SOT-23 Plastic-Encapsulate MOSFETS

Features

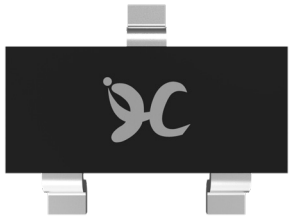
- V_{DS}=60V
- I_D=340mA
- $R_{DS(on)}$@VGS=10V ＜ 5Ω
- $R_{DS(on)}$@VGS=4.5V ＜ 5.3Ω
- ESD protected
- Rugged and reliable
- High density cell design for low $R_{DS(ON}$

Drain-source Voltage
60 V
Drain Current
0.34 Ampere

Applications

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

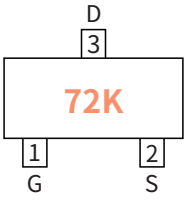
SOT-23

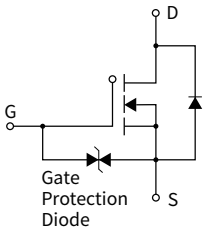


Mechanical Data

- 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

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	340
Pulsed Drain Current [1]	I_{DM}	A	0.8
Total Power Dissipation @ T_A=25°C	P_D	mW	350
Thermal Resistance Junction-to-Ambient @ Steady State [2]	$R_{\theta JA}$	°C / W	357
Junction and Storage Temperature Range	T_J,T_{STG}	°C	-55 ~+150

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=250μA	V	60	—	—
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V,V_{GS}=0V	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	V_{GS}= ±20V, V_{DS}=0V	μA	—	—	±10
Gate Threshold Voltage (1)	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=1.0mA	V	1.0	1.3	2.5
Static Drain-Source On-Resistance (1)	$R_{DS(ON)}$	V_{GS}= 10V, I_D=500mA	Ω	—	0.9	5.0
		V_{GS}= 4.5V, I_D=200mA		—	1.1	5.3
Diode Forward voltage	V_{SD}	V_{GS}=0 V, I_S=300mA	V	—	—	1.5

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance (2)	C_{iss}	V_{DS}=10V V_{GS}=0V f=1MHZ	pF	—	—	40
Output Capacitance (2)	C_{oss}			—	—	30
Reverse Transfer Capacitance (2)	C_{rss}			—	—	10

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Reverse recovery Time	T_{rr}	V_{GS}=0V，I_S=300mA， V_R=25V,Dis/dt=100a/μS	ns	—	30	—
Turn-on Delay Time (2)	$t_{D(on)}$	V_{DD}=0V，V_{GS}=10V R_L=250Ω R_{GEN}=50Ω，R_{GS}=50Ω		—	—	10
Turn-off Delay Time(2)	$t_{D(off)}$			—	—	15
Gate-Source Breakdown Voltage	BV_{GSO}	Igs=±1mA(Open Drain)	V	±21.5	—	±30

Note :

(1)Pulse test ; Pulse width ⩽ 300us, duty cycle ⩽ 2%

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

Ratings And Characteristics Curves (Ta=25°C Unless otherwise specified)

