

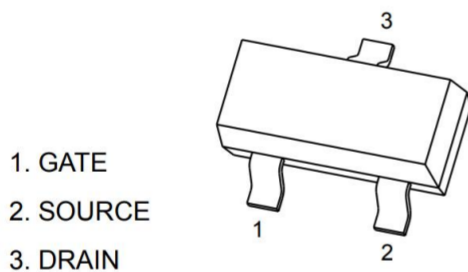
Product Summary

- V_{DS} 60 V
- $R_{DS(ON)}$ ($V_{GS}=10V$) $\leq 1.5\Omega$
- $R_{DS(ON)}$ ($V_{GS}=4.5V$) $\leq 2.0\Omega$

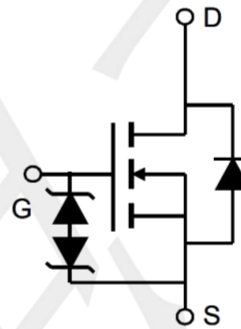
Application

- Interfacing Switching
- Load Switch
- Portable equipment and battery

Package and Pin Configuration



Circuit diagram



SOT23

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

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.5	A
Pulsed Drain Current ($t = 100 \mu\text{s}$)	I_{DM}	1.0	A
Maximum Power Dissipation	P_D	0.35	W
		0.21	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($t \leq 10\text{s}$)	$R_{\theta JA}$	357	$^\circ\text{C/W}$

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

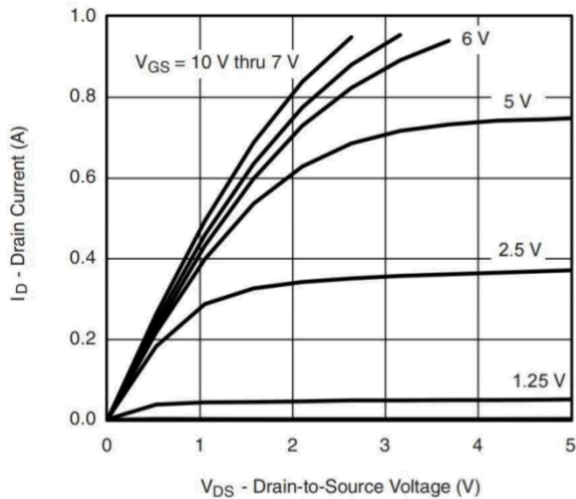
Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	$V_{GS}=0V, I_D=10\mu A$	BV_{DSS}	60	--	--	V
Gate-Source Threshold Voltage	$V_{DS}=V_{GS}, I_D=250\mu A$	$V_{GS(th)}$	1.1	1.6	2.1	V
Gate-Source Leakage	$V_{DS}=0V, V_{GS}=\pm 20V$	I_{GSS}	--	--	± 10	μA
Zero Gate Voltage Drain Current	$V_{DS}=60V, V_{GS}=0V$	I_{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance (Note 1)	$V_{GS}=10V, I_D=0.25A$	$R_{DS(on)}$	--	1.1	1.5	Ω
	$V_{GS}=4.5V, I_D=0.25A$		--	1.6	2.0	
Forward Transconductance (Note 2)	$V_{DS}=15V, I_D=0.2A$	g_{fs}	--	100	--	mS
Dynamic (Note 2)						
Input Capacitance	$V_{DS}=25V, V_{GS}=0V,$ $F=1.0MHz$	C_{iss}	--	30	--	μF
Output Capacitance		C_{oss}	--	6	--	
Reverse Transfer Capacitance		C_{rss}	--	3	--	
Switching						
Turn-On Delay Time (Note 3)	$V_{DS}=30V,$ $I_D=0.1A,$ $V_{GEN}=10V,$ $R_G=10\Omega, R_L=150\Omega$	$t_{d(on)}$	--	25	--	nS
Rise Time (Note 3)		t_r	--	10	--	
Turn-Off Delay Time (Note 3)		$t_{d(off)}$	--	35	--	
Fall Time (Note 3)		t_f	--	20	--	
Total Gate Charge	$V_{GS}=10V,$ $V_{DS}=15V, I_D=0.2A$	QG	--	0.4	--	nC
Gate Source Charge		QGS	--	0.1	--	
Gate Drain Charge		QGD	--	0.11	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	$V_{GS}=0V, I_F=0.2A$	V_{SD}	--	0.85	1.3	V
Continuous Source Current	Integral reverse diode in the MOSFET	I_S	--	--	0.5	A
Pulsed Current (Note 1)		I_{SM}	--	--	1.0	A

