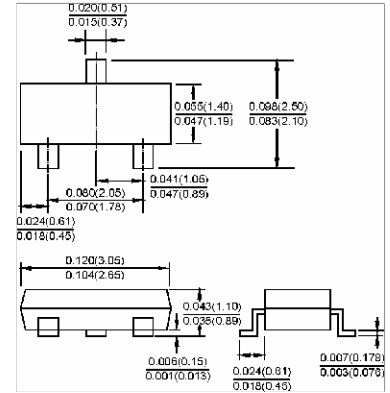


1. GATE
2. SOURCE
3. DRAIN

## SOT-23



Dimensions in inches and (millimeters)

## Features

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

Marking: 7002

## MAXIMUM RATINGS ( $T_A=25^\circ\text{C}$ unless otherwise noted)

Symbol	Parameter	Value	Units
$V_{DS}$	Drain-Source voltage	60	V
$I_D$	Drain Current	115	mA
$P_D$	Power Dissipation	225	mW
$T_J$	Junction Temperature	150	$^\circ\text{C}$
$T_{stg}$	Storage Temperature	-55-150	$^\circ\text{C}$

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

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	$V_{GS}=0\text{ V}, I_D=10\ \mu\text{A}$	60			V
Gate-Threshold Voltage	$V_{th(GS)}$	$V_{DS}=V_{GS}, I_D=250\ \mu\text{A}$	1		2.5	
Gate-body Leakage	$I_{GSS}$	$V_{DS}=0\text{ V}, V_{GS}=\pm 25\text{ V}$			$\pm 80$	nA
Zero Gate Voltage Drain Current	$I_{DSS}$	$V_{DS}=60\text{ V}, V_{GS}=0\text{ V}$			80	nA
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10\text{ V}, V_{DS}=7\text{ V}$	500			mA
Drain-Source On-Resistance	$r_{DS(on)}$	$V_{GS}=10\text{ V}, I_D=500\text{mA}$	1		7.5	$\Omega$
		$V_{GS}=5\text{ V}, I_D=50\text{mA}$	1		7.5	
Forward Trans conductance	$g_{fs}$	$V_{DS}=10\text{ V}, I_D=200\text{mA}$	80		500	ms
Drain-source on-voltage	$V_{DS(on)}$	$V_{GS}=10\text{V}, I_D=500\text{mA}$	0.5		3.75	V
		$V_{GS}=5\text{V}, I_D=50\text{mA}$	0.05		0.375	V
Diode Forward Voltage	$V_{SD}$	$I_S=115\text{mA}, V_{GS}=0\text{ V}$	0.55		1.2	V
Input Capacitance	$C_{iss}$	$V_{DS}=25\text{V}, V_{GS}=0\text{V}, f=1\text{MHz}$			50	pF
Output Capacitance	$C_{oss}$				25	
Reverse Transfer Capacitance	$C_{rss}$				5	

## SWITCHING TIME

Turn-on Time	$t_{d(on)}$	$V_{DD}=25\text{ V}, R_L=50\Omega$ $I_D=500\text{mA}, V_{GEN}=10\text{ V}$			20	ns
Turn-off Time	$t_{d(off)}$	$R_G=25\ \Omega$			40	

## Typical characteristics

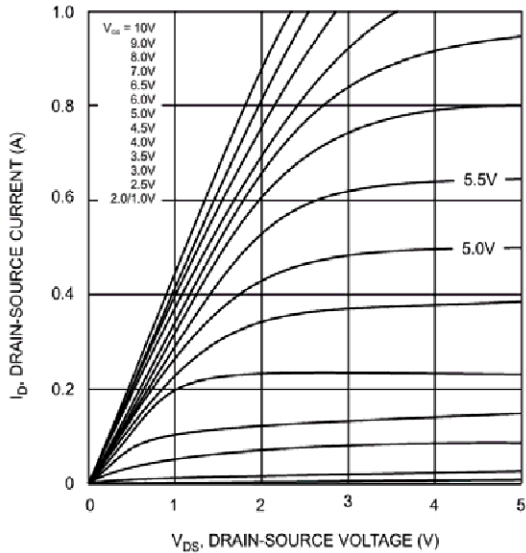


Fig. 1 On-Region Characteristics

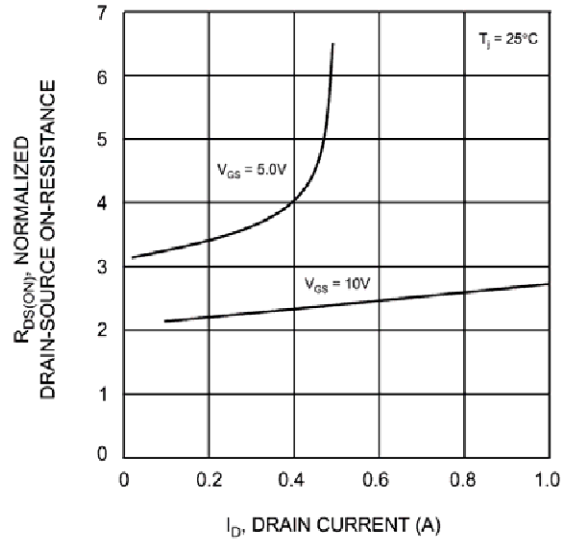


Fig. 2 On-Resistance vs. Drain Current

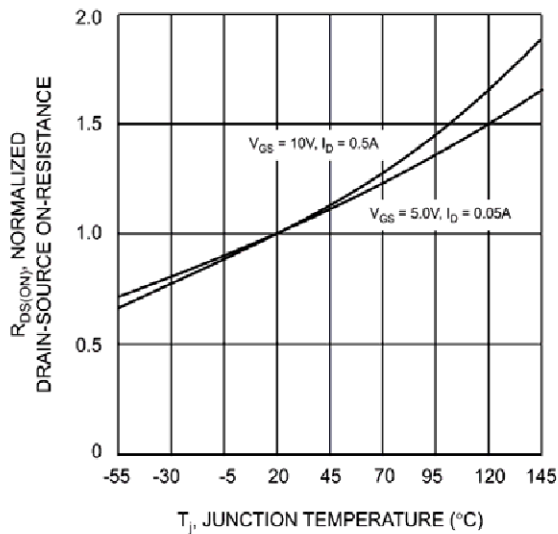


Fig. 3 On-Resistance vs. Junction Temperature

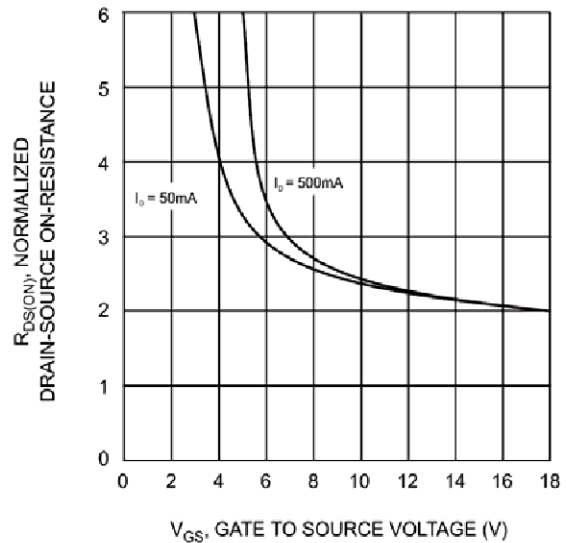


Fig. 4 On-Resistance vs. Gate-Source Voltage