

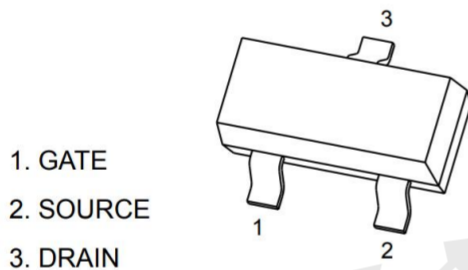
Product Summary

- 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

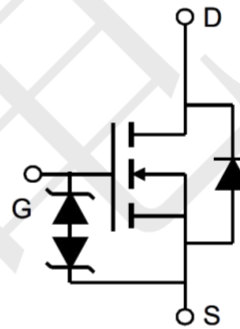
- Interfacing Switching
- Load Switch
- Portable equipment and battery

Package and Pin Configuration



SOT23

Circuit diagram



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).

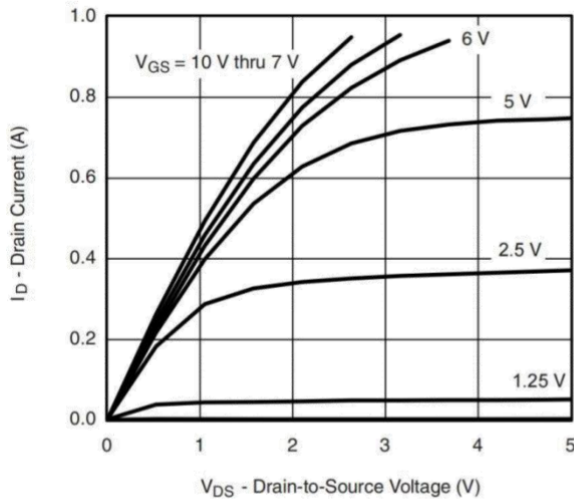
Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 10μA	BV _{DSS}	60	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = 250μA	V _{GS(th)}	1.1	1.6	2.1	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±10	uA
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	--	pF
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 = 10Ω,R _L = 150Ω	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

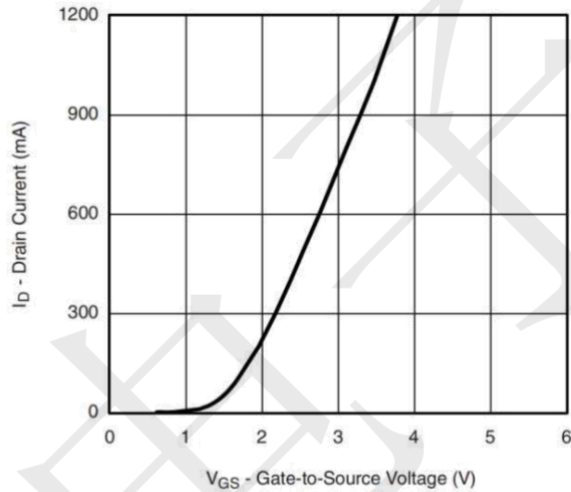
Notes:

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

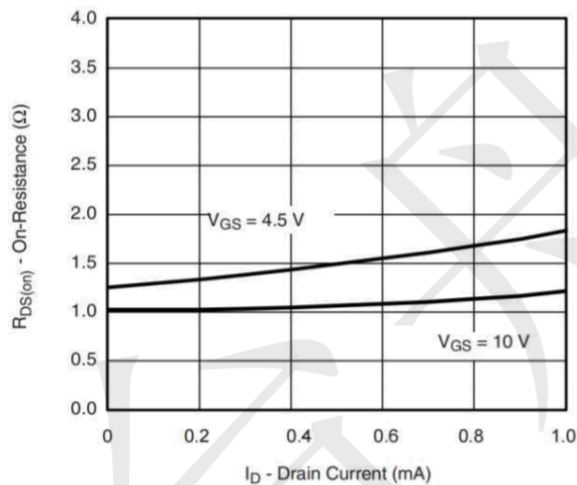
TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



