

Features

- $V_{DS} = -60V$
- $I_D = -0.17A$
- $R_{DS(on)} @ V_{GS} = -10V < 8\Omega$
- $R_{DS(on)} @ V_{GS} = -4.5V < 10\Omega$
- Trench Power LV MOSFET technology
- Low $R_{DS(ON)}$
- Low Gate Charge

Applications

- Video monitor
- Load switch
- Power management

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

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	Ta=25°C	I_D	A	-0.17
	Ta=70°C			-0.14
Pulsed Drain Current ⁽¹⁾		I_{DM}	A	-0.68
Total Power Dissipation	Ta=25°C	P_d	mW	225
Thermal Resistance Junction-to-Ambient ⁽²⁾		$R_{\theta JA}$	°C / W	556
Storage temperature	T_{stg}	°C	—	-55 ~ +150
Junction temperature	T_j	°C	—	-55 ~ +150

Note :

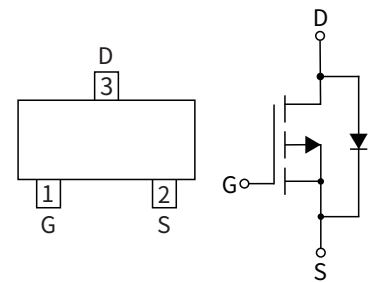
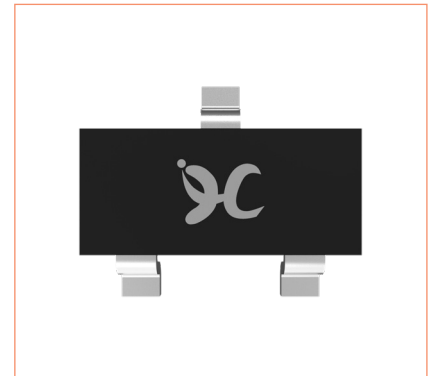
A. Pulse Test: Pulse Width $\leq 300\mu s$, Duty cycle $\leq 2\%$.

B. 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	30000	120000	7"

SOT-23



► 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}	$V_{DS}=-60V, V_{GS}=0V$	μA	—	—	-1
Gate-Body Leakage Current	I_{GSS1}	$V_{GS}=\pm 20V, V_{DS}=0V$	nA	—	—	± 100
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_D=-250\mu A$	V	-0.9	-1.4	-2.0
Static Drain-Source On-Resistance	$R_{DS(on)}$	$V_{GS}=-10V, I_D=-0.15A$	Ω	—	3.3	8
		$V_{GS}=4.5V, I_D=-0.15A$		—	3.5	10
Diode Forward Voltage	V_{SD}	$I_S=-0.17A, V_{GS}=0V$	V	—	—	-1.2
Maximum Body-Diode Continuous Current	I_S	—	A	—	—	-0.17

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Input Capacitance	C_{iss}	$V_{DS}=-30V, V_{GS}=0V, f=1MHz$	pF	—	43	—
Output Capacitance	C_{oss}			—	2.9	—
Reverse Transfer Capacitance	C_{rss}			—	2.8	—

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

PARAMETER	SYMBOL	Condition	UNIT	Min	Typ	Max
Total Gate Charge	Q _g	V _{GS} =-10V,V _{DS} =0V,I _D =-0.15A	nC	—	1.77	—
Gate-Source Charge	Q _{gs}			—	0.57	—
Gate-Drain Charge	Q _{gd}			—	0.18	—
Reverse Recovery Charge	Q _{rr}	I _F =-0.15A, di/dt=-100A/μs		—	13	—
Reverse Recovery Time	t _{rr}		—	23	—	
Turn-on Delay Time	t _{D(on)}	V _{GS} =-4.5V,V _{DD} =-30V, I _D =-0.15A, R _{GEN} =2.5Ω	ns	—	8.6	—
Turn-on Rise Time	t _r			—	20	—
Turn-off Delay Time	t _{D(off)}			—	15	—
Turn-off fall Time	t _f			—	77	—

