

Plastic-Encapsulate MOSFETS

60V MOSFET(N-Channel)

MAIN CHARACTERISTICS

I_D	115mA
V_{DS}	60V
$R_{DS(on)-MAX}(@V_{GS}=10V)$	$<5\Omega$
$R_{DS(on)-MAX}(@V_{GS}=5V)$	$<7\Omega$

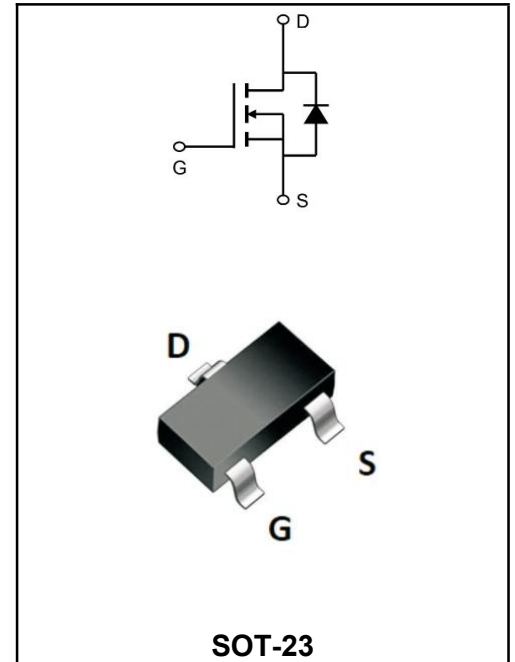
Features

- ◆High dense cell design for extremely low RDS(on).
- ◆Voltage controlled small signal switch.
- ◆Rugged and reliable.
- ◆High saturation current capability.
- ◆Load Switch for Portable Devices.
- ◆DC/DC Converter.

Mechanical Data

- ◆Case: SOT-23
- ◆Epoxy UL: 94V-0
- ◆Mounting Position: Any

Marking Code	
2N7002	7002



Maximum Ratings & Thermal Characteristics(Ratings at 25°C ambient temperature unless otherwise specified.)

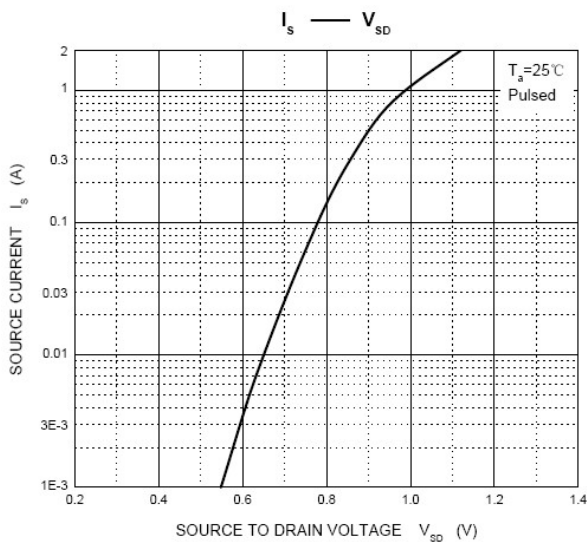
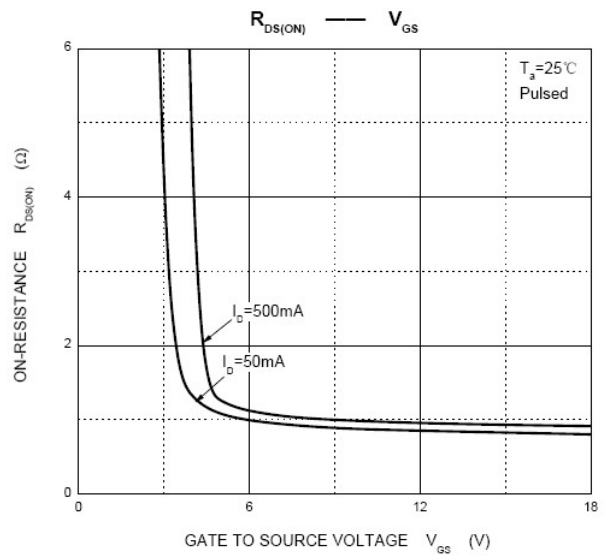
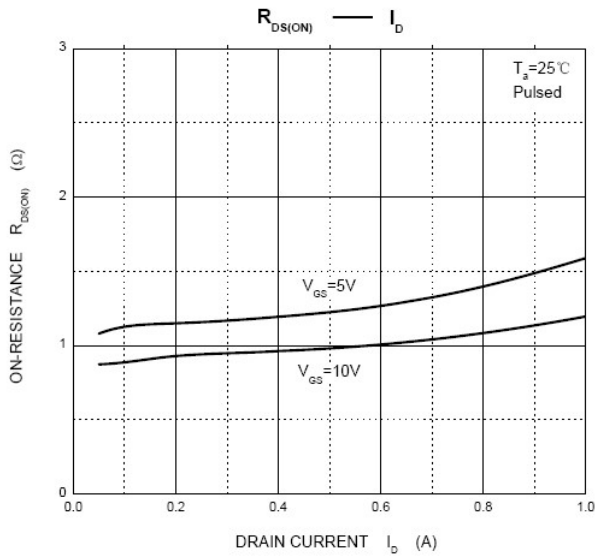
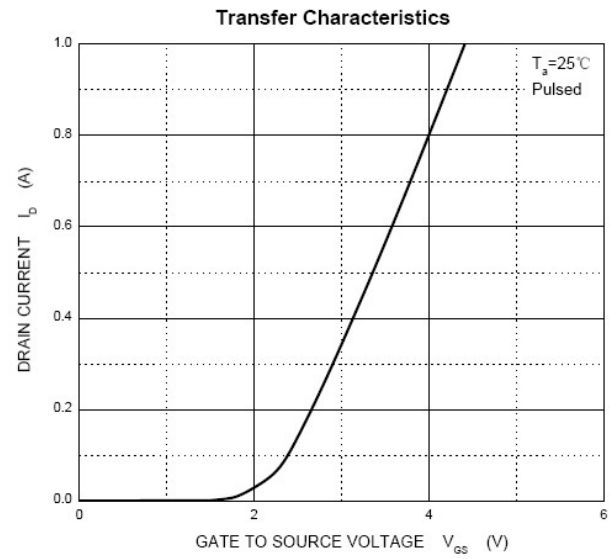
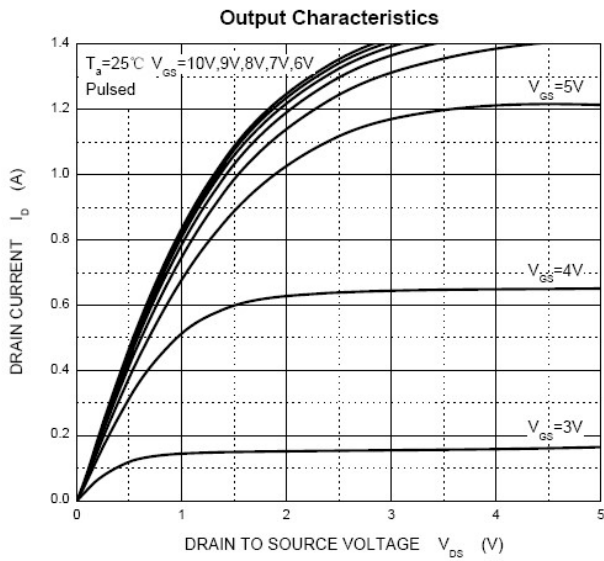
Characteristics	Symbols	Value	Units
Drain-Source Voltage	V_{DS}	60	V
Gate - Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	115	mA
Power Dissipation	P_D	225	mW
Junction Temperature	T_J	150	°C
Storage Temperature	T_{STG}	-50 to +150	°C
Thermal Resistance From Junction to Ambient	$R_{\theta JA}$	556	°C/W

