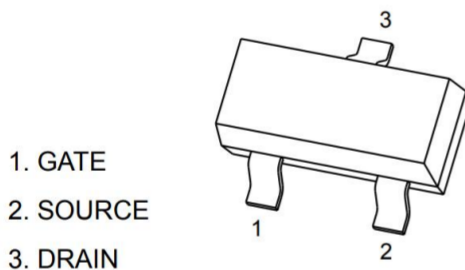


Product Summary

- V_{DS} 250 V
- I_{DS} ($V_{GS}=10V$) 0.21 A
- $R_{DS(ON)}$ ($V_{GS}=10V$) 8Ω (Max)

Package and Pin Configuration



SOT23

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

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V_{DS}	250	V
Gate-Source Voltage		V_{GS}	±20	V
Continuous Drain Current $T_A=25^{\circ}\text{C}$		I_D	0.21	A
Continuous Drain Current $T_A=70^{\circ}\text{C}$		I_D	0.13	A
Pulsed Drain Current (t = 100 μs)		I_{DM}	0.8	A
Maximum Power Dissipation	$T_A=25^{\circ}\text{C}$	P_D	1.2	W
	$T_A=70^{\circ}\text{C}$		0.35	W
Operating Junction Temperature Range		T_J	-55 to +150	°C
Storage Temperature Range		T_{stg}	-55 to +150	°C

Thermal Characteristic

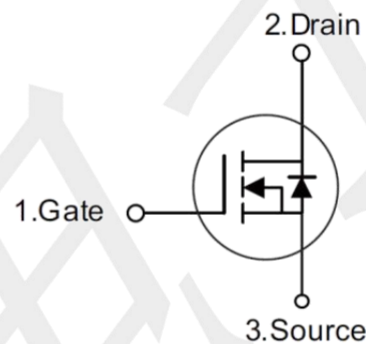
PARAMETER	Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10\text{s}$)	$R_{\theta JA}$	310	$^\circ\text{C/W}$

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

Application

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

Circuit diagram



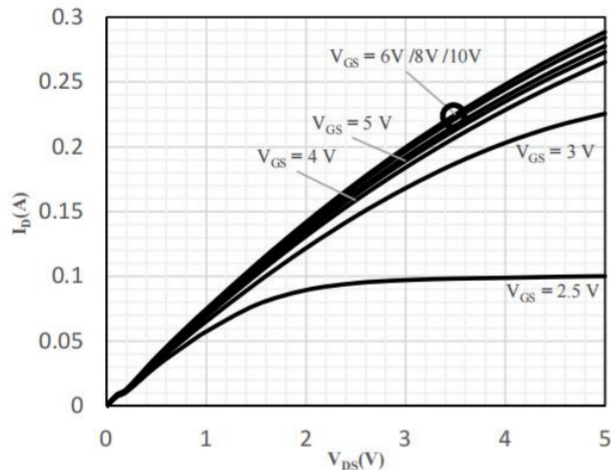
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Characteristics						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 10μA	BV _{DSS}	250	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = 250μA	V _{GS(th)}	1.0	2.0	3.0	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = 240V, V _{GS} =0V	I _{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = 10V, I _D =100mA	R _{DS(on)}	--	--	8	Ω
	V _{GS} = 5V, I _D = 100mA		--	--	10	
Forward Transconductance (Note 2)	V _{DS} = 2V, I _D =0.08A	g _{fs}	--	0.2	--	S
Dynamic (Note 2)						
Input Capacitance	V _{DS} = 50V, V _{GS} = 0V, F= 1.0MHz	C _{iSS}	--	50	--	pF
Output Capacitance		C _{oSS}	--	19	--	
Reverse Transfer Capacitance		C _{rSS}	--	8	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = 50V, V _{GS} = 10V, I _D = 1.3A, R _G = 1Ω.	t _{d(on)}	--	3.3	--	nS
Rise Time (Note 3)		t _r	--	3.1	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	13.7	--	
Fall Time (Note 3)		t _f	--	64.5	--	
Total Gate Charge	V _{DS} = 50V, I _D = 2A, V _{GS} = 10V	Q _g	--	5.6	--	nC
Gate Source Charge		Q _{gs}	--	0.8	--	
Gate Drain Charge		Q _{gd}	--	1.9	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = 0.1A	V _{SD}	--	0.8	1.5	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	0.2	A
Pulsed Current (Note 1)		I _{SM}	--	--	0.8	A

