Micro Commercial Components
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2N7000

DMOS Transistor (N-Channel)

Features

- Low Drain-Source ON-Resistance
- High Input Impedance
- High-Speed Switching
- CMOS Logic Compatible Input
- Marking Code: 2N7000

Maximum Ratings @T_A=25°C Unless Otherwise Noted

- Operation Temperature: -55°C to +150°C
- Storage Temperature: -55°C to +150°C
- Maximum Thermal Resistance: 150°C/W Junction to Ambient

Parameter	Symbol	Value	Unit
Drain-Source-Voltage	V_{DSS}	60	V
Drain-Gate-Voltage	V_{DGS}	60	V
Gate-Source-Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	300	mA
Pulsed Drain Current	I_{DM}	1.3	A
Maximum Power Dissipation	P_{TOT}	830(1)	mW

Note: (1) Valid provided that are kept at ambient temperature at a distance of 2mm from case

Electrical Characteristics @ T_A=25°C Unless Otherwise Noted

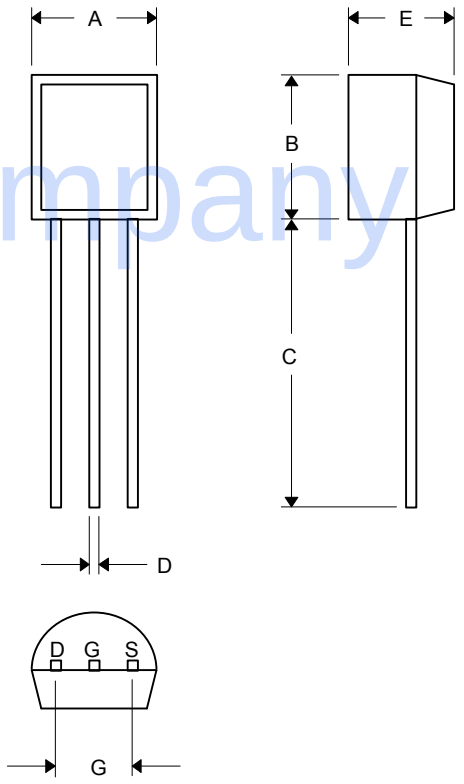
Parameter	Symbol	Min	Typ	Max	Test Condition
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60V	90V	----	I_D=100μA, V_{GS}=0
Gate-Body Leakage Current	I_{GSS}	----	----	±10nA	V_{GS}=±20V, V_{DS}=0V
Drain Cutoff Current	I_{DSS}	----	----	1.0μA	V_{DS}=48V,V_{GS}=0V
Gate-Source Threshold Voltage	$V_{GS(th)}$	0.8V	1.5V	3.0V	V_{GS}=V_{DS}, I_D=1.0mA
Drain-Source On-State Resistance	$R_{DS(on)}$	----	3.5Ω	5.0Ω	V_{GS}=10V, I_D=500mA
Input Capacitance	C_{iss}	----	60pF	----	V_{DS}=25V, V_{GS}=0, f=1MHz
Output Capacitance	C_{oss}	----	25pF	----	
Feedback Capacitance	C_{rss}	----	5pF	----	
Turn-On Time	T_{on}	----	10ns	----	V_{GS}=10V, V_{DS}=10V, R_D=100Ω
Turn-Off Time	T_{off}	----	10ns	----	

Source-Drain Diode

Parameter	Symbol	Value	Unit
Max. Forward Current	I_F	500(1)	mA
Typ. Diode Forward Voltage	V_{SD}	850(2)	mV

Note: (1) Tested at T_{amb} = 25°C
(2) Tested at V_{GS} = 0, I_F = 0.5A, T_J = 25°C

