

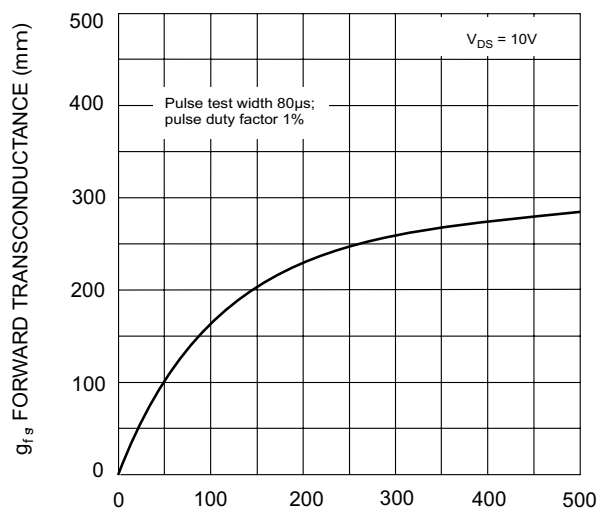


Fig. 6. Transconductance vs. Drain Current