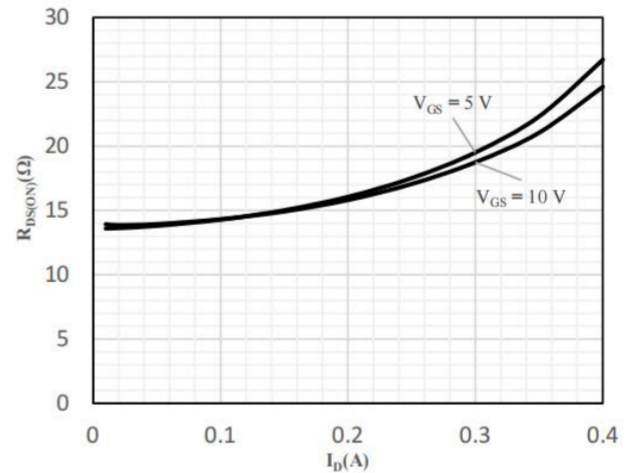
Notes:

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

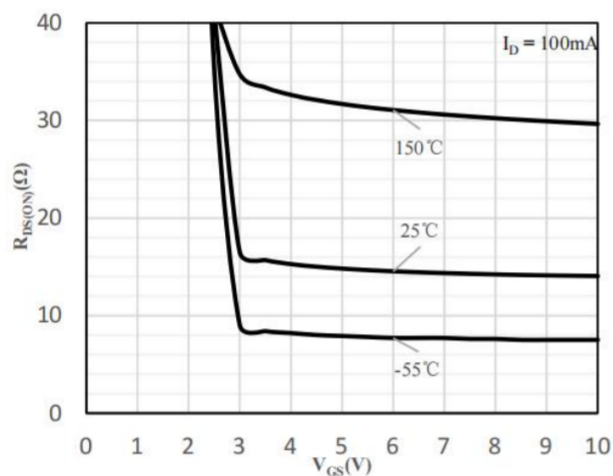
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



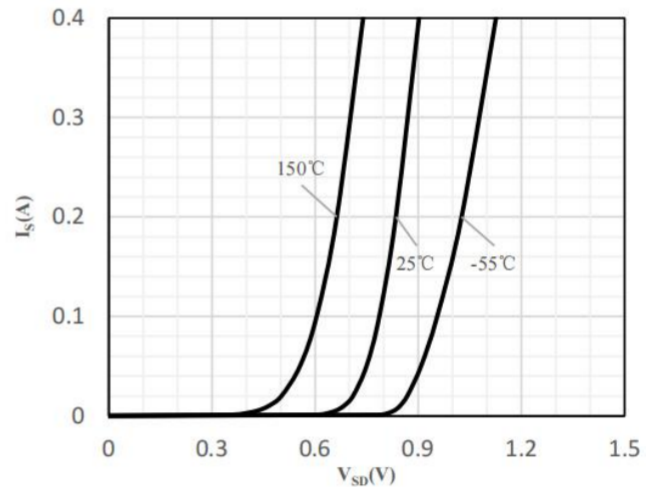
Typical Output Characteristics



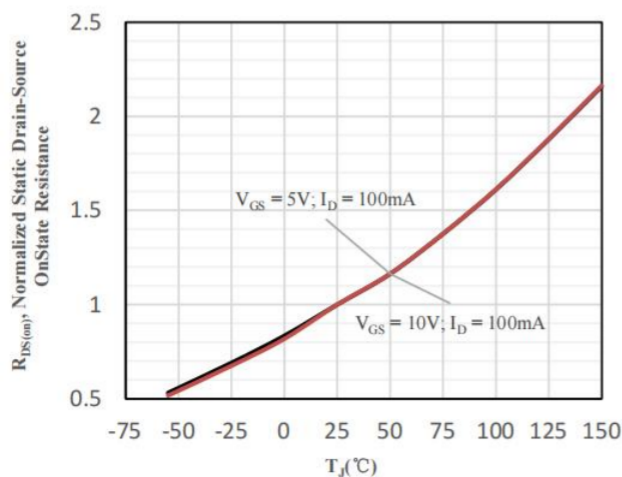
On-Resistance vs. Drain Current and Gate Voltage



