

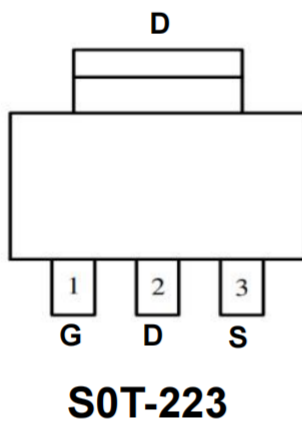
Product Summary

- V_{DS} 250 V
- I_{DS} 0.5A
- $R_{DS(ON)}$ (at $V_{GS}=10$) $\leq 2.6\Omega$ (Typ)
- Low Gate Charge Minimize Switching Loss

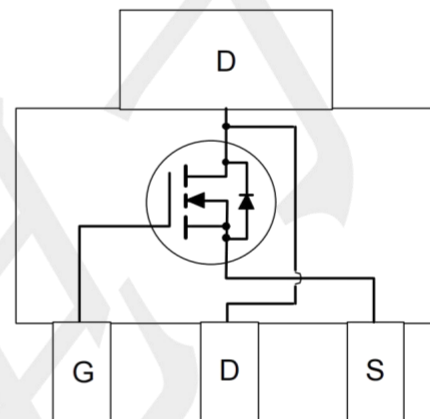
Application

- Adaptor
- Charger
- Power management
- SMPS Standby Power

Package and Pin Configuration



Circuit diagram



Absolute Maximum Ratings

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

PARAMETER	SYMBOL	Value	UNIT
Drain-Source Voltage	V_{DS}	250	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	0.5	A
Continuous Drain Current ($T_C=70^\circ\text{C}$)	I_D	0.4	A
Pulsed Drain Current (Note 1)	I_{DM}	1.5	A
Maximum Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	2	W
Operating Junction Temperature Range	T_J	+150	$^\circ\text{C}$
Storage Temperature Range	T_{stg}	-55 to +150	$^\circ\text{C}$
Thermal Resistance, Junction to Case	$R_{\theta JC}$	63	$^\circ\text{C/W}$

