

SOT-23 Plastic-Encapsulate MOSFETS

Features

- $V_{DS}=30V$
- $I_D=0.1A$
- $R_{DS(on)}@V_{GS}=4V < 8\Omega$
- $R_{DS(on)}@V_{GS}=2.5V < 13\Omega$
- Trench Power LV MOSFET technology
- High density cell design for low $R_{DS(ON)}$
- High Speed switching

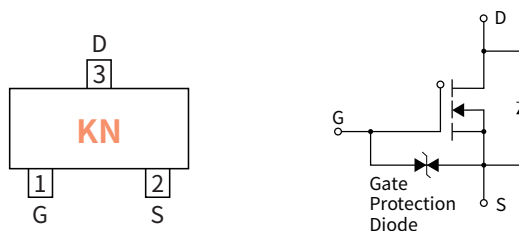
Applications

- Interfacing
- Load switch

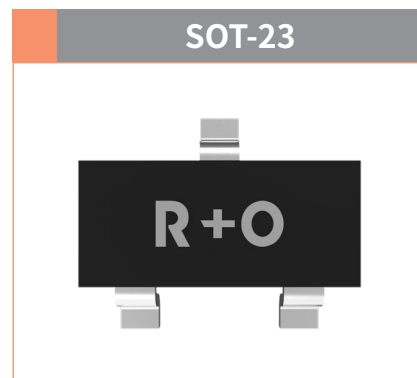
Mechanical Data

- 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

Function Diagram



Drain-source Voltage
30 V
Drain Current
0.1 Ampere



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

PARAMETER	SYMBOL	UNIT	VALUE
Drain-source Voltage	V_{DS}	V	30
Gate-source Voltage	V_{GS}	V	± 20
Drain Current	I_D	A	0.1
Pulsed Drain Current	I_{DM}	A	0.4
Total Power Dissipation	P_d	mW	200
Storage temperature	T_{stg}	°C	-55 ~+150
Junction temperature	T_j	°C	-55 ~+150
Typical Thermal Resistance	$R_{\theta J-A}$	°C /W	357

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	30	—	—
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=30V, V_{GS}=0V$	μA	—	—	1.0
Gate-Body Leakage Current	I_{GSS}	$V_{GS}=\pm 20V, V_{DS}=0V$	μA	—	—	± 10
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=3.0V, I_D=0.1mA$	V	0.8	—	1.5
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=4.0V, I_D=10mA$	Ω	—	—	8.0
		$V_{GS}=2.5V, I_D=1.0mA$		—	—	13
Forward Transconductance	g_{FS}	$V_{DS}=3.0V, I_D=10mA$	mS	20	—	—

