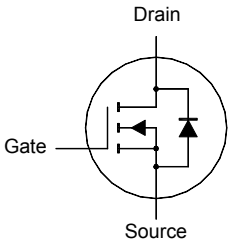
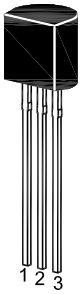
ST 2N7000

Small Signal MOSFET

200 mA, 60 V
N-Channel





1. Source 2.Gate 3.Drain
TO-92 Plastic Package

Absolute Maximum Ratings (T_a = 25 °C)

Parameter		Symbol	Value	Unit
Drain Source Voltage		V_{DSS}	60	V
Drain-Gate Voltage (R_{GS} = 1 MΩ)		V_{DGR}	60	V
Gate-source Voltage	Continuous	V_{GS}	± 20	V
	Non-repetitive (tp ≤ 50 µs)	V_{GSM}	± 40	V
Drain Current	Continuous	I_D	200	mA
	Pulsed	I_{DM}	500	mA
Total Power Dissipation		P_D	350	mW
Junction Temperature		T_j	150	°C
Storage Temperature Range		T_{stg}	- 55 to + 150	°C

Characteristics at T_a = 25 °C

Parameter	Symbol	Min.	Max.	Unit
Drain-Source Breakdown Voltage at V_{GS} = 0, I_D = 10 µA	$V_{(BR)DSS}$	60	-	V
Zero Gate Voltage Drain Current at V_{DS} = 48 V, V_{GS} = 0	I_{DSS}	-	1	µA
Gate-Body Leakage Current at V_{GS} = ± 15 V, V_{DS} = 0	± I_{GSS}	-	10	nA
Gate Threshold Voltage at V_{DS} = V_{GS}, I_D = 1 mA	$V_{GS(th)}$	0.8	3	V
Static Drain-Source On-Resistance at V_{GS} = 10 V, I_D = 500 mA at V_{GS} = 4.5 V, I_D = 75 mA	$r_{DS(on)}$	- -	5 6	Ω
Drain-Source On-Voltage at V_{GS} = 10 V, I_D = 500 mA at V_{GS} = 4.5 V, I_D = 75 mA	$V_{DS(on)}$	- -	2.5 0.45	V
On-State Drain Current at V_{GS} = 4.5 V, V_{DS} = 10 V	$I_{D(on)}$	75	-	mA
Forward Transconductance at V_{DS} = 10 V, I_D = 200 mA	g_{fs}	100	-	mS
Input Capacitance at V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz	C_{iss}	-	60	pF
Output Capacitance at V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz	C_{oss}	-	25	pF
Reverse Transfer Capacitance at V_{DS} = 25 V, V_{GS} = 0, f = 1 MHz	C_{rss}	-	5	pF
Turn-On Delay Time at V_{DD} = 15 V, I_D = 500 mA, R_G = 25 Ω, R_L = 30 Ω, V_{gen} =10V	t_{on}	-	10	ns
Turn-Off Delay Time at V_{DD} = 15 V, I_D = 500 mA, R_G = 25 Ω, R_L = 30 Ω, V_{gen}=10V	t_{off}	-	10	ns