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

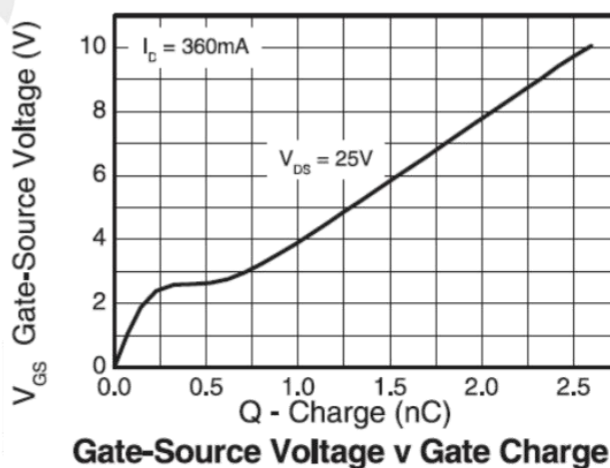
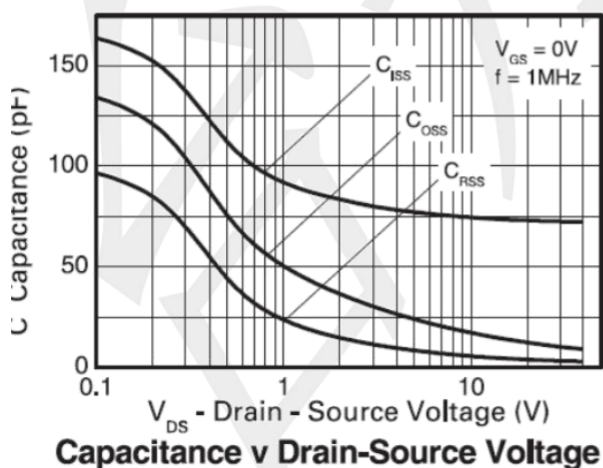
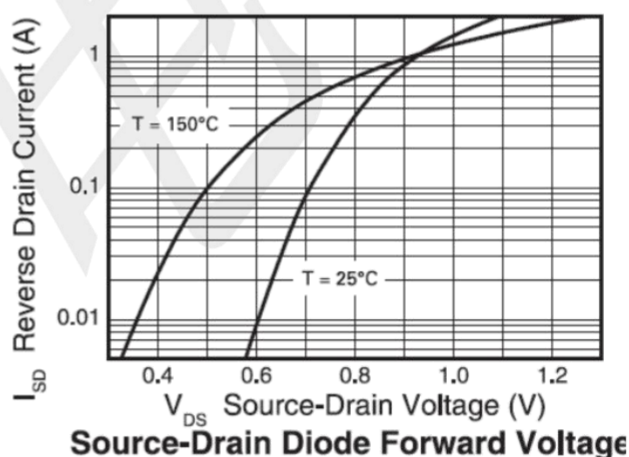
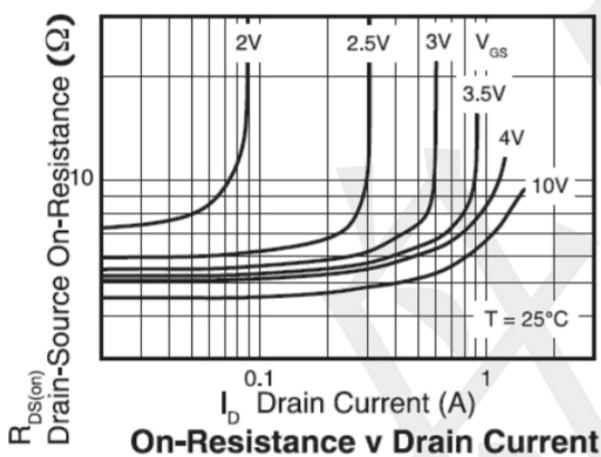
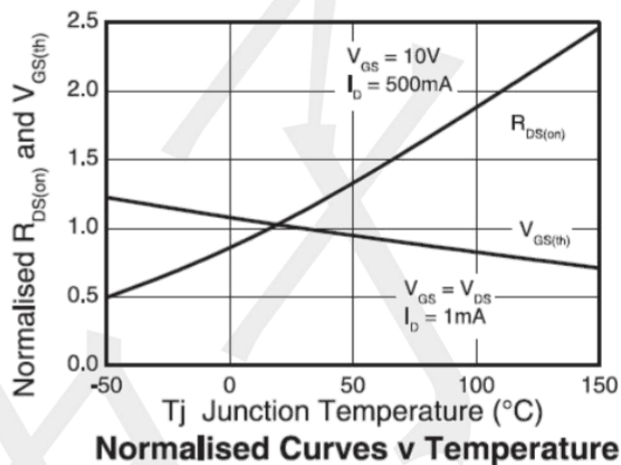
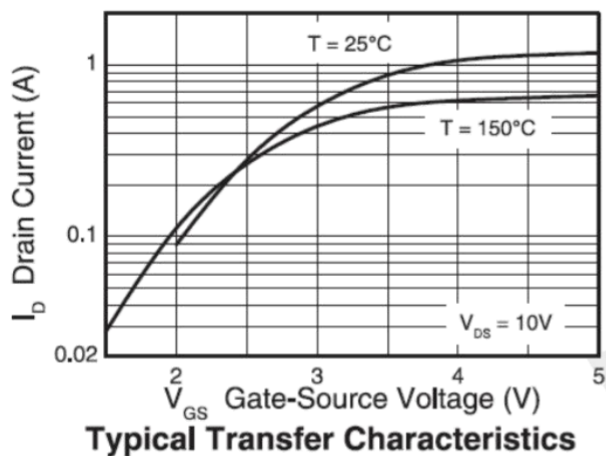
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	BV _{DSS}	240	250	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	V _{GS(th)}	1.0	1.3	3.0	V
Gate-Source Leakage	V _{DS} =0V, V _{GS} = ±20V	I _{GSS}	--	--	±100	nA
Zero Gate Voltage Drain Current	V _{DS} = 200V, V _{GS} =0V	I _{DSS}	--	--	0.6	μA
Drain-Source On-State Resistance	V _{GS} = 10V, I _D = 0.5A	R _{DS(on)}	--	2.6	3.5	Ω
	V _{GS} = 4.5V, I _D = 0.5A		--	3.0	4.5	
Forward Trans conductance	V _{DS} =10V,I _D =0.5A	g _{FS}	--	0.5	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = 25V, I _D =0.36A, V _{GS} = 10V	Q _g	--	2.6	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	0.2	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	0.5	--	
Input Capacitance	V _{DS} = 25V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	72	--	pF
Output Capacitance		C _{oss}	--	11	--	
Reverse Transfer Capacitance		C _{rss}	--	3.6	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = 30V, I _D = 0.36A, V _{GS} = 10V, R _G = 25Ω	t _{d(on)}	--	1.26	--	nS
Rise Time (Note 3)		t _r	--	1.71	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	11.4	--	
Fall Time (Note 3)		t _f	--	3.52	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _S = 0.5A	V _{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	0.5	A
Pulsed Current (Note 1)		I _{SM}	--	--	1.5	A

