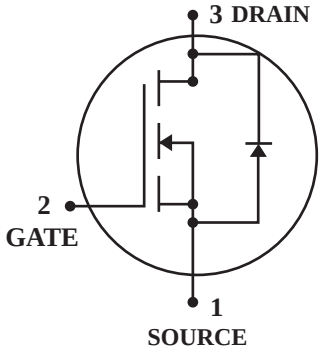
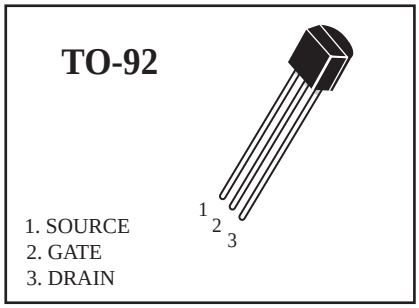
WEITRON

2N7000

Small Signal MOSFET
N-Channel

Lead(Pb)-Free





Features:

*Low On-Resistance : 5Ω
*Low Input Capacitance: 60PF
*Low Out put Capacitance : 25PF
*Low Threshole :1.4V(TYE)
*Fast Switching Speed : 10ns

Maximum Ratings (TA=25°C Unless Otherwise Specified)

Rating	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current (TA=25°C)	I_D	200	mA
Pulsed Drain Current(1)	I_{DM}	500	mA
Power Dissipation (TA=25°C)	P_D	350	mW
Maximax Junction-to-Ambient	$R_{\theta JA}$	357	°C/W
Operating Junction and Storage Temperature Range	T_J, Tstg	-55 to 150	°C

Device Marking

2N7000=7000

Note 1:
Pulse Width Limited by Maximum Junction Temperature

Electrical Characteristics (T_A=25°C Unless otherwise noted)

Characteristic	Symbol	Min	Max	Unit
Static				
Drain-Source Breakdown Voltage V_{GS}=0V, I_D=10 uA	$V_{(BR)DSS}$	60	-	V
Gate-Threshold Voltage V_{DS}=V_{GS} , I_D=1.0 mA	$V_{GS\ (th)}$	0.8	3.0	V
Gate-body Leakage V_{DS}=0V, V_{GS}=15V	I_{GSS}	-	-10	nA
Zero Gate Voltage Drain Current V_{DS}=48V, V_{GS}=0V V_{DS}=48V, V_{GS}=0V, T_j=125°C	I_{DSS}	- -	1.0 1.0	uA mA
On-State Drain Current (2) V_{GS}=4.5V, V_{DS}=10V	$I_{D\ (on)}$	75	-	mA
Drain-Source On-Resistance (2) V_{GS}=10V, I_D=500mA V_{GS}=4.5V, I_D=75mA	$r_{DS\ (on)}$	- -	5.0 6.0	Ω
Forward Transconductance (2) V_{DS}=10V, I_D=200mA	g_{fs}	100	-	us
Drain-Source On-Voltage V_{GS}=10V, I_D=500mA V_{GS}=10V, I_D=75mA	$V_{SD(on)}$	- -	2.5 0.45	V

Dynamic(1)

Input Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{iss}	-	60	PF
Output Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{oss}	-	25	
Reverse Transfer Capacitance V_{DS}=25V, V_{GS}=0V, f=1MHZ	C_{rss}	-	5.0	

Switching (1) (3)

Turn-On Time V_{DD}=15V, R_L=30Ω, I_D=500mA V_{GEN}=10V, R_G=25Ω	$t_{d(on)}$	-	10	nS
Turn-Off Time V_{DD}=15V, R_L=30Ω, I_D=500mA V_{GEN}=10V, R_G=25Ω	$t_{d(off)}$	-	10	nS

Note: 1. For Design Aid Only not Subject to Production Testing.