Electrical Characteristics (Ratings at 25°C ambient temperature unless otherwise specified).

Characteristics	Test Condition	Symbols	Min	Typ	Max	Units
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	V(BR)DSS	60	-	-	V
Gate-Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	V_{th(GS)}	1	-	2.5	V
Gate to Body Leakage Current	$V_{GS}=\pm 20V, V_{DS}=0V$	I_{GSS}	-	-	± 10	nA
Zero Gate Voltage Drain Current	$V_{DS}=30V, V_{GS}=0V$	I_{DSS}	-	-	80	nA
On-state Drain current	$V_{GS}=10V, V_{DS}=7V$	ID(ON)	500	-	-	mA
Static Drain-Source on-Resistance	$V_{GS}=10V, I_D=500mA$	R_{DS(ON)}	-	-	5	Ω
	$V_{GS}=5V, I_D=50mA$		-	-	7	
Forward trans conductance	$V_{DS}=10V, I_D=200mA$	g_{fs}	80	-	-	ms
Drain-source on-voltage	$V_{GS}=10V, I_D=500mA$	V_{DS(ON)}	-	-	3.75	V
	$V_{GS}=5V, I_D=50mA$		-	-	0.375	V
Diode Forward voltage	$I_S=115mA, V_{GS}=0V$	VSD	0.55		1.20	V
Input Capacitance*	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	C_{iss}	-	-	50	pF
Output Capacitance*		C_{oss}	-	-	25	
Reverse Transfer Capacitance*		C_{rss}	-	-	5	
Turn-on Time*	$V_{DD}=25V,$ $R_L=50\Omega, I_D=500mA,$ $V_{GEN}=10V, R_G=25\Omega$	td(on)	-	-	20	ns
Turn-off Time*		td(off)	-	-	40	nS

* These parameters have on way to verify

Typical characteristics



Ordering information

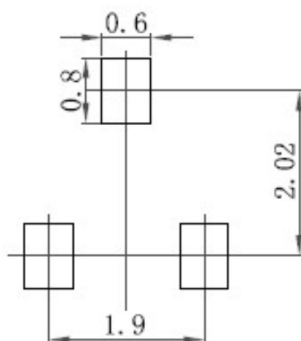
Package	Packing Description	Base Quantity	Packing Quantity
SOT-23	Tape/Reel, 7" reel	3000pcs/Reel	24000PCS/Box 120000PCS/Carton

Package Dimensions

SOT-23

Dim.	Millimeter (mm)		mil	
	Min.	Max.	Min.	Max.
A	0.9	1.15	35	45
A1	0.1		3.9	
bp	0.38	0.48	15	19
C	0.09	0.15	3.54	5.9
D	2.8	3.0	110	118
E	1.2	1.4	47	55
E	1.9		75	
E1	0.95		37	
HE	2.1	2.55	83	100
Lp	0.15	0.45	5.9	18
Q	0.45	0.55	18	22
v	0.2		7.9	
W	0.1		4	

The recommended mounting pad size



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