Notes:

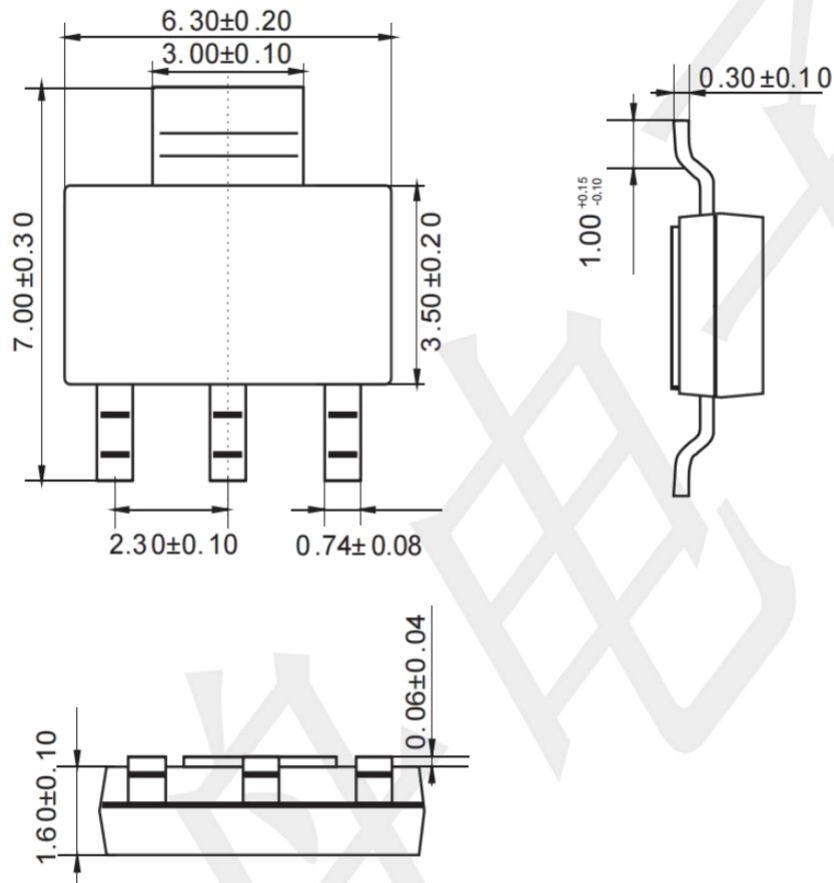
1. Pulse test; pulse width ≤ 300 μS, duty cycle ≤ 1%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

TYPICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)



Package Outline Dimensions (unit: mm)

SOT-223



Mounting Pad Layout (unit: mm)