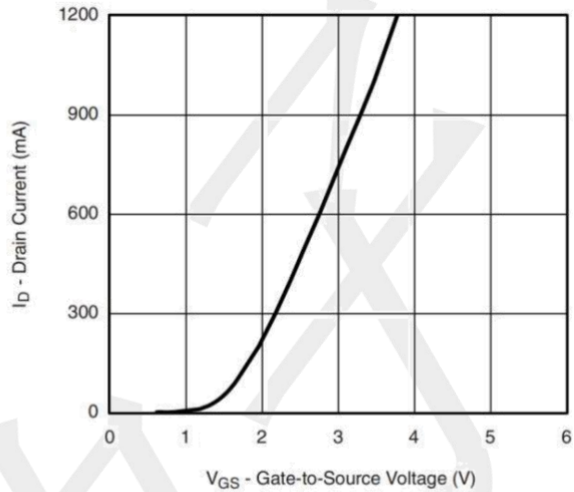
Notes:

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

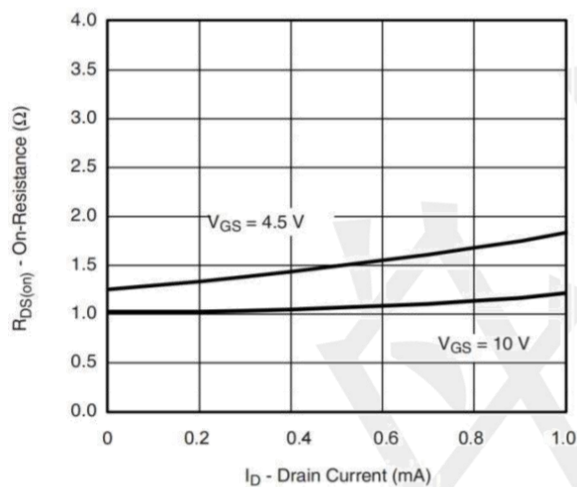
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



