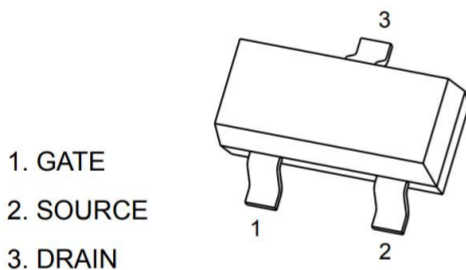


Product Summary

- V_{DS} 100 V
- I_{DS} ($V_{GS}=10V$) 2 A
- $R_{DS(ON)}$ ($V_{GS}=10V$) $\leq 250m\Omega$ (Typ)

Package and Pin Configuration

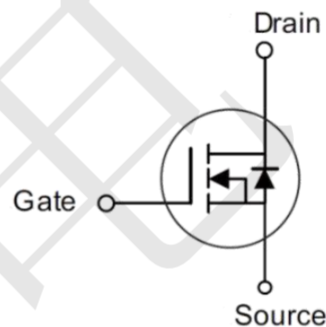


SOT23

Application

- Interfacing Switching
- DC-DC Converters
- Power management functions

Circuit diagram



Absolute Maximum Ratings ($T_A=25^\circ\text{C}$ unless otherwise noted)

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	100	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_A=25^\circ\text{C}$	I_D	2.0	A
Continuous Drain Current $T_A=70^\circ\text{C}$	I_D	1.6	A
Pulsed Drain Current ($t = 100 \mu\text{s}$)	I_{DM}	8.0	A
Maximum Power Dissipation	P_D	$T_A=25^\circ\text{C}$ 1.2	W
		$T_A=70^\circ\text{C}$ 0.8	W
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$

Thermal Characteristic

PARAMETER	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10\text{s}$)	$R_{\theta JA}$	105	$^\circ\text{C/W}$

Note : When mounted on 1" square PCB (FR4 material).

Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	BV_{DSS}	100	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.1	2.0	3.0	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=100V, V_{GS}=0V$	I_{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}=10V, I_D=2.0A$	$R_{DS(on)}$	--	250	280	m Ω
	$V_{GS}=4.5V, I_D=2.0A$		--	260	310	
Forward Transconductance (Note 2)	$V_{DS}=5V, I_D=1.0A$	g_{fs}	--	36	--	S
Dynamic (Note 2)						
Input Capacitance	$V_{DS}=50V, V_{GS}=0V,$ $F=1.0MHz$	C_{iss}	--	330	--	pF
Output Capacitance		C_{oss}	--	88	--	
Reverse Transfer Capacitance		C_{rss}	--	17	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DS}=50V,$ $V_{GS}=10V,$ $I_D=1.3A,$ $R_G=1\Omega.$	$t_{d(on)}$	--	14	--	nS
Rise Time (Note 3)		t_r	--	54	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	18	--	
Fall Time (Note 3)		t_f	--	11	--	
Total Gate Charge	$V_{DS}=50V,$ $I_D=2A,$ $V_{GS}=10V$	Q_g	--	5.3	--	nC
Gate Source Charge		Q_{gs}	--	1.4	--	
Gate Drain Charge		Q_{gd}	--	1.8	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}=0V, I_F=1A$	V_{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	2.0	A
Pulsed Current (Note 1)		I_{SM}	--	--	8.0	A

Notes:

1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)

