

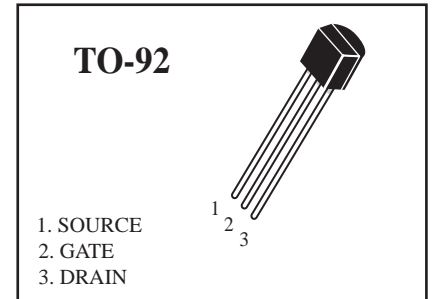
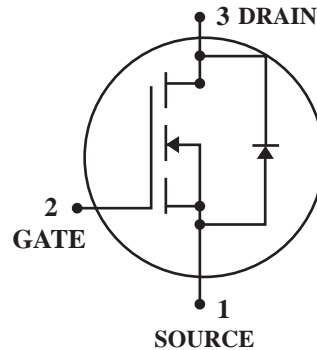
Small Signal MOSFET

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, T_{stg}	-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
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Static

Drain-Source Breakdown Voltage V _{GS} =0V, I _D =10 μA	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	μA 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 .

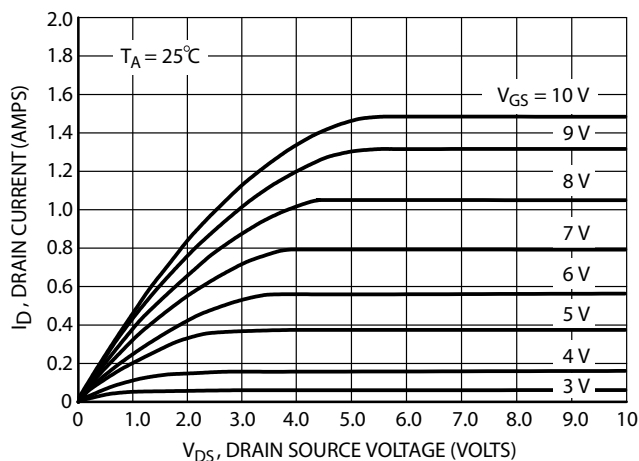


FIG. 1 Ohmic Region

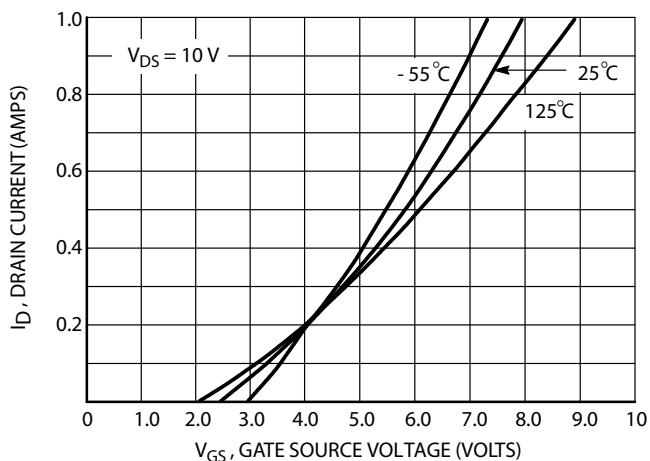


FIG. 2 Transfer Characteristics

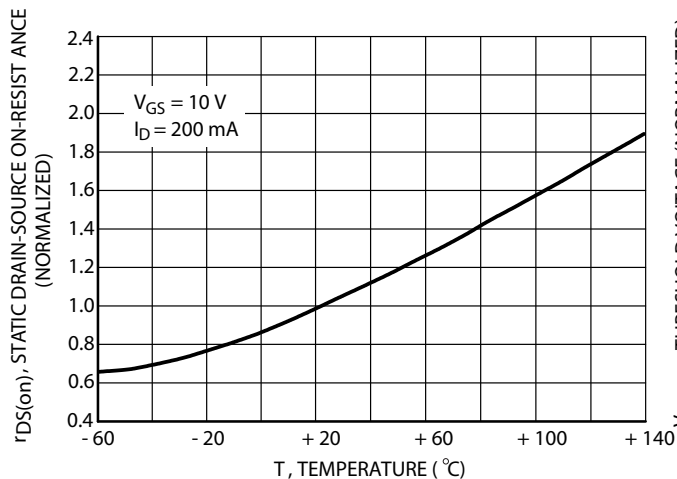


FIG. 3 Temperature versus Static Drain-Source On-Resistance

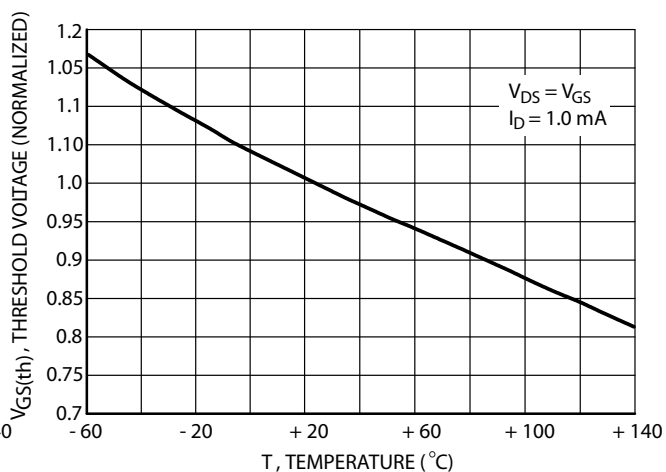


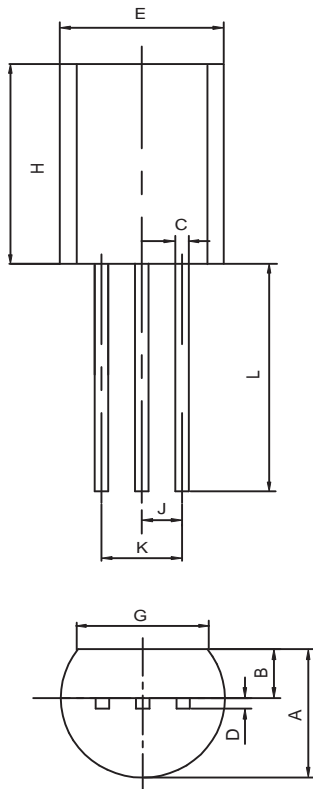
FIG. 4 Temperature versus Gate Threshold Voltage

2N7000

WEITRON

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