

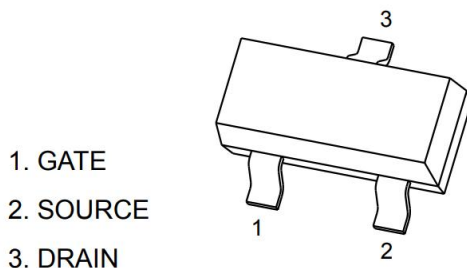
Product Summary

- V_{DS} 30 V
- $R_{DS(ON)}$ ($V_{GS}=10V$) $\leq 22m\Omega$ (Typ)
- $R_{DS(ON)}$ ($V_{GS}=4.5V$) $\leq 27m\Omega$ (Typ)

Application

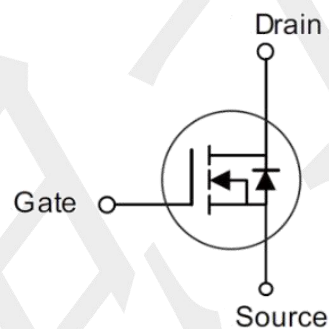
- Interfacing Switching
- Load Switch
- Portable equipment and battery

Package and Pin Configuration



SOT-23

Circuit diagram



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

PARAMETER		SYMBOL	LIMIT	UNIT
Drain-Source Voltage		V _{DS}	30	V
Gate-Source Voltage		V _{GS}	±12	V
Continuous Drain Current TA=25°C		I _D	5.8	A
Continuous Drain Current TA=75°C		I _D	4.8	A
Pulsed Drain Current (t = 100 μs)		I _{DM}	30	A
Maximum Power Dissipation	TA=25°C	P _D	1.25	W
	TA=75°C		0.8	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($t \leq 10\text{s}$)	$R_{\theta JA}$	100	$^\circ\text{C/W}$

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

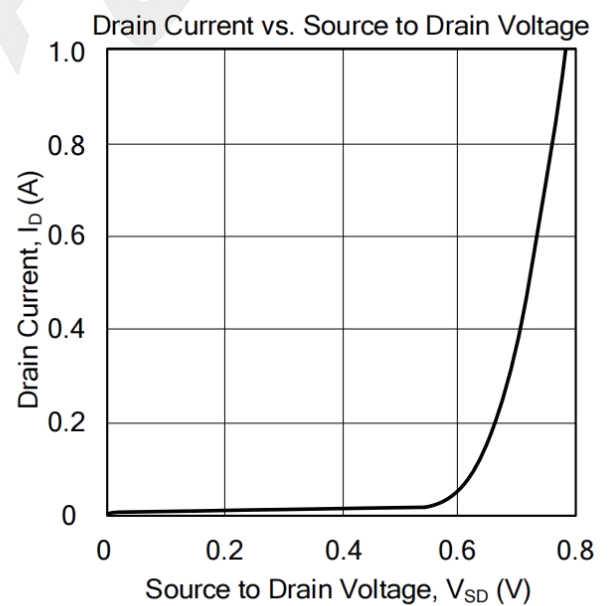
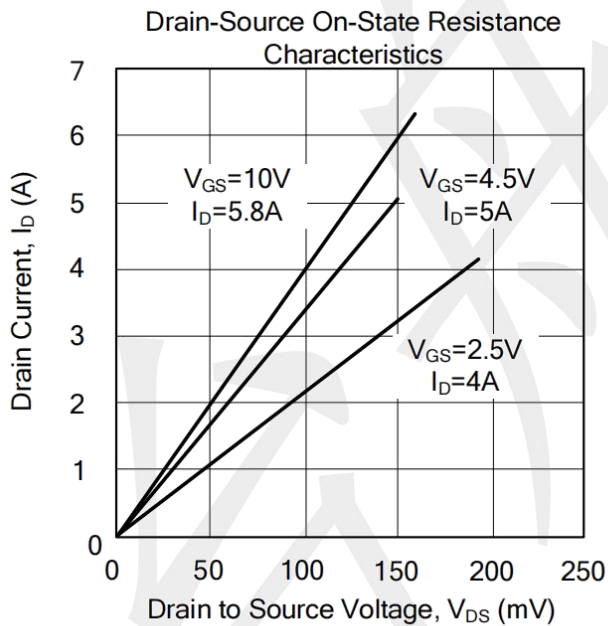
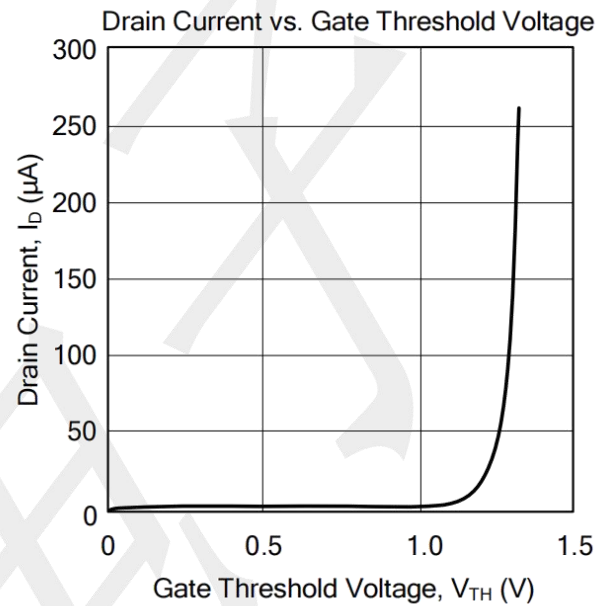
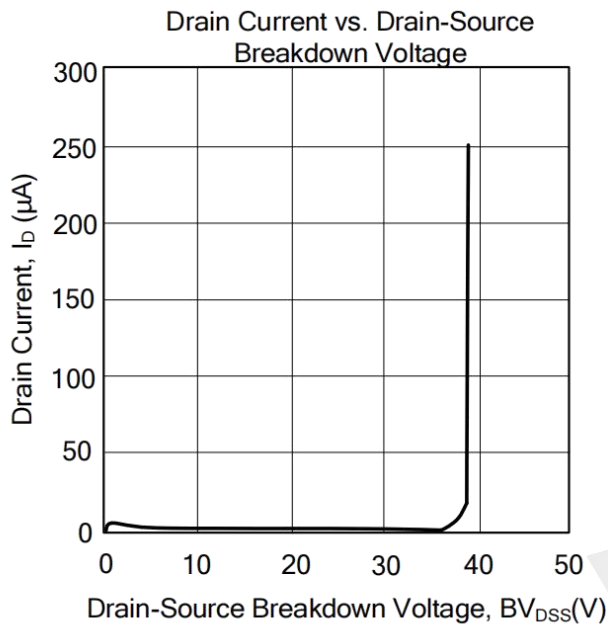
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 10μA	BV _{DSS}	30	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = 250μA	V _{GS(th)}	0.7	1.1	1.5	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±12V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = 24V, V _{GS} =0V	I _{DSS}	--	--	1.0	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = 10V, I _D = 5.8A	R _{DS(on)}	--	22	28	mΩ
	V _{GS} = 4.5V, I _D = 5.0A		--	27	33	
	V _{GS} = 2.5V, I _D = 4.0A		--	43	52	
Forward Transconductance (Note 2)	V _{DS} = 5V, I _D = 5.0A	g _{fs}	--	20	--	S
Dynamic (Note 2)						
Input Capacitance	V _{DS} = 15V, V _{GS} = 0V, F = 1.0MHz	C _{iss}	--	550	--	pF
Output Capacitance		C _{oss}	--	72	--	
Reverse Transfer Capacitance		C _{rss}	--	57	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = 15V, V _{GS} = 10V, I _D =5.8A, R _G = 3Ω.	t _{d(on)}	--	5	--	nS
Rise Time (Note 3)		t _r	--	16	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	17	--	
Fall Time (Note 3)		t _f	--	24	--	
Total Gate Charge	V _{DS} = 10V, I _D = 5.8A,V _{GS} = 4.5V	Q _g	--	9	--	nC
Gate Source Charge		Q _{gs}	--	1.4	--	
Gate Drain Charge		Q _{gd}	--	3.4	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = 1A	V _{SD}	--	0.7	1.1	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _s	--	--	5.8	A
Pulsed Current (Note 1)		I _{SM}	--	--	30	A

