

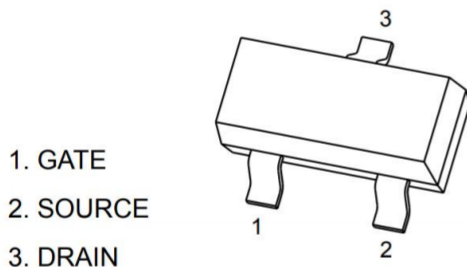
Product Summary

- V_{DS} 20 V
- $R_{DS(ON)}$ ($V_{GS}=4.5V$) $\leq 250m\Omega$
- $R_{DS(ON)}$ ($V_{GS}=2.5V$) $\leq 300m\Omega$

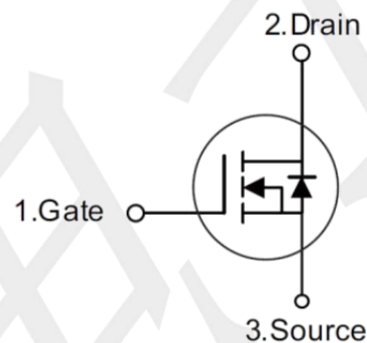
Application

- Interfacing Switching
- Load Switch
- Portable equipment and battery

Package and Pin Configuration



Circuit diagram



SOT-23

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

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current $T_A=25^\circ\text{C}$	I_D	0.8	A
Continuous Drain Current $T_A=70^\circ\text{C}$	I_D	0.7	A
Pulsed Drain Current ($t = 100 \mu\text{s}$)	I_{DM}	1.8	A
Maximum Power Dissipation $T_A=25^\circ\text{C}$	P_D	0.54	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($t \leq 10\text{s}$)	$R_{\theta JA}$	450	$^\circ\text{C/W}$

