

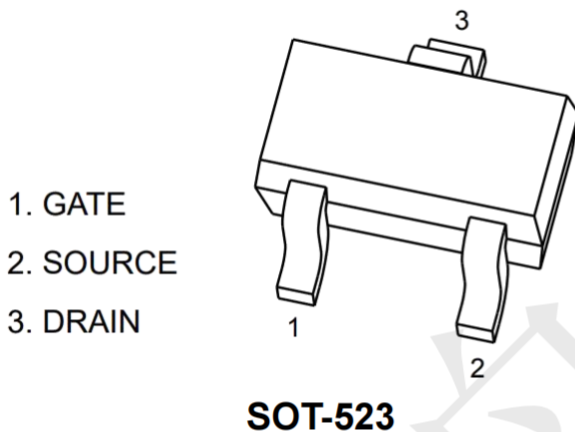
Product Summary

- V_{DS} 20 V
- I_{DS} ($V_{GS}=4.5V$) 2.8 A
- $R_{DS(ON)}$ ($V_{GS}=4.5V$) $\leq 40m\Omega$ (Typ)

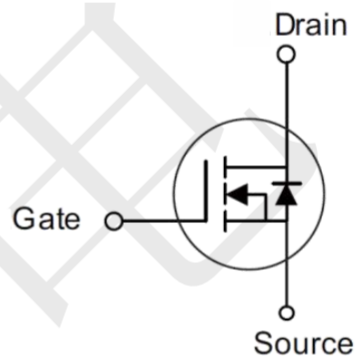
Application

- Interfacing Switching
- Load Switch
- Portable equipment and battery

Package and Pin Configuration



Circuit diagram



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

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	20	V
Gate-Source Voltage	V_{GS}	± 8	V
Continuous Drain Current $T_A=25^\circ C$	I_D	2.8	A
Pulsed Drain Current ($t = 100 \mu s$)	I_{DM}	4.8	A
Maximum Power Dissipation	P_D	0.35	W
Operating Junction Temperature Range	T_J	-55 to +150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ C$

Thermal Characteristic

PARAMETER		Symbol	Value	Unit
Thermal Resistance from Junction to Ambient($t \leq 10s$)	PCB Mount (Note)	$R_{\theta JA}$	357	$^\circ C/W$