Notes:

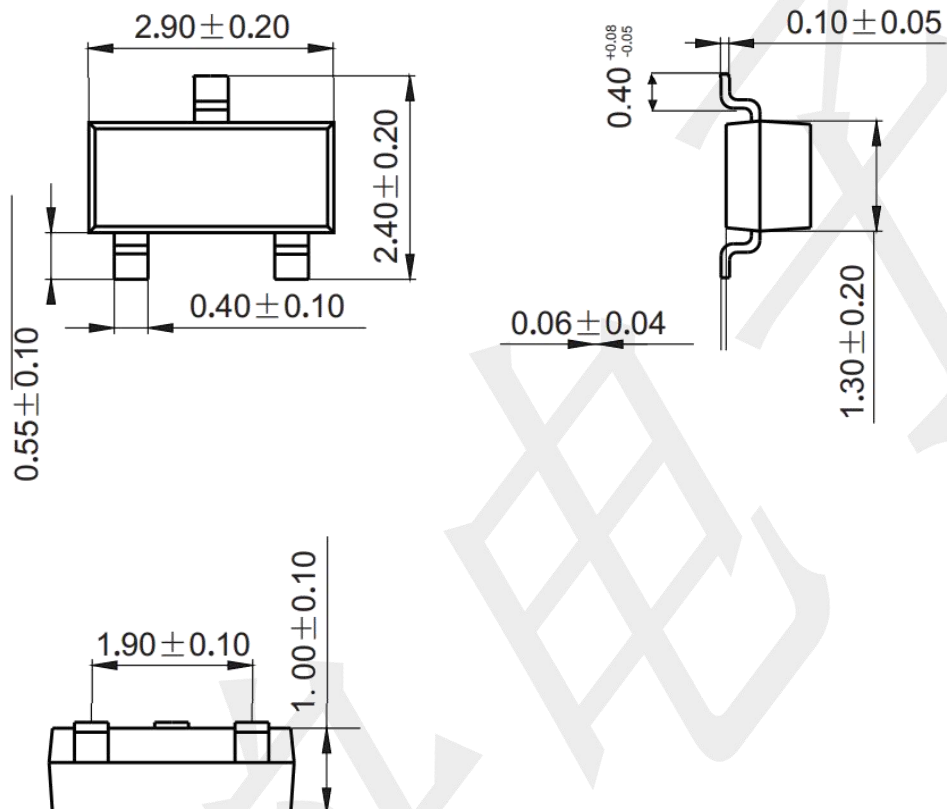
1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



Package Outline Dimensions (unit: mm)

SOT-23



Mounting Pad Layout (unit: mm)