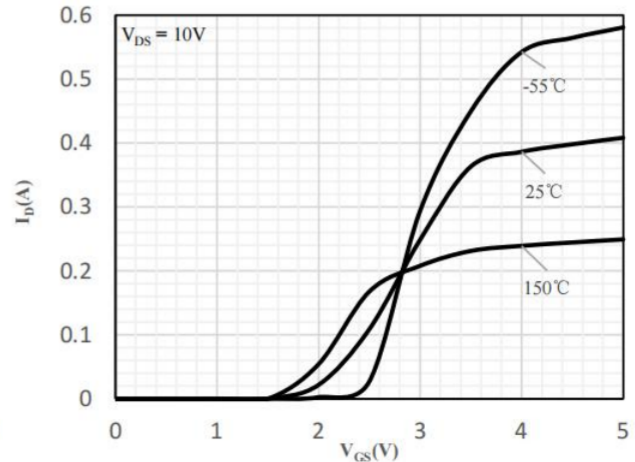
On-Resistance vs. Gate-Source Voltage



Body-Diode Characteristics



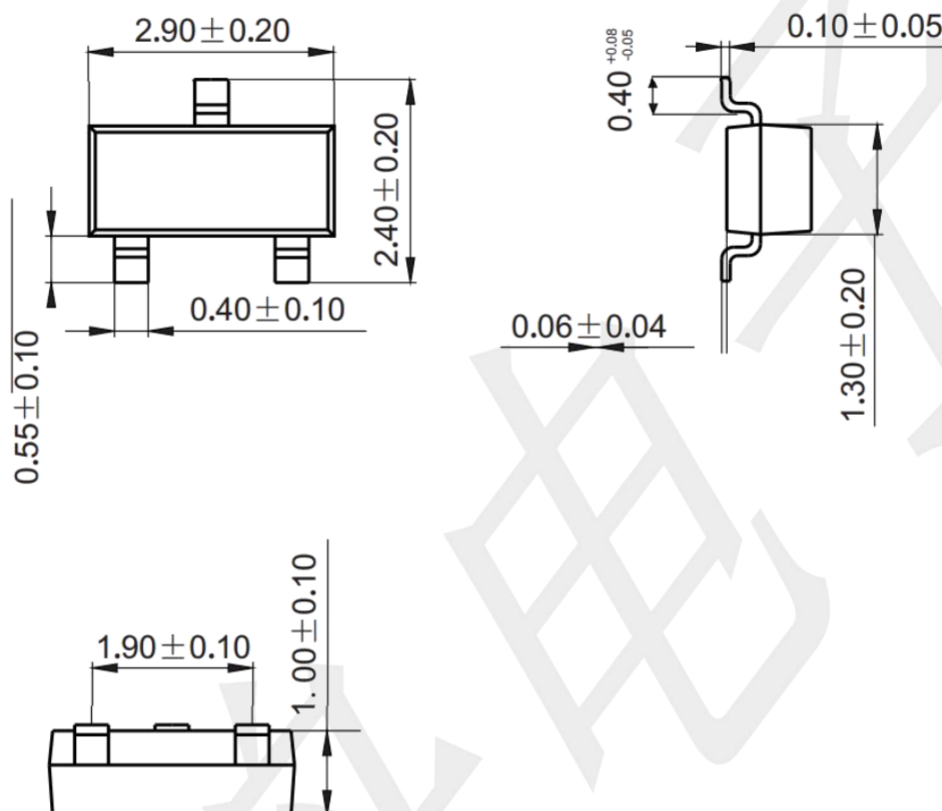
Normalized On-Resistance vs. Junction Temperature



Transfer Characteristics

Package Outline Dimensions (unit: mm)

SOT23



Mounting Pad Layout (unit: mm)

