Elektronische Bauelemente

2N7000

0.2A , 60V , $R_{DS(ON)}$ 5Ω

N-Channel Enhancement Mode Power MOSFET

RoHS Compliant Product
A suffix of "-C" specifies halogen & lead-free

FEATURES

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

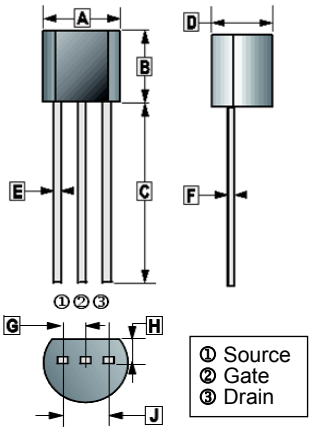
APPLICATIONS

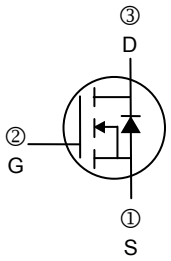
- Load switch for portable devices
- DC/DC converter

MARKING

2N
7000
021

TO-92





REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.70	F	0.30	0.51
B	4.30	4.70	G	1.27 TYP.	
C	12.70	14.5	H	1.10	1.40
D	3.30	3.81	J	2.42	2.66
E	0.36	0.56			

ABSOLUTE MAXIMUM RATINGS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Continuous Drain Current	I_D	0.2	A
Power Dissipation	P_D	0.625	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	200	°C / W
Operating Junction and Storage Temperature Range	T_J, T_{STG}	150, -55~150	°C

ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	V_{GS}=0, I_D=10μA
Gate Threshold Voltage [1]	$V_{GS(th)}$	0.8	-	3	V	V_{DS}=V_{GS}, I_D=1mA
Gate-Source Leakage Current	I_{GSS}	-	-	±10	nA	V_{DS}=0, V_{GS}= ±15V
Drain-Source Leakage Current	I_{DSS}	-	-	1	μA	V_{DS}=60V, V_{GS}=0
On-State Drain Current	$I_{D(ON)}$	75	-	-	mA	V_{DS}=10V, V_{GS}=4.5V
Static Drain-Source On-Resistance [1]	$R_{DS(ON)}$	-	-	6	Ω	V_{GS}=4.5V, I_D=75mA
		-	-	5		V_{GS}=10V, I_D=500mA
Forward Transconductance [1]	g_{fs}	100	-	-	mS	V_{DS}=10V, I_D=200mA
Drain-Source On-Voltage [1]	$V_{DS(ON)}$	-	-	0.45	V	V_{GS}=4.5V, I_D=75mA
		-	-	2.5		V_{GS}=10V, I_D=500mA
Input Capacitance [2]	C_{iss}	-	60	-	pF	V_{GS}=0 V_{DS}=25V f=1MHz
Output Capacitance [2]	C_{oss}	-	25	-		
Reverse Transfer Capacitance [2]	C_{rss}	-	5	-		
Turn-on Delay Time [2]	$T_{d(on)}$	-	10	-	nS	V_{DD}=15V, V_{GEN}=10V R_L=30Ω, R_G=25Ω, I_D=500mA
Turn-off Delay Time [2]	$T_{d(off)}$	-	10	-		

Notes:
1. Pulse Test.
2. These parameters have no way to be verified.