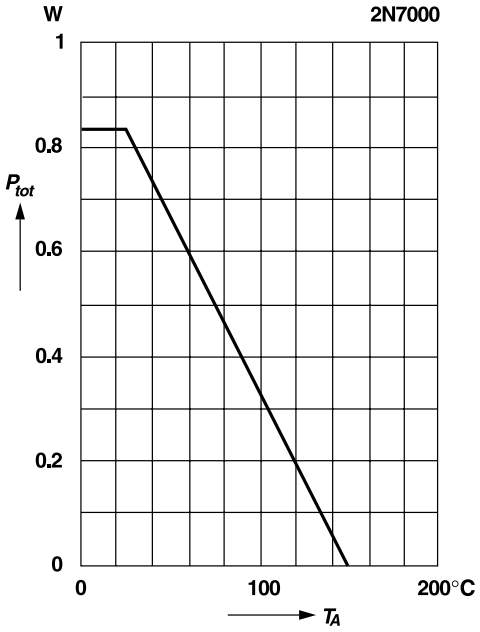
TO-92



DIMENSIONS					
	INCHES		MM		
DIM	MIN	MAX	MIN	MAX	NOTE
A	.175	.185	4.45	4.70	
B	.175	.185	4.46	4.70	
C	.500	---	12.7	---	
D	.016	.020	0.41	0.63	
E	.135	.145	3.43	3.68	
G	.095	.105	2.42	2.67	

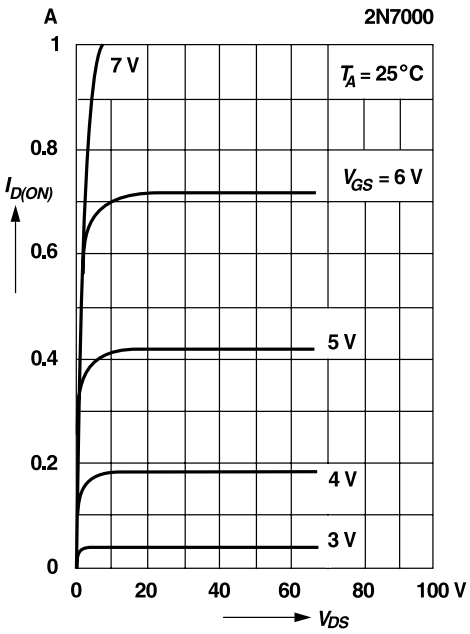
Admissible power dissipation versus temperature

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



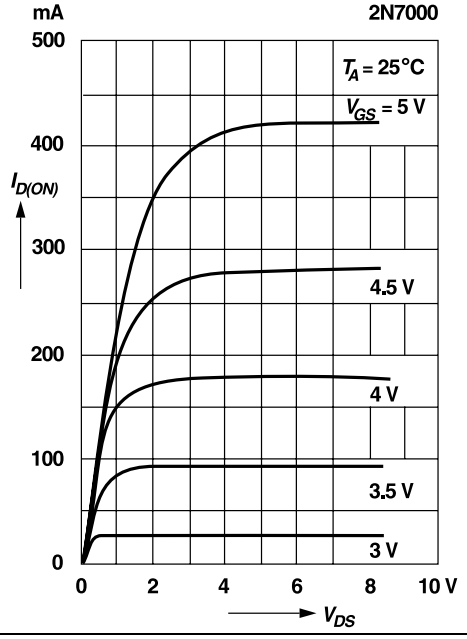
Output characteristics

Pulse test width 80 ms; pulse duty factor 1%.

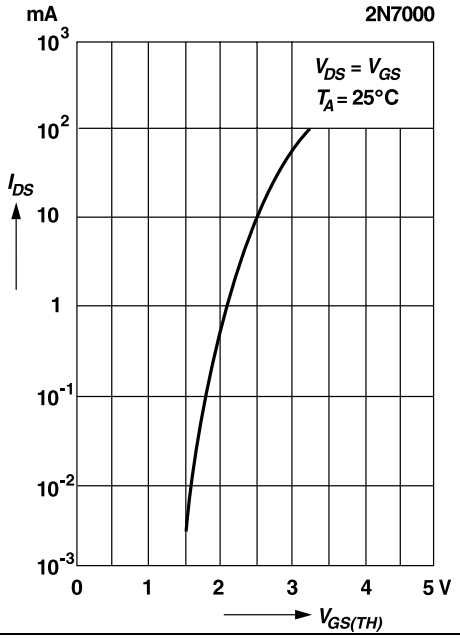


Saturation characteristics

Pulse test width 80 ms; pulse duty factor 1%.