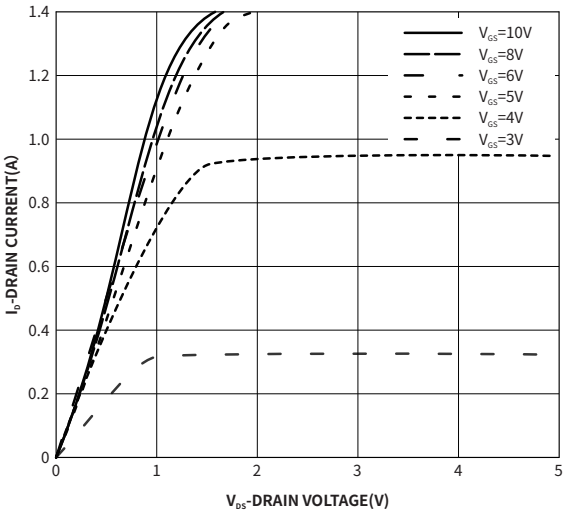


Fig.1 Output Characteristics

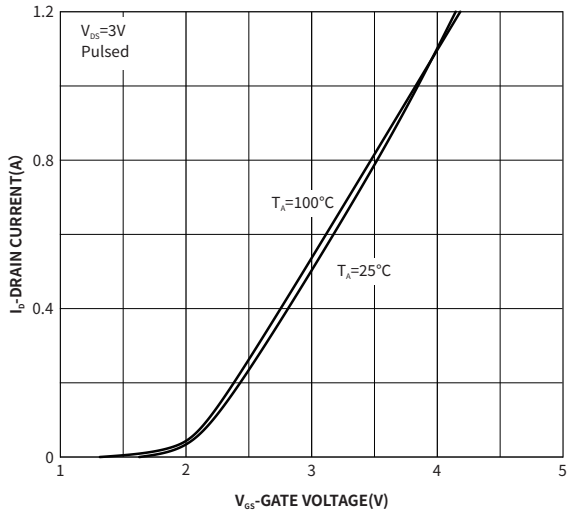


Fig.2 Transfer Characteristics

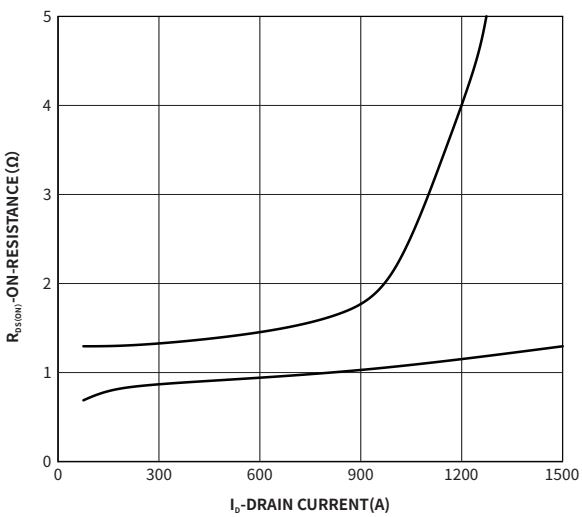


Fig.3 On-Resistance vs. Drain Current and Gate Voltage

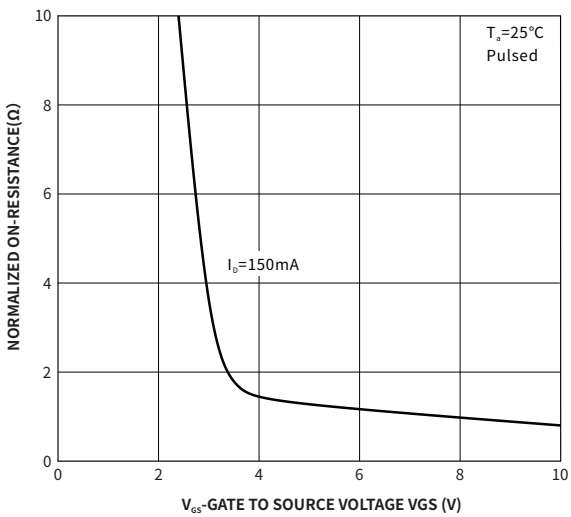
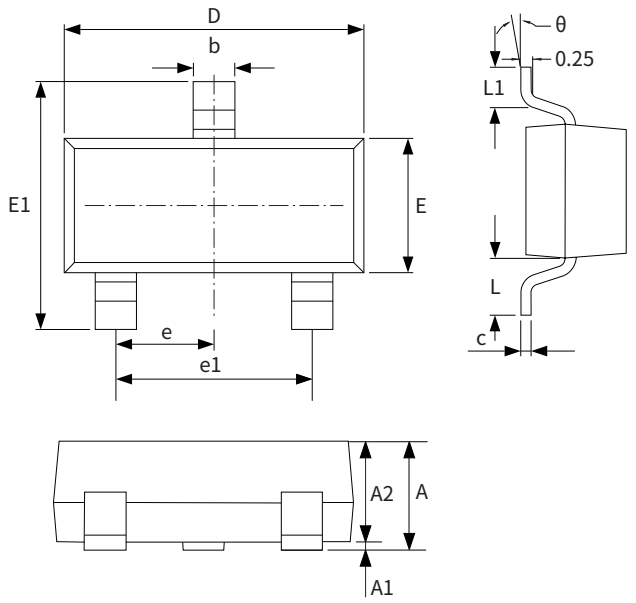


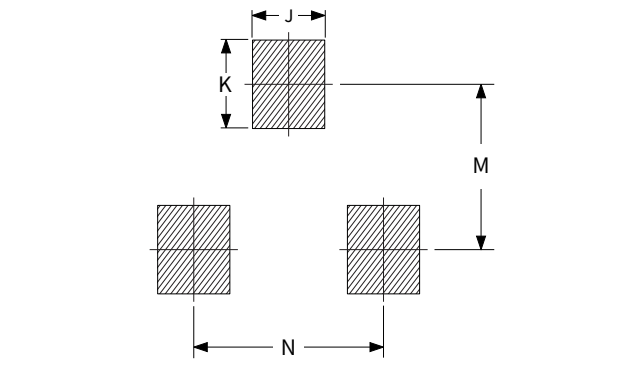
Fig.4 On-Resistance vs. Drain Current and Gate Voltage

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