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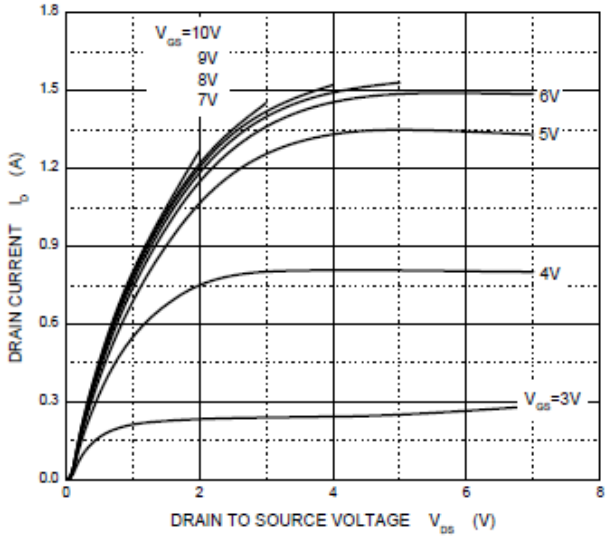
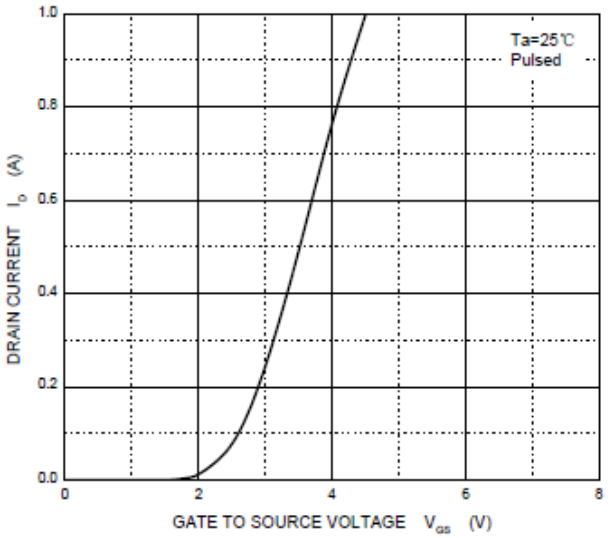
CHARACTERISTIC CURVES

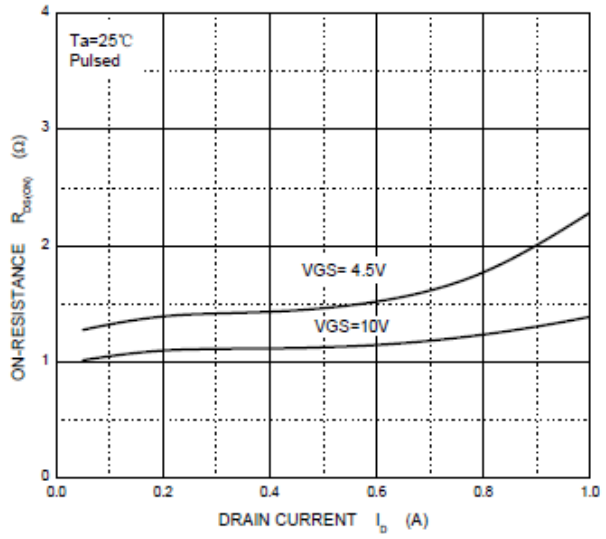
Output Characteristics



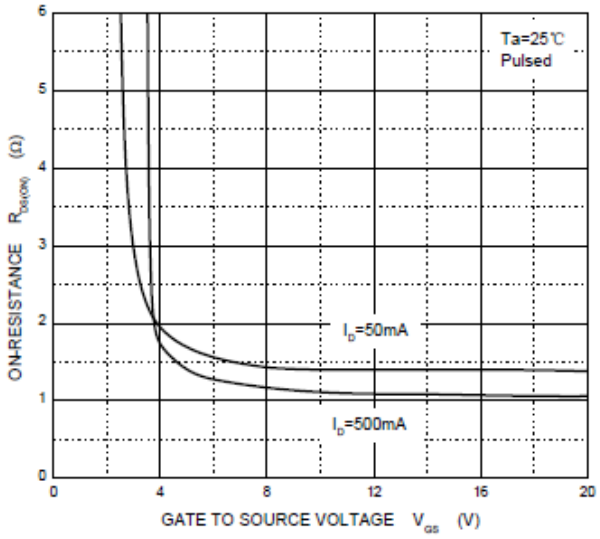
Transfer Characteristics



$R_{DS(ON)}$ — I_D



$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}