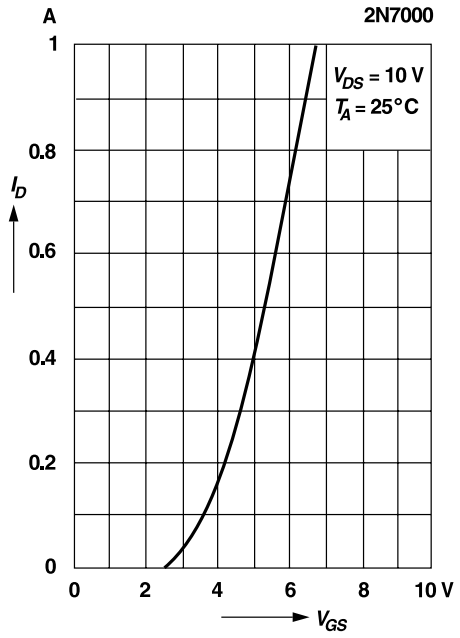


Drain-source current versus gate threshold voltage

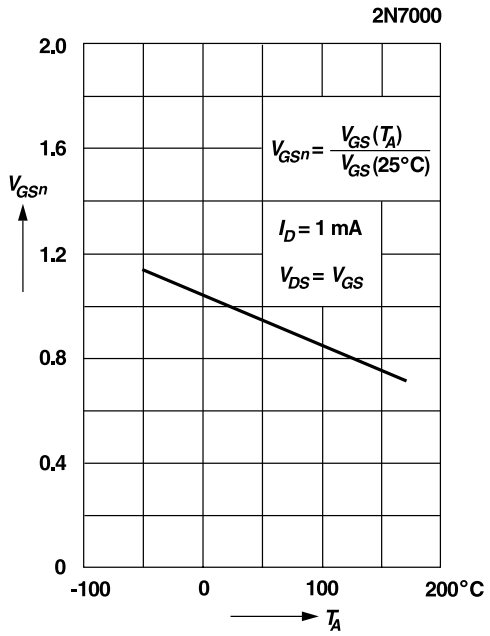


Drain current versus gate-source voltage

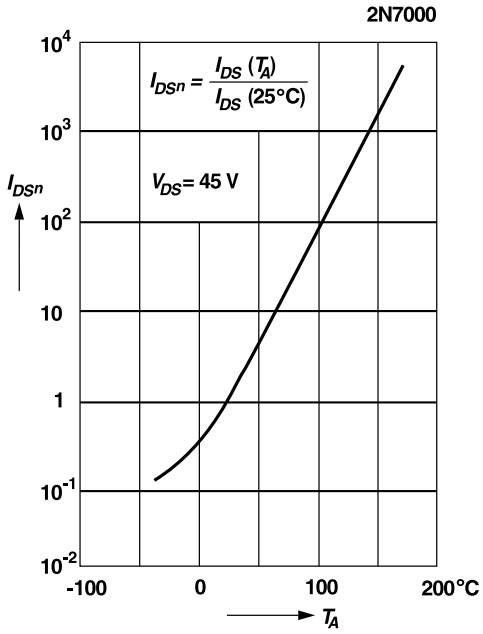
Pulse test width 80 ms; pulse duty factor 1%.