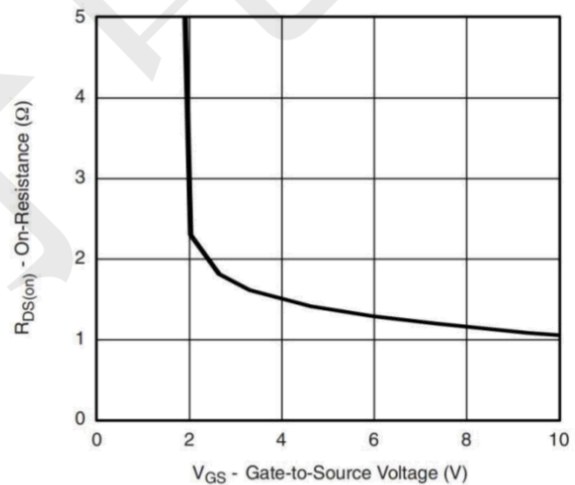
Output Characteristics



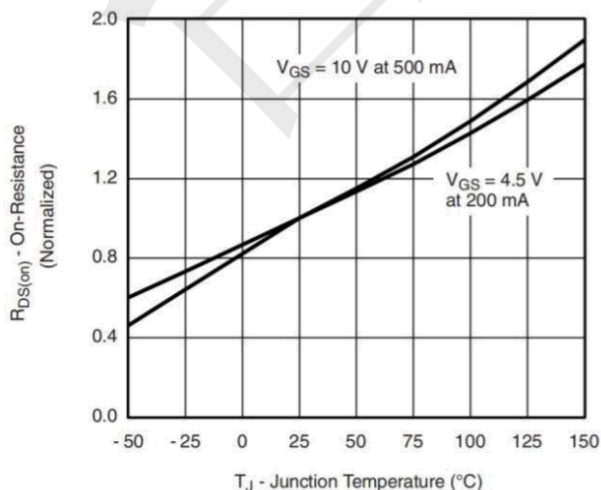
Transfer Characteristics



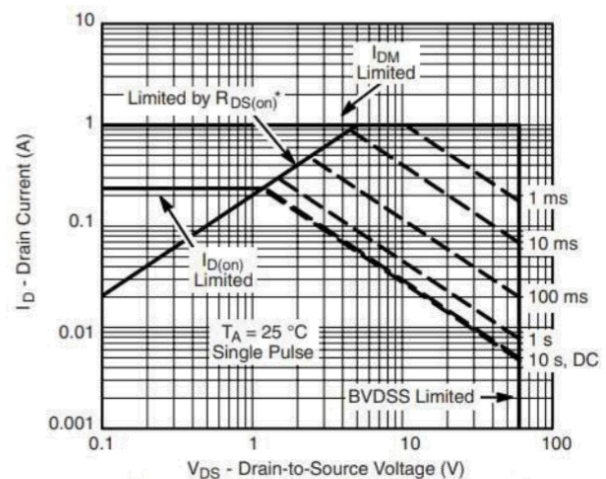
On-Resistance vs. Drain Current



On-Resistance vs. Gate-Source Voltage



On-Resistance vs. Junction Temperature

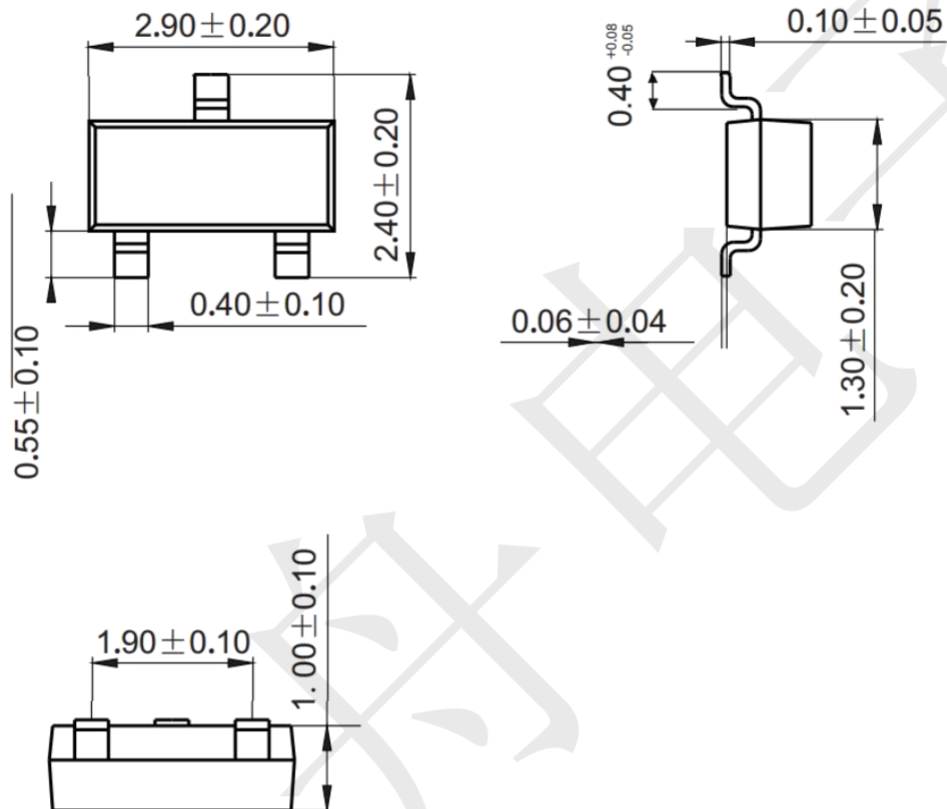


* V_{GS} > minimum V_{GS} at which $R_{DS(on)}$ is specified

Safe Operating Area

Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