2. Pulse Test : PW≤ 300μs, Duty Cycle ≤ 2%

3. Switching Time is Essentially Independent of Operating Temperature .

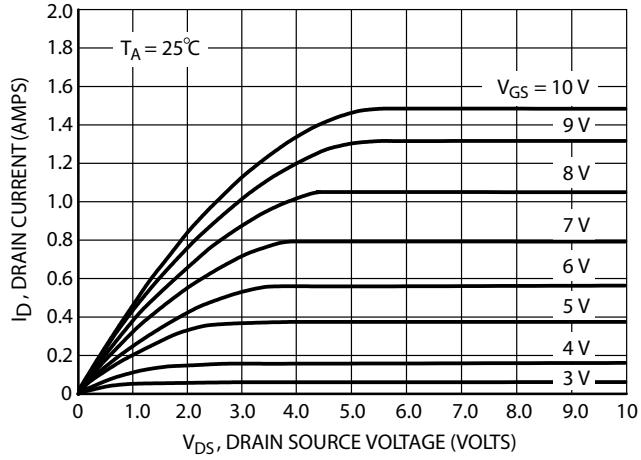


FIG. 1 Ohmic Region

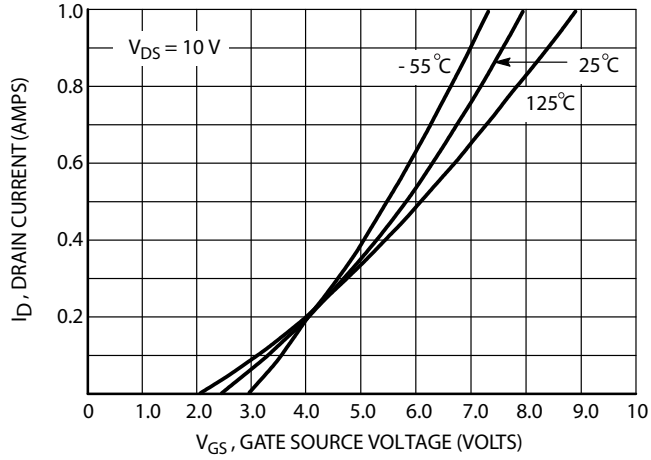


FIG.2 Transfer Characteristics

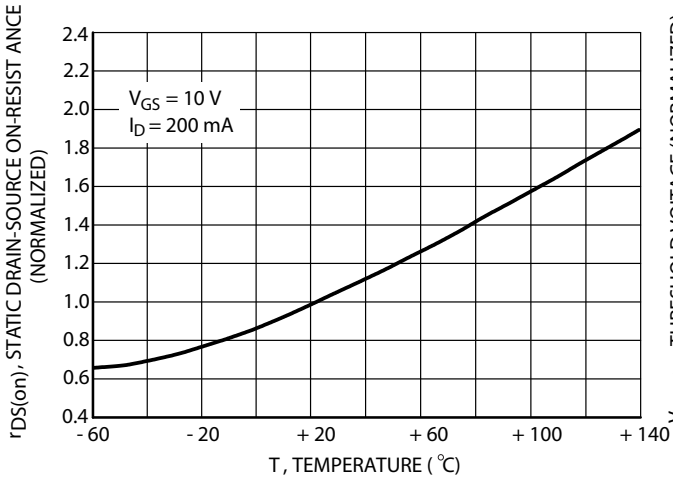


FIG.3 Temperature versus Static Drain-Source On-Resistance

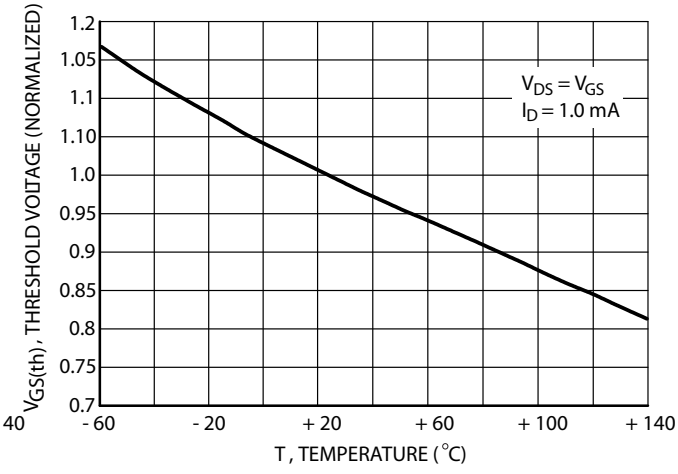
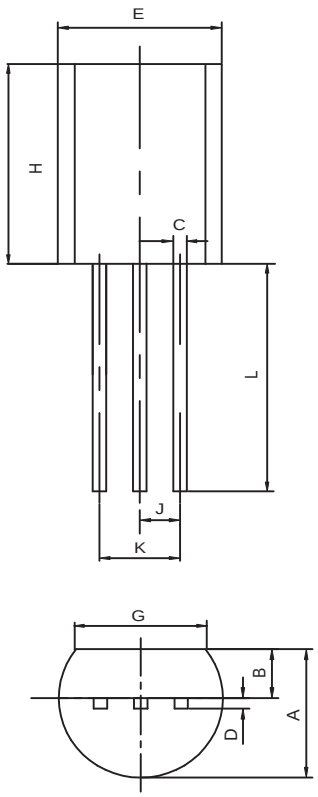


FIG.4 Temperature versus Gate Threshold Voltage

TO-92 Outline Dimensions

unit:mm



TO-92		
Dim	**Min**	**Max**
A	3.000	5.100
B	1.100	2.030
C	0.380	0.600
D	0.360	1.100
E	4.400	0.500
G	3.430	-
H	4.300	4.700
J	1.270TYP	
K	2.440	2.640
L	14.100	14.500