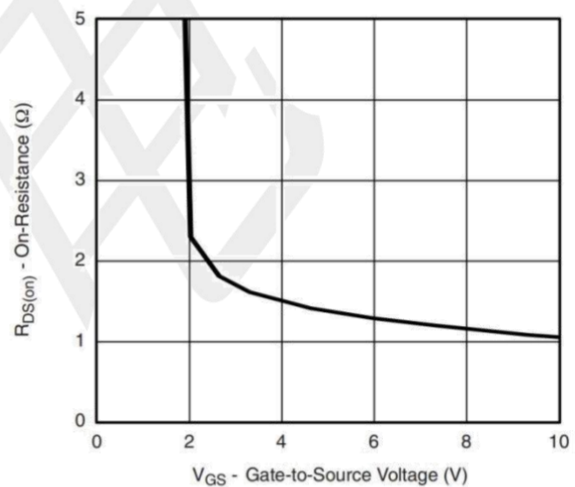
Output Characteristics



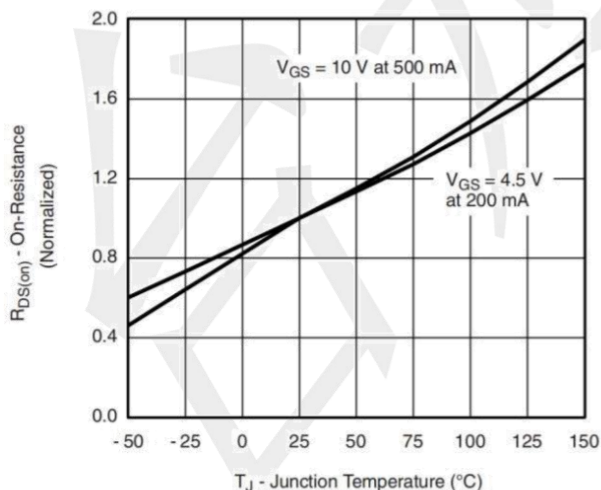
Transfer Characteristics



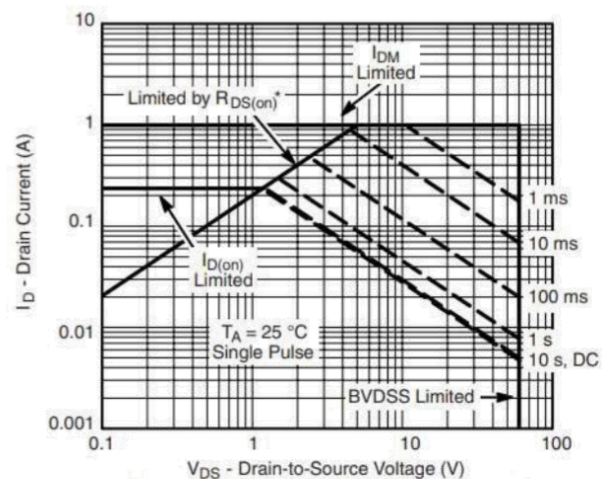
On-Resistance vs. Drain Current



On-Resistance vs. Gate-Source Voltage



On-Resistance vs. Junction Temperature

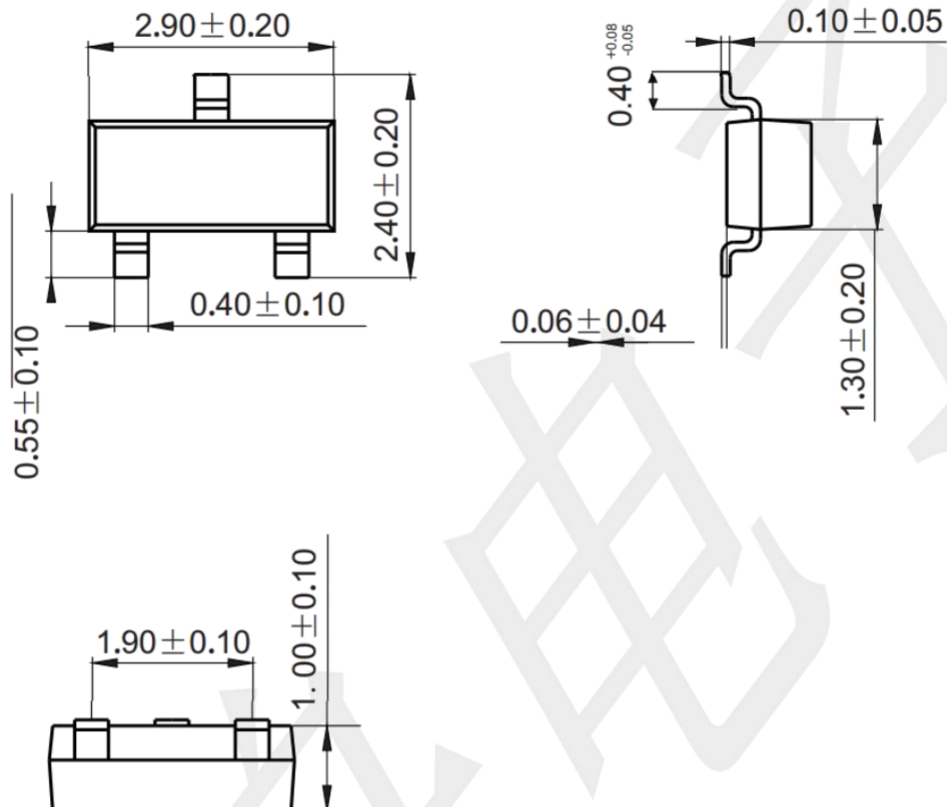


* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area

Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