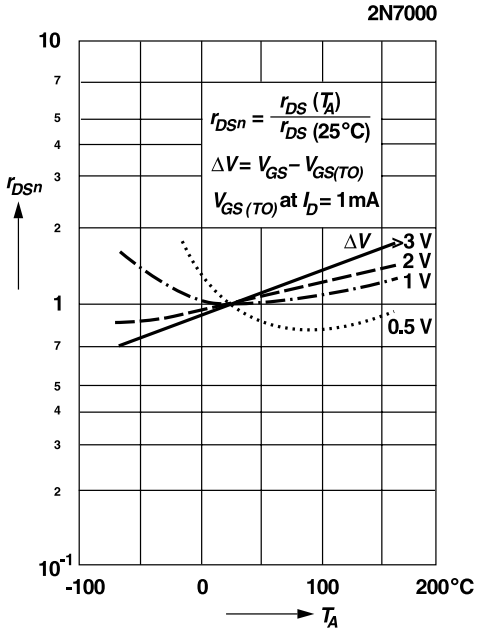
Normalized gate-source voltage versus temperature



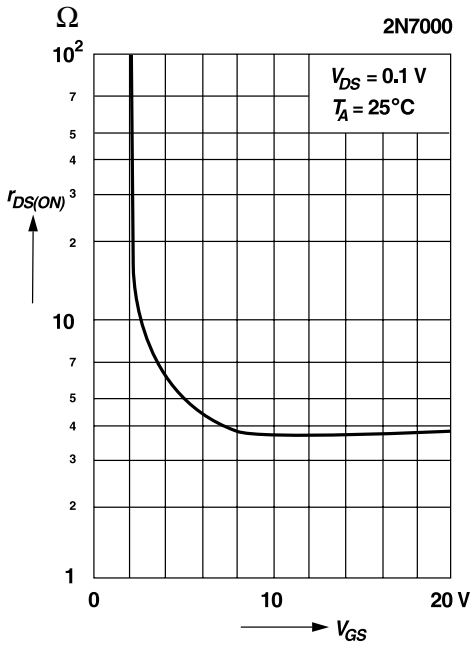
Normalized drain-source current versus temperature



Normalized drain-source resistance versus temperature

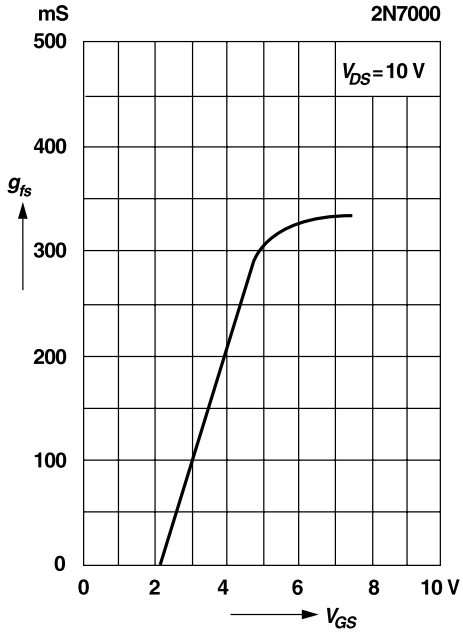


Drain-source resistance versus gate-source voltage



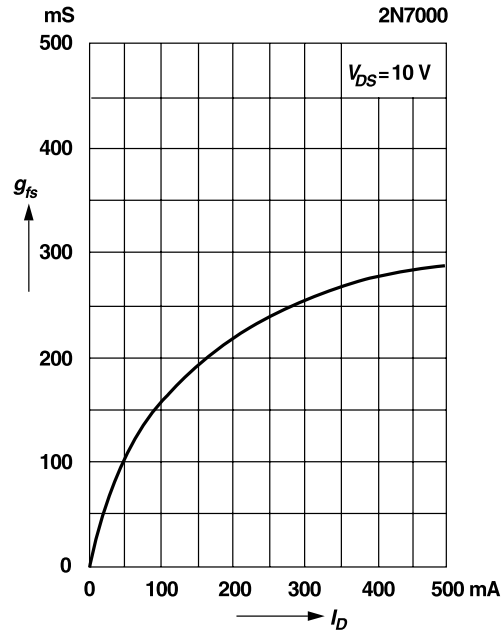
Transconductance versus gate-source voltage

Pulse test width 80 ms; pulse duty factor 1%



Transconductance versus drain current

Pulse test width 80 ms; pulse duty factor 1%



Capacitance versus drain-source voltage