

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

### FEATURES

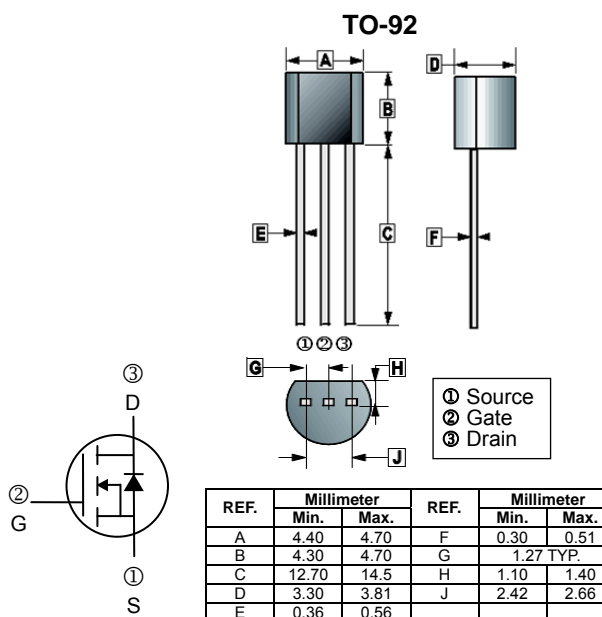
- High density cell design for low  $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

### APPLICATIONS

- Load switch for portable devices
- DC/DC converter

### MARKING

2N
7000
021



### ABSOLUTE MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ 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	$^\circ\text{C} / \text{W}$
Operating Junction and Storage Temperature Range	$T_J, T_{STG}$	150, -55~150	$^\circ\text{C}$

### ELECTRICAL CHARACTERISTICS ( $T_A=25^\circ\text{C}$ unless otherwise specified)

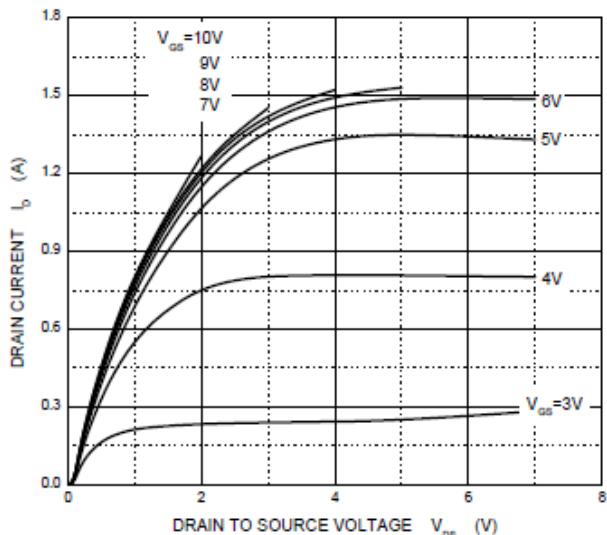
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Condition
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	60	-	-	V	$V_{GS}=0, I_D=10\mu\text{A}$
Gate Threshold Voltage <sup>1</sup>	$V_{GS(th)}$	0.8	-	3	V	$V_{DS}=V_{GS}, I_D=1\text{mA}$
Gate-Source Leakage Current	$I_{GSS}$	-	-	$\pm 10$	nA	$V_{DS}=0, V_{GS}=\pm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

Notes:

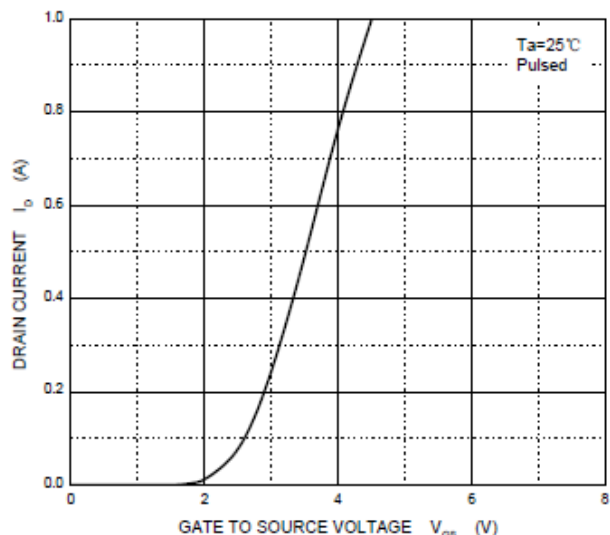
1. Pulse Test.
2. These parameters have no way to be verified.

**CHARACTERISTIC CURVES**

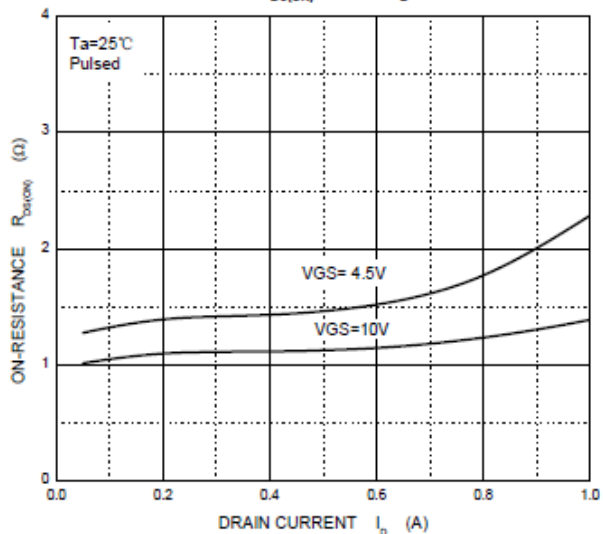
Output Characteristics



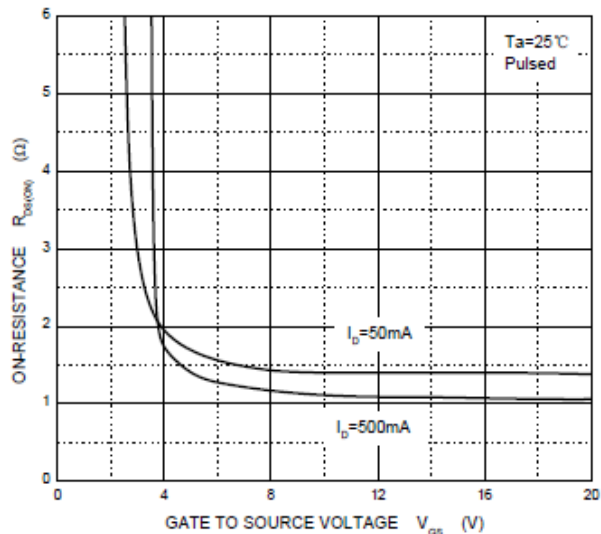
Transfer Characteristics



$R_{DS(ON)}$  —  $I_D$



$R_{DS(ON)}$  —  $V_{GS}$



$I_S$  —  $V_{SD}$