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

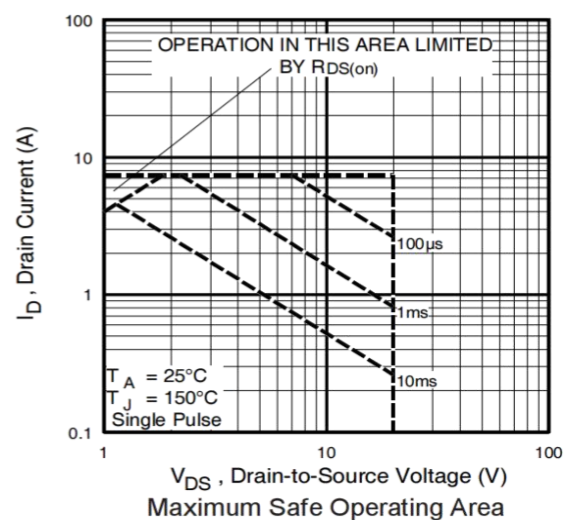
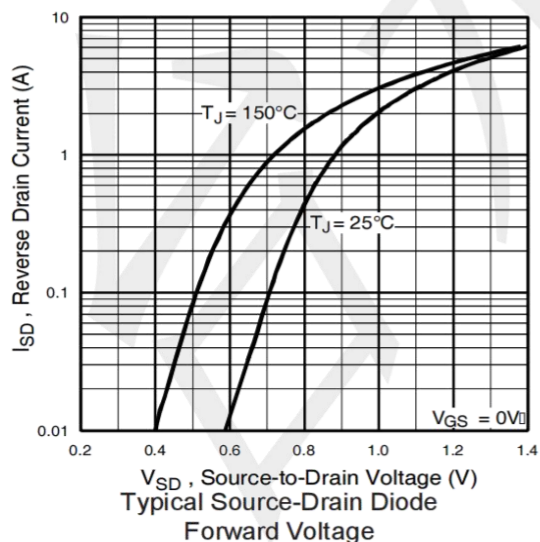
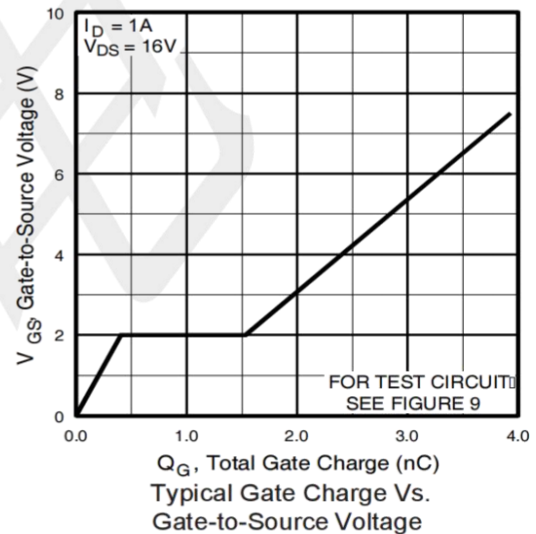
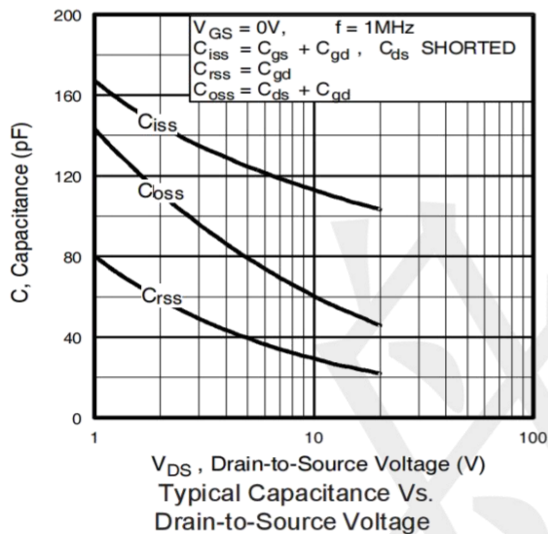
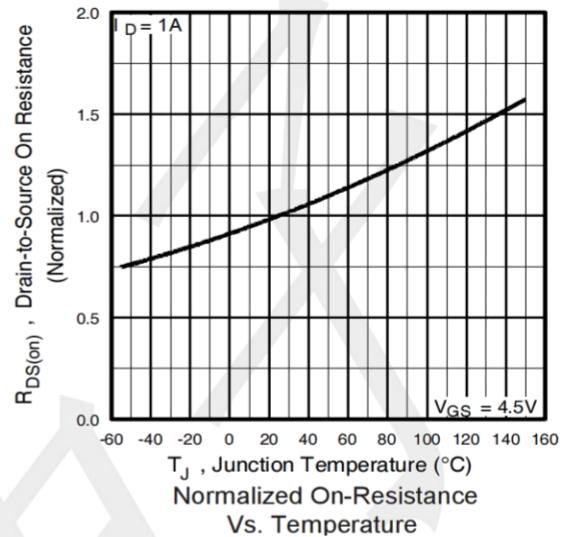
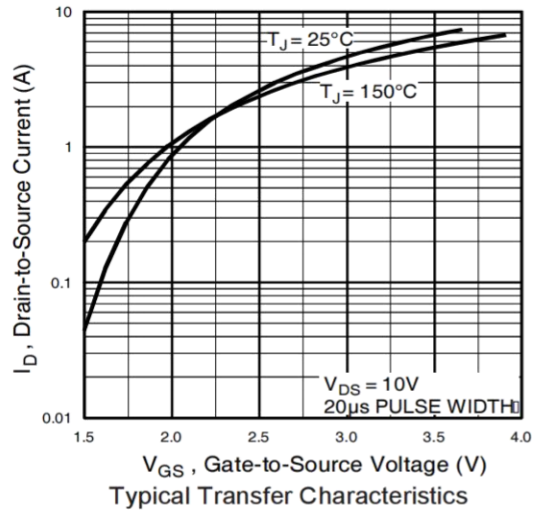
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=250\mu A$	BV_{DSS}	20	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	0.5	0.75	1.1	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}=\pm 12V$	I_{GSS}	--	--	± 100	nA
Zero Gate Voltage Drain Current	$V_{DS}=20V, V_{GS}=0V$	I_{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}=4.5V, I_D=0.55A$	$R_{DS(on)}$	--	180	250	m Ω
	$V_{GS}=2.5V, I_D=0.45A$		--	230	300	
Forward Transconductance (Note 2)	$V_{DS}=10V, I_D=0.5A$	g_{fs}	--	1.7	--	S
Dynamic (Note 2)						
Input Capacitance	$V_{DS}=10V, V_{GS}=0V, F=1.0MHz$	C_{iss}	--	120	--	pF
Output Capacitance		C_{oss}	--	55	--	
Reverse Transfer Capacitance		C_{rss}	--	26	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DS}=10V, V_{GS}=4.5V, I_D=1.0A, R_G=6\Omega,$	$t_{d(on)}$	--	2.6	--	nS
Rise Time (Note 3)		t_r	--	9.4	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	9.8	--	
Fall Time (Note 3)		t_f	--	4.8	--	
Total Gate Charge	$V_{DS}=10V, I_D=1.0A, V_{GS}=4.5V$	Q_g	--	2.8	--	nC
Gate Source Charge		Q_{gs}	--	0.5	--	
Gate Drain Charge		Q_{gd}	--	1.2	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}=0V, I_F=0.5A$	V_{SD}	--	0.7	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	0.8	A
Pulsed Current (Note 1)		I_{SM}	--	--	1.8	A

