

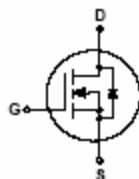
# N-CHANNEL MOSFET

## PRODUCT SUMMARY

SOT-23 Plastic-Encapsulate Transistors

## FEATURES

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



**SOT-23**



1. GATE
2. SOURCE
3. DRAIN



**Pb-free; RoHS-compliant**

## 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	°C
$T_{stg}$	Storage Temperature	-55-150	°C

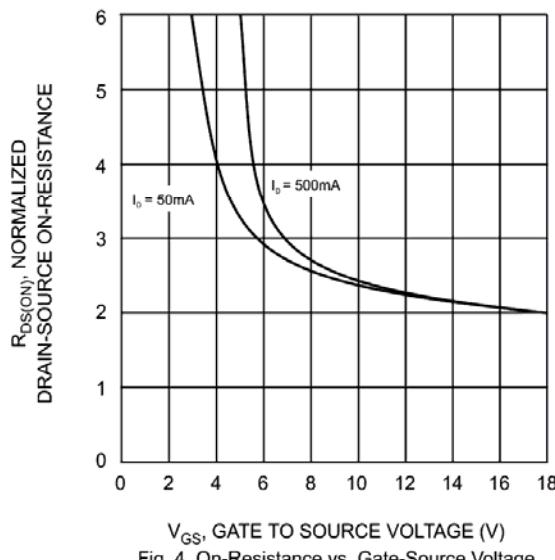
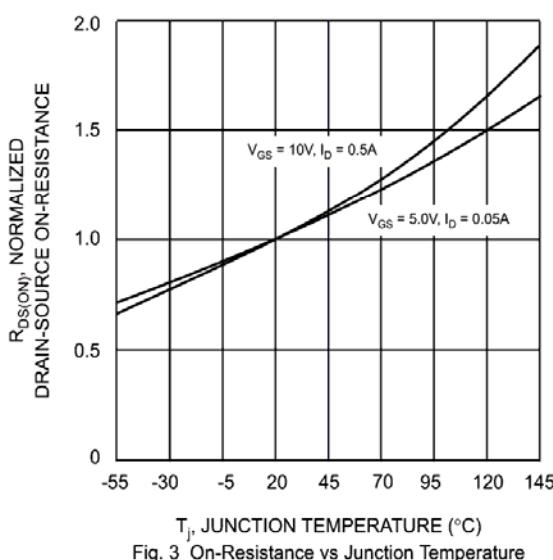
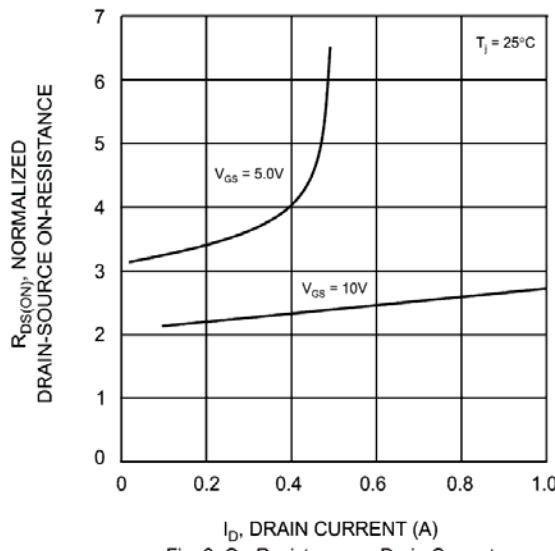
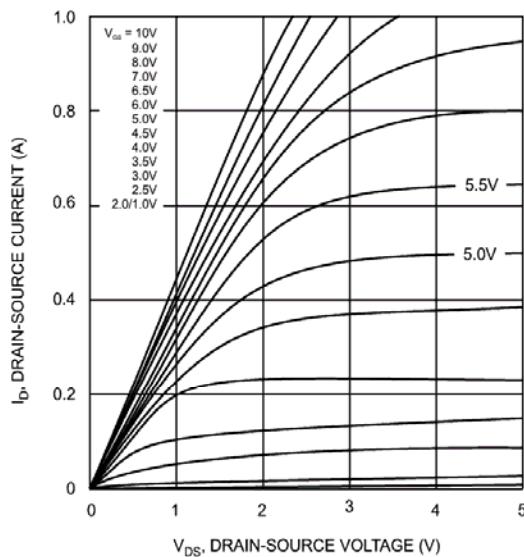
**ELECTRICAL CHARACTERISTICS** (T<sub>amb</sub>=25 °C unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
<b>Drain-Source Breakdown Voltage</b>	V <sub>(BR)DSS</sub>	V <sub>GS</sub> =0 V, I <sub>D</sub> =10 μA	60			V
<b>Gate-Threshold Voltage</b>	V <sub>th(GS)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	1		2.5	
<b>Gate-body Leakage</b>	I <sub>GSS</sub>	V <sub>DS</sub> =0 V, V <sub>GS</sub> =±25 V			±80	nA
<b>Zero Gate Voltage Drain Current</b>	I <sub>DSS</sub>	V <sub>DS</sub> =60 V, V <sub>GS</sub> =0 V			80	nA
<b>On-state Drain Current</b>	I <sub>D(ON)</sub>	V <sub>GS</sub> =10 V, V <sub>DS</sub> =7 V	500			mA
<b>Drain-Source On-Resistance</b>	r <sub>DS(0n)</sub>	V <sub>GS</sub> =10 V, I <sub>D</sub> =500mA	1		7.5	Ω
		V <sub>GS</sub> =5 V, I <sub>D</sub> =50mA	1		7.5	
<b>Forward Trans conductance</b>	g <sub>fs</sub>	V <sub>DS</sub> =10 V, I <sub>D</sub> =200mA	80		500	ms
<b>Drain-source on-voltage</b>	V <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =500mA	0.5		3.75	V
		V <sub>GS</sub> =5V, I <sub>D</sub> =50mA	0.05		0.375	V
<b>Diode Forward Voltage</b>	V <sub>SD</sub>	I <sub>s</sub> =115mA, V <sub>GS</sub> =0 V	0.55		1.2	V
<b>Input Capacitance</b>	C <sub>iss</sub>	V <sub>DS</sub> =25V, V <sub>GS</sub> =0V, f=1MHz			50	pF
<b>Output Capacitance</b>	C <sub>oss</sub>				25	
<b>Reverse Transfer Capacitance</b>	C <sub>rss</sub>				5	

**SWITCHING TIME**

<b>Turn-on Time</b>	t <sub>d(on)</sub>	V <sub>DD</sub> =25 V, R <sub>L</sub> =50Ω I <sub>D</sub> =500mA, V <sub>GEN</sub> =10 V R <sub>G</sub> =25 Ω			20	ns
<b>Turn-off Time</b>	t <sub>d(off)</sub>				40	

## TYPICAL CHARACTERISTICS



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