

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=60V$
- $I_D=115mA$
- $R_{DS(on)}@V_{GS}=10V < 5.0\Omega$
- $R_{DS(on)}@V_{GS}=5.0V < 7.0\Omega$
- Trench Power MV MOSFET technology
- Voltage controlled small signal switch
- Fast Switching Speed

Drain-source Voltage

60 V

Drain Current

0.115 Ampere

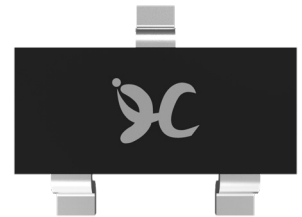
Applications

- Battery operated systems
- Solid-state relays
- Direct logic-level interface: TTL/CMOS

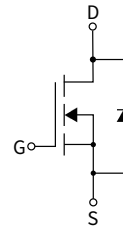
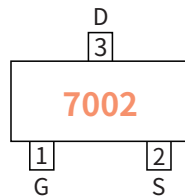
Mechanical Data

- Case: SOT-23
- Molding compound meets UL 94V-0 flammability rating, RoHS-compliant, halogen-free
- Terminals: Solder plated, solderable per MIL-STD-750, Method 2026

SOT-23



Reference News



Maximum Ratings (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	60
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	mA	115
Pulsed Drain Current ⁽¹⁾	I_{DM}	mA	800
Total Power Dissipation @ $T_A=25^\circ C$	P_D	mW	225
Thermal Resistance Junction-to-Ambient @ Steady State ⁽²⁾	$R_{\theta JA}$	$^\circ C / W$	357
Junction and Storage Temperature Range	T_J, T_{STG}	$^\circ C$	-55 ~ +150

Note :

(1) Pulse test ; Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$

(2) Device mounted on FR-4 PCB, 1 inch x 0.85 inch x 0.062 inch.

Ordering Information

PACKAGE	PACKAGE CODE	UNIT WEIGHT(g)	REEL(pcs)	BOX(pcs)	CARTON(pcs)	DELIVERY MODE
SOT-23	R1	0.008	3000	45000	180000	7"

● Static Parameter Characteristics (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Drain-Source Breakdown Voltage	BV_{DSS}	$V_{GS}=0V, I_D=250\mu A$	V	60	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=60V, V_{GS}=0V$	nA	—	—	80
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=250\mu A$	V	1.0	1.6	2.5
On-state Drain Current	$I_{D(ON)}$	$V_{GS}=10V, V_{DS}=7V$	mA	—	—	500
Static Drain-Source On-Resistance	$R_{DS(ON)}$	$V_{GS}=10V, I_D=500mA$	Ω	—	0.9	5.0
		$V_{GS}=5V, I_D=50mA$		—	1.1	7.0
Drain-source On-voltage	$V_{DS(ON)}$	$V_{GS}=10V, I_D=500mA$	V	—	—	3.75
		$V_{GS}=5V, I_D=50mA$		—	—	0.375
Diode Forward Voltage	V_{SD}	$I_S=115mA, V_{GS}=0V$	V	0.55	—	1.2
Forward Transconductance	g_{fs}	$V_{DS}=10V, I_D=200mA$	ms	80	—	—