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

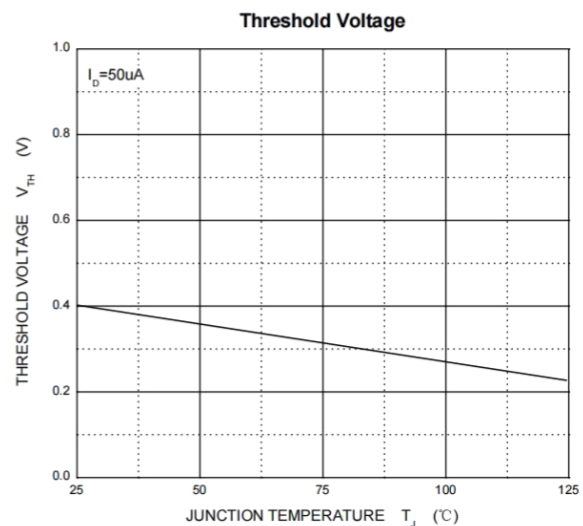
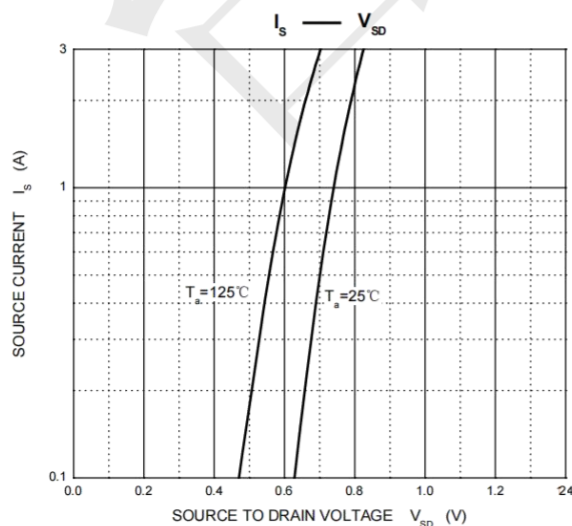
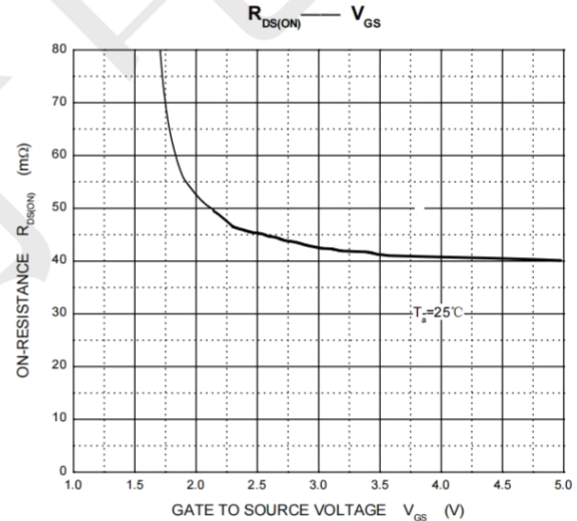
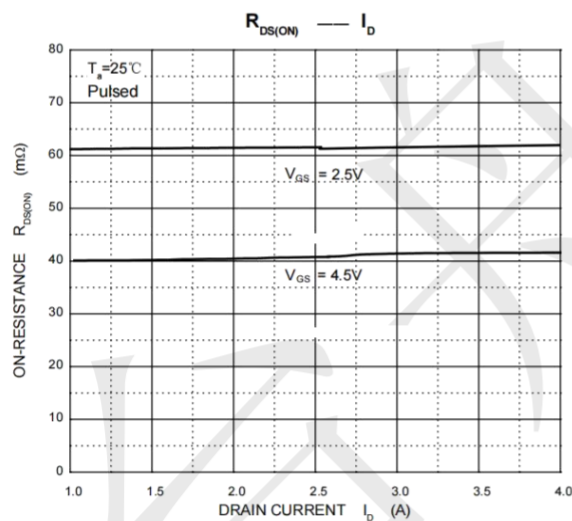
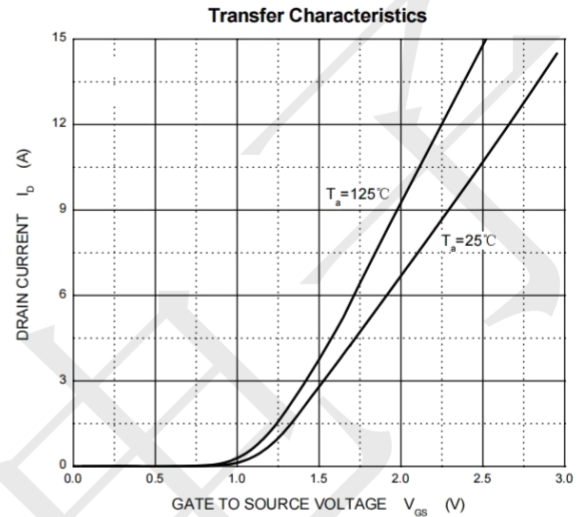
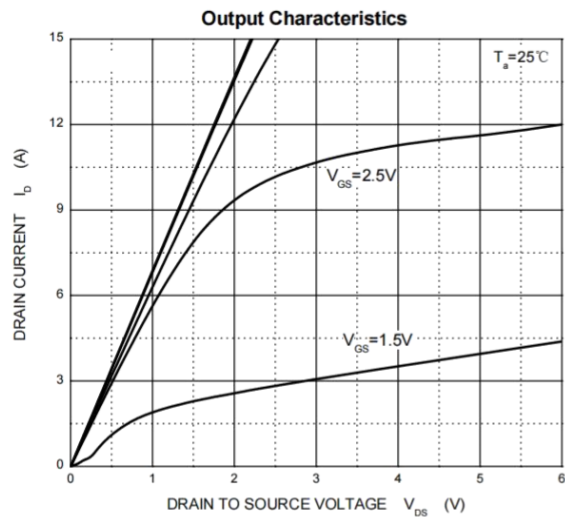
Electrical Characteristics (T_A=25 °C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D = 10μA	BV _{DSS}	20	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = 250μA	V _{GS(th)}	0.4	1.0	1.5	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±8V	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 = 2.8A	R _{DS(on)}	--	40	55	mΩ
	V _{GS} = 2.5V, I _D = 2.0A		--	60	100	
Forward Transconductance (Note 2)	V _{DS} = 5V, I _D = 2.0A	g _{fs}	--	8.0	--	S
Dynamic (Note 2)						
Input Capacitance	V _{DS} = 10V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	330	--	pF
Output Capacitance		C _{oss}	--	60	--	
Reverse Transfer Capacitance		C _{rss}	--	50	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DS} = 10V, V _{GS} = 4.5V, I _D = 2A, R _G = 2.5Ω.	t _{d(on)}	--	7.1	--	nS
Rise Time (Note 3)		t _r	--	55	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	16	--	
Fall Time (Note 3)		t _f	--	10	--	
Total Gate Charge	V _{DS} = 10V, I _D = 2.0A, V _{GS} = 4.5V	Q _g	--	4.2	--	nC
Gate Source Charge		Q _{gs}	--	1.0	--	
Gate Drain Charge		Q _{gd}	--	1.5	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _F = 1A	V _{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	2.8	A
Pulsed Current (Note 1)		I _{SM}	--	--	4.8	A