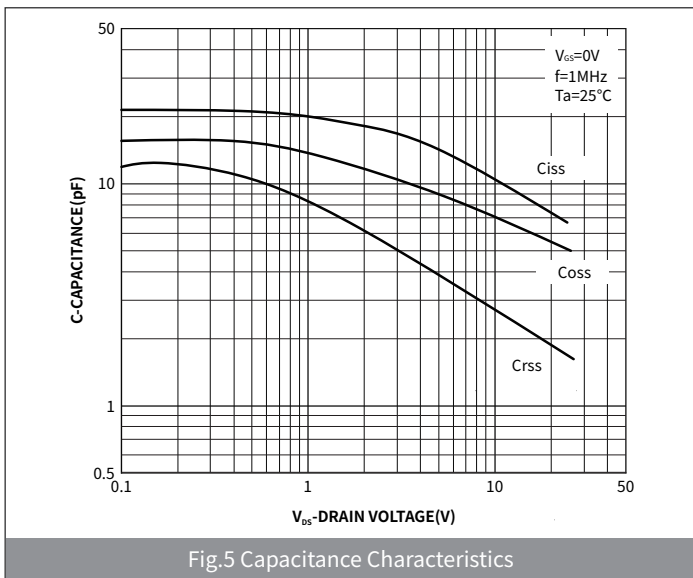
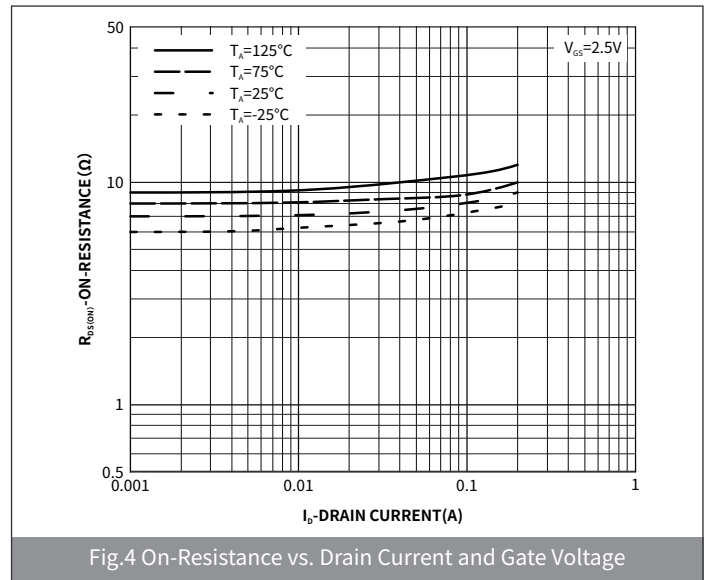
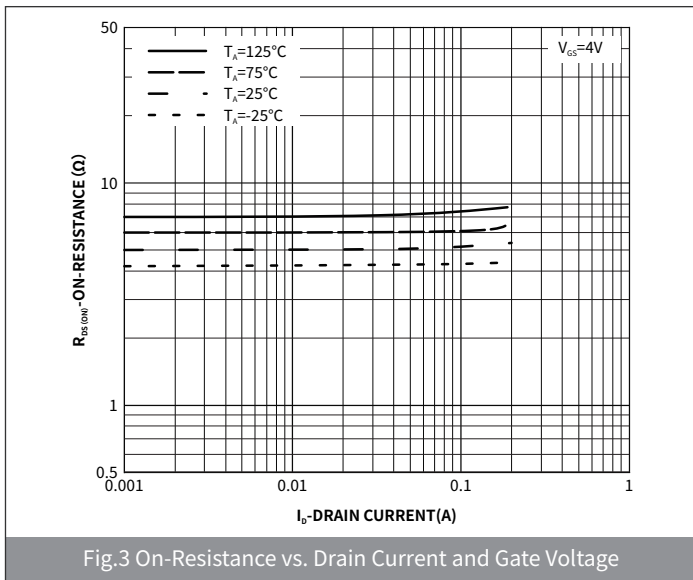
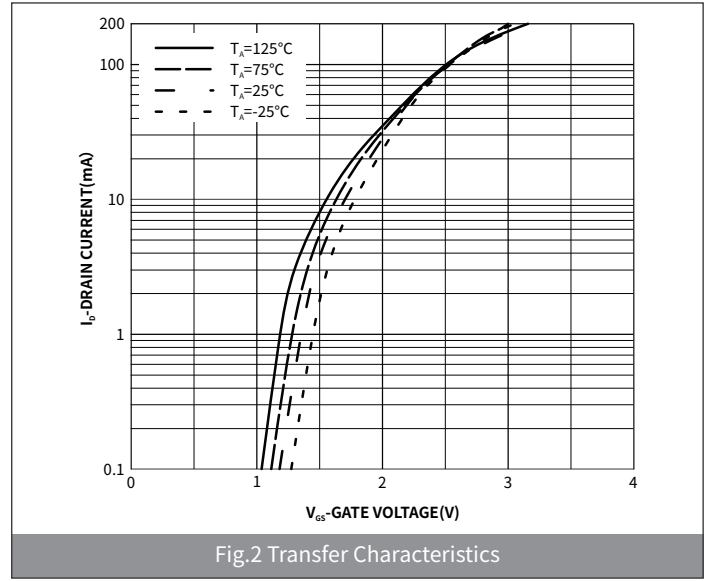
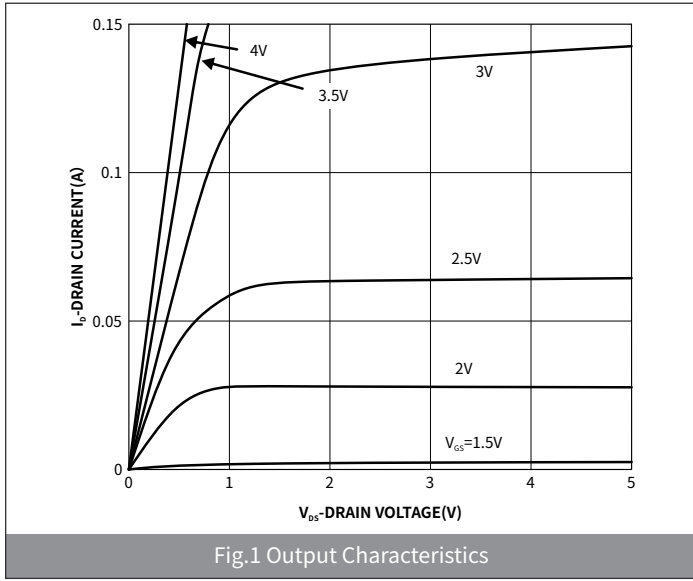
● **Dynamic Parameters** (Ta=25°C Unless otherwise specified)

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=5.0V, V_{GS}=0V, f=1MHz$	pF	—	13	—
Output Capacitance	C_{oss}			—	9.0	—
Reverse Transfer Capacitance	C_{rss}			—	4.0	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Turn-on Delay Time	$t_{D(on)}$	$V_{GS}=5.0V, V_{DS}=5.0V, I_D=10mA, R_{GEN}=10\Omega, R_L=500\Omega$	ns	—	15	—
Turn-on Rise Time	t_r			—	35	—
Turn-off Delay Time	$t_{D(off)}$			—	80	—
Turn-off fall Time	t_f			—	80	—

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



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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	0.33	0.037
M	1.95	2.05	0.077	0.081
N	1.85	1.95	0.073	0.077