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

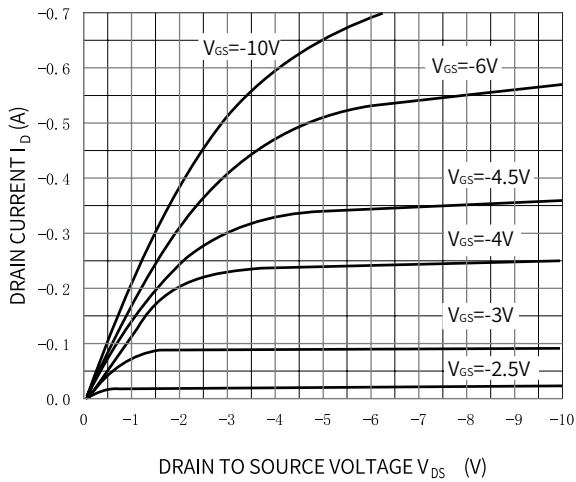


Fig.1 Static Characteristic

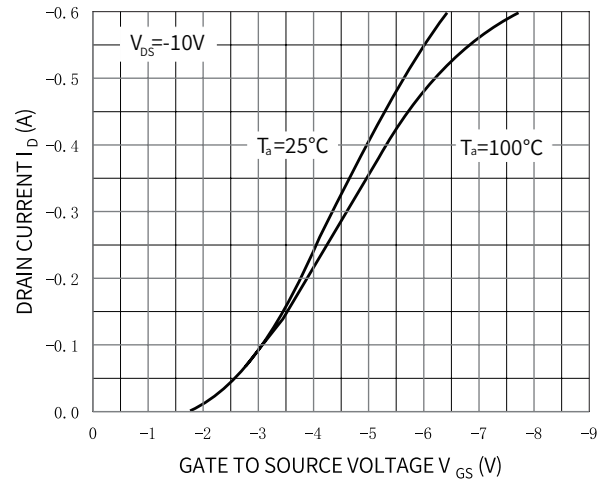


Fig.2 Transfer Characteristics

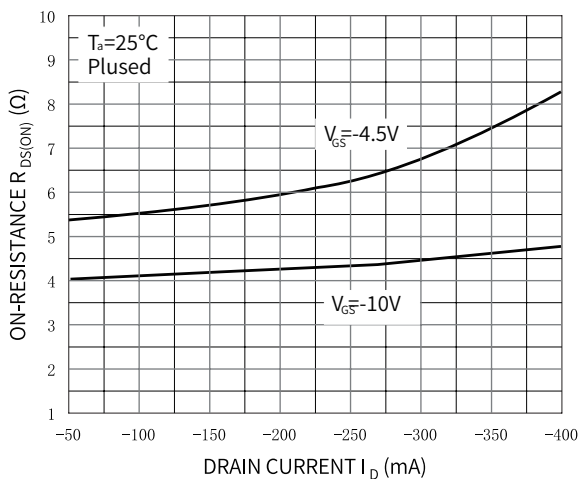


Fig.3 Drain-Source on Resistance

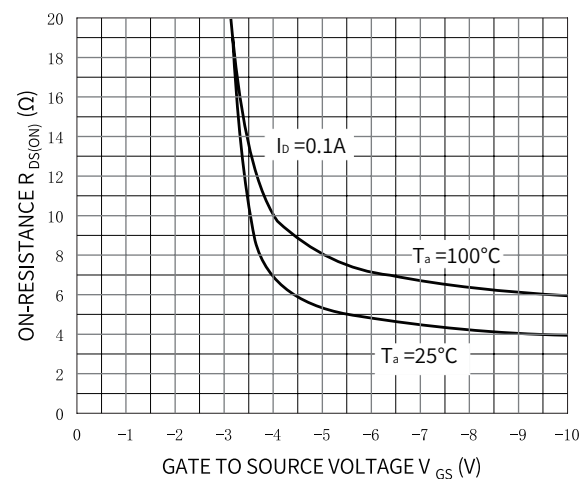


Fig.4 Drain-Source on Resistance

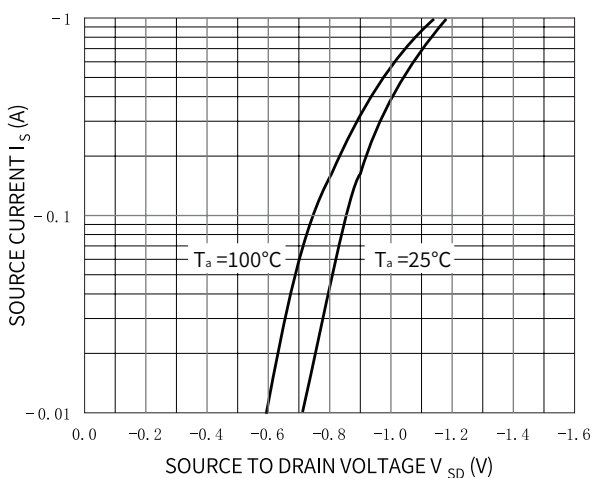


Fig.5 Diode Forward Voltage vs. current

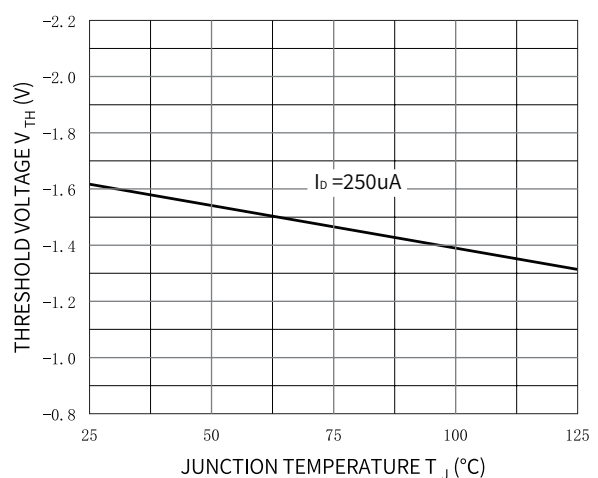


Fig.6 Gate Threshold vs. Junction Temperature

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	0.80	-	0.031	-
K	-	0.90	-	0.035
M	2.00	-	0.078	-
N	-	1.90	-	0.074