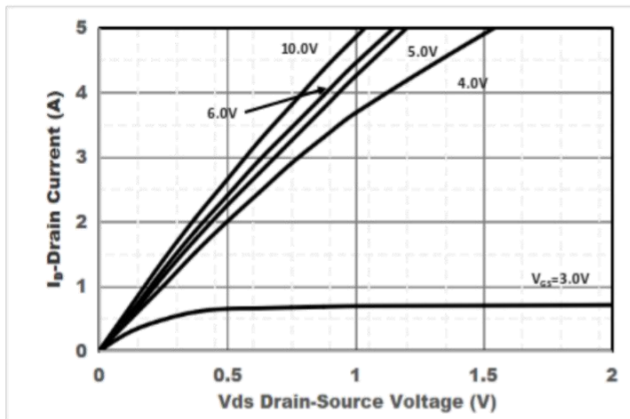


Figure1. Output Characteristics

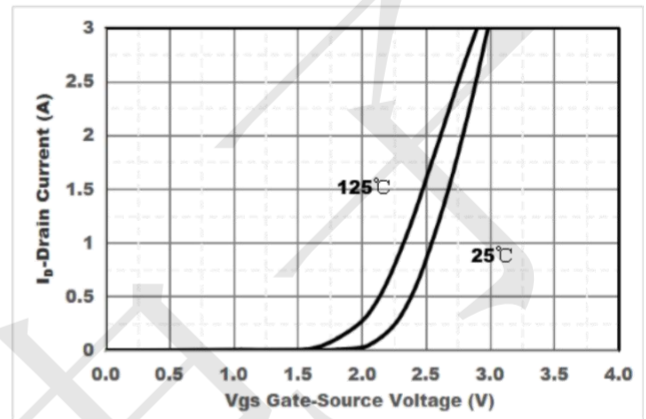


Figure2. Transfer Characteristics

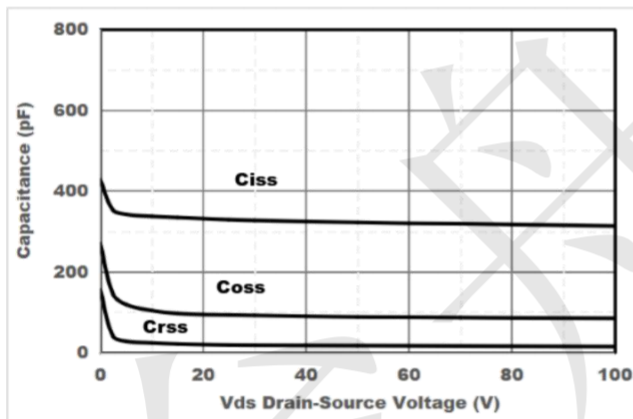


Figure3. Capacitance Characteristics

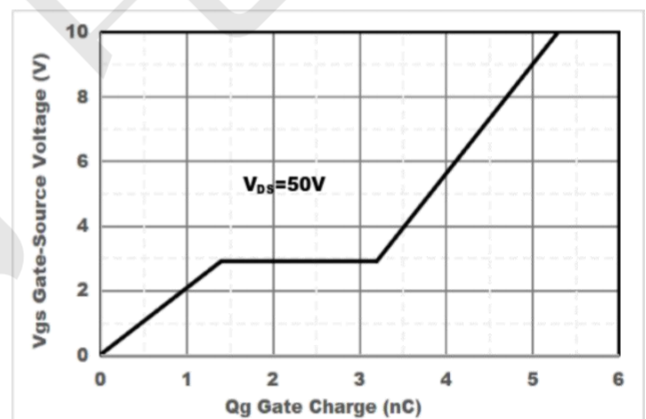


Figure4. Gate Charge