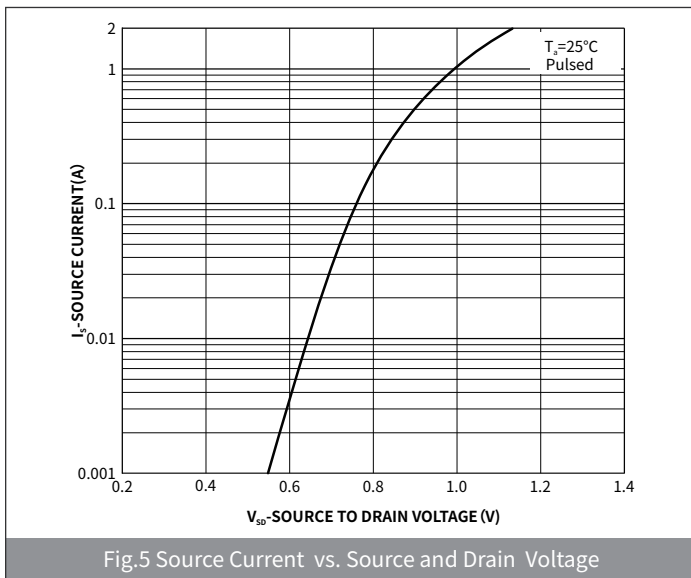
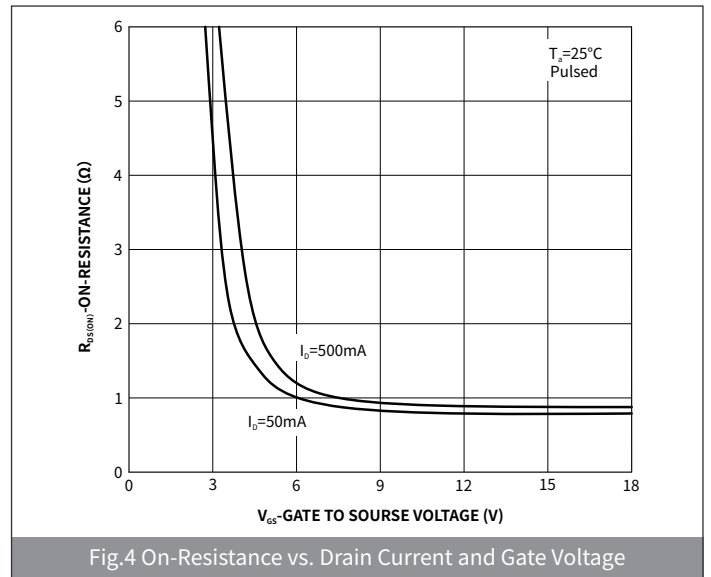
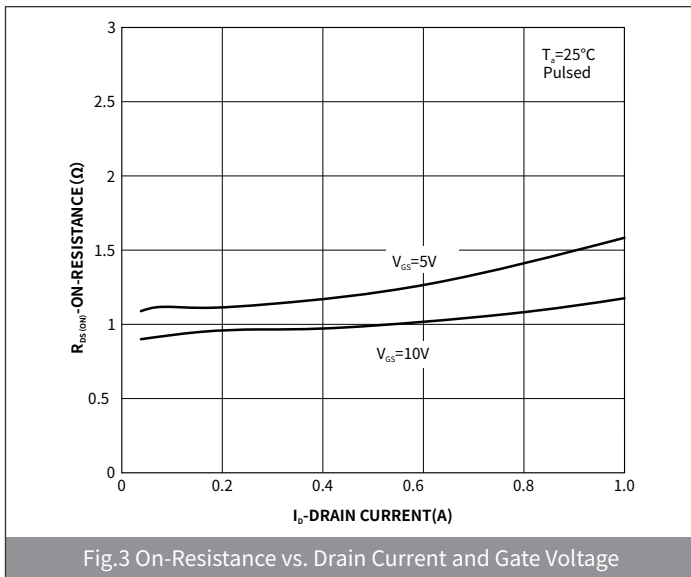
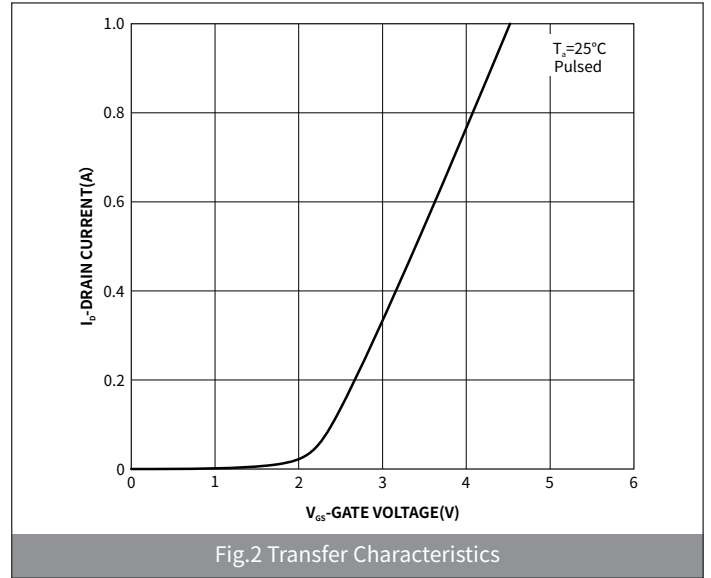
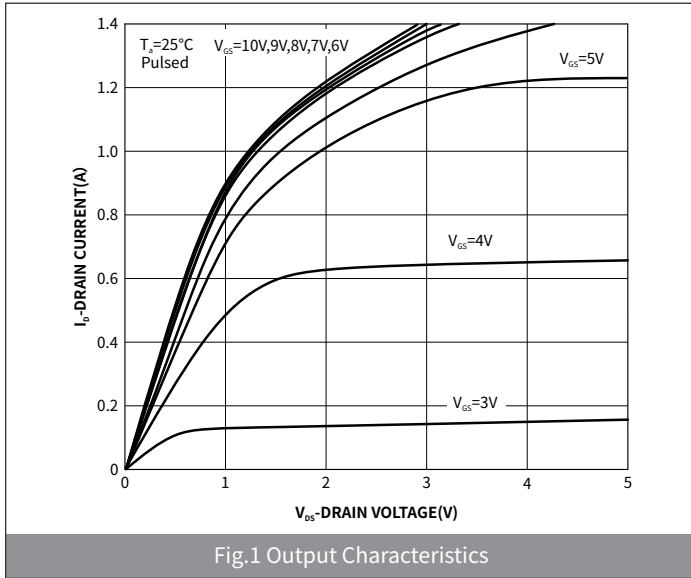
● Dynamic Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=25V$ $V_{GS}=0V$ $f=1MHz$	pF	—	—	50
Output Capacitance	C_{oss}			—	—	25
Reverse Transfer Capacitance	C_{rss}			—	—	5.0

● Switching Parameters (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Turn-on Delay Time	$t_{D(on)}$	$V_{DD}=30V, R_L=50\Omega,$ $V_{GEN}=10V, I_D=500mA$ $R_{GEN}=25\Omega,$	ns	—	—	20
Turn-off Delay Time	$t_{D(off)}$			—	—	40

● Ratings And Characteristics Curves ($T_a=25^\circ\text{C}$ Unless otherwise specified)



● Package Outline Dimensions (SOT-23)

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
A	0.90	1.15	0.035	0.045
A1	-	0.10	-	0.004
A2	0.90	1.05	0.035	0.041
b	0.30	0.50	0.012	0.020
c	0.10	0.20	0.004	0.008
D	2.80	3.00	0.110	0.118
E	1.20	1.40	0.047	0.055
E1	2.25	2.55	0.089	0.100
e	0.950TYP		0.037TYP	
e1	1.80	2.00	0.071	0.079
L	0.550REF		0.022REF	
L1	0.30	0.50	0.012	0.020
θ	-	8°	-	8°

● Suggested Pad Layout

Symbol	Dimensions			
	Millimeters		Inches	
	Min.	Max.	Min.	Max.
J	0.75	0.85	0.030	0.033
K	0.85	0.95	0.033	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077

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