Notes:

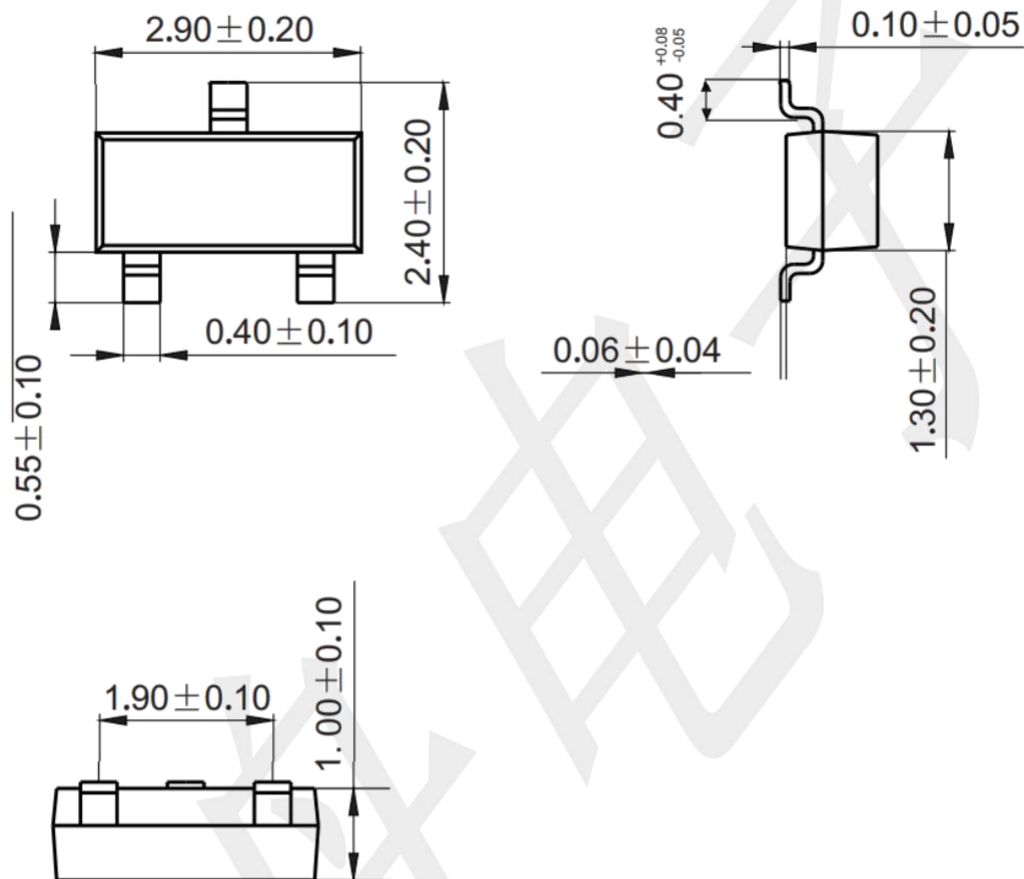
1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