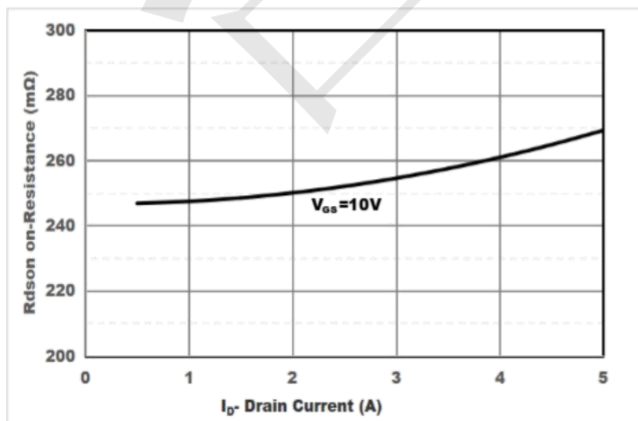


Figure5. Drain-Source on Resistance

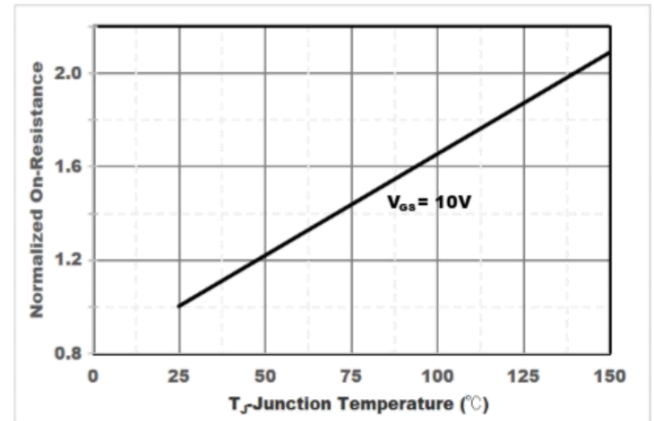
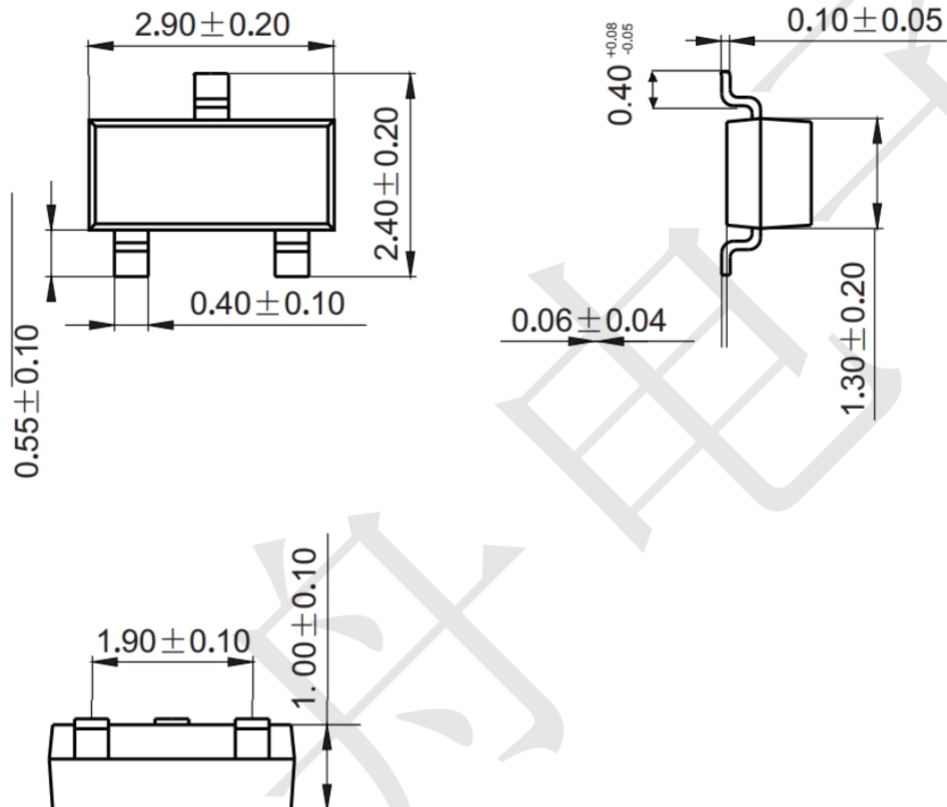


Figure6. Drain-Source on Resistance

Package Outline Dimensions (unit: mm)

SOT23



Mounting Pad Layout (unit: mm)