Notes:

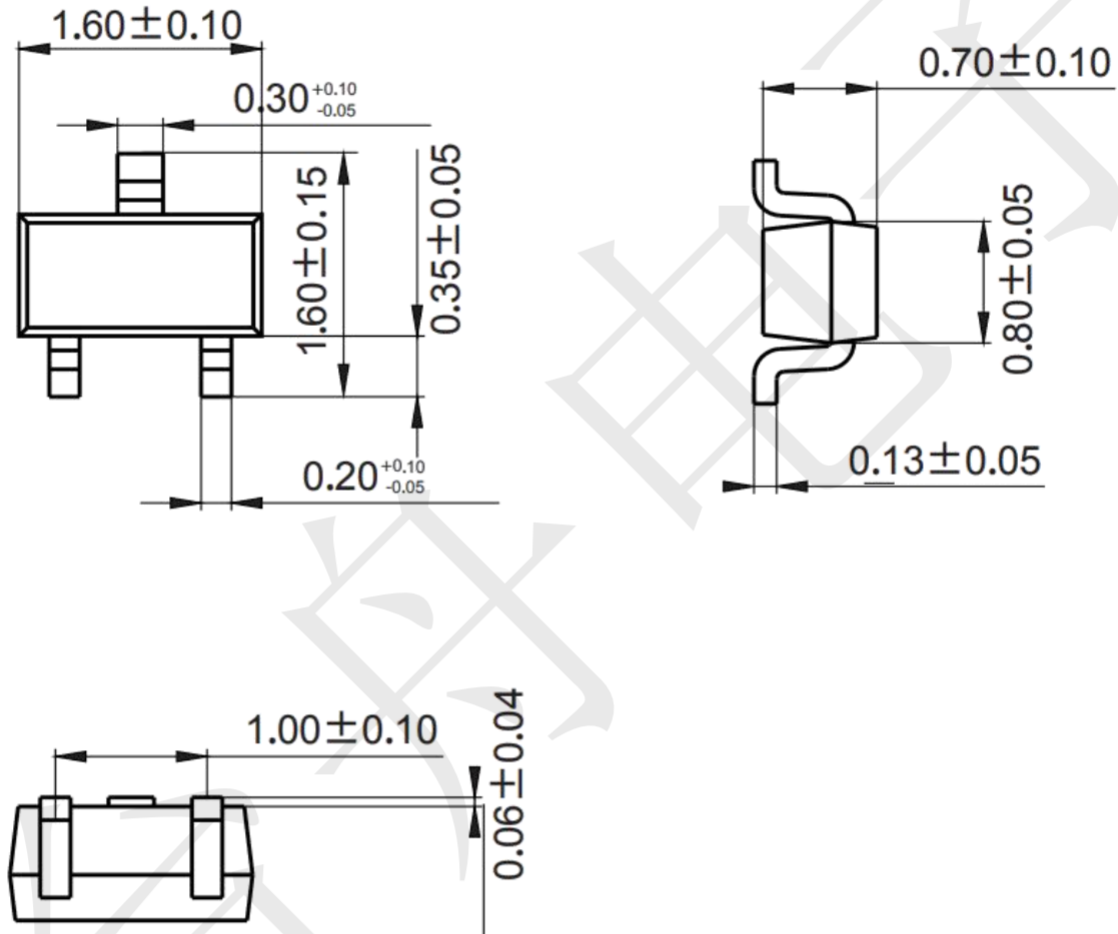
1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS (25 °C, unless otherwise noted)



Package Outline Dimensions (unit: mm)

SOT-523



Mounting Pad Layout (unit: mm)

