Advanced Small Signal MOSFET 2N7000BU/2N7000TA

FEATURES

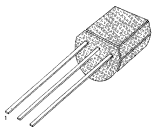
- Fast Switching Times
- Improved Inductive Ruggedness
- Lower Input Capacitance
- Extended Safe Operating Area
- Improved High Temperature Reliability

BV_{DSS} = 60 V

$R_{DS(on)}$ = 5.0 Ω

I_D = 200 mA

TO-92



1.Source 2. Gate 3. Drain

Absolute Maximum Ratings

Symbol	Characteristic	Value	Units
V_{DSS}	Drain-to-Source Voltage	60	V
I_D	Continuous Drain Current (T_C=25℃)	200	mA
	Continuous Drain Current (T_C=100℃)	110	
I_{DM}	Drain Current-Pulsed ①	1000	mA
V_{GS}	Gate-to-Source Voltage	±30	V
P_D	Total Power Dissipation (T_C=25℃)	400	mW
	Linear Derating Factor	3.2	mW/℃
T_J , T_{STG}	Operating Junction and Storage Temperature Range	- 55 to +150	℃
T_L	Maximum Lead Temp. for Soldering Purposes, 1/8? from case for 5-seconds	300	

Thermal Resistance

Symbol	Characteristic	Typ.	Max.	Units
$R_{\theta JA}$	Junction-to-Ambient	--	312.5	℃/W

Electrical Characteristics (T_C=25℃ unless otherwise specified)

Symbol	Characteristic	Min.	Typ.	Max.	Units	Test Condition
BV_{DSS}	Drain-Source Breakdown Voltage	60	--	--	V	V_{GS}=0V,I_D=250μA
$V_{GS(th)}$	Gate Threshold Voltage	0.3	--	3.9	V	V_{DS}= V_{GS},I_D=250μA
		0.4	--	2.2		V_{DS}= V_{GS},I_D=1mA
I_{GSS}	Gate-Source Leakage , Forward	--	--	100	nA	V_{GS}=15V
	Gate-Source Leakage , Reverse	--	--	-100		V_{GS}=-15V
I_{DSS}	Drain-to-Source Leakage Current	--	--	1	μA	V_{DS}=60V
		--	--	1000		V_{DS}=45V,T_C=125℃
$R_{DS(on)}$	Static Drain-Source On-State Resistance ②	--	--	5.0	Ω	V_{GS}=10V,I_D=0.5A
g_{fs}	Forward Transconductance ②	0.1	0.3	--	S	V_{DS}=15V,I_D=0.5A
C_{iss}	Input Capacitance	--	30	--	pF	V_{GS}=0V,V_{DS}=25V, f =1MHz
C_{oss}	Output Capacitance	--	12	--		
C_{rss}	Reverse Transfer Capacitance	--	3.0	--		
$t_{d(on)}$	Turn-On Delay Time	--	--	10	ns	V_{DD}=30V,I_D=0.5A, R_G=15Ω ②③
t_r	Rise Time	--	--	10		
$t_{d(off)}$	Turn-Off Delay Time	--	--	10		
t_f	Fall Time	--	--	10		

Notes ;

① Repetitive Rating : Pulse Width Limited by Maximum Junction Temperature
② Pulse Test : Pulse Width = 250μs, Duty Cycle ≤ 2%
③ Essentially Independent of Operating Temperature

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