

Product Summary

- V_{DS} 250 V
- I_{DS} 16A
- $R_{DS(ON)}$ (at $V_{GS}=10$) $\leq 200m\Omega$ (Typ)
- Low Gate Charge Minimize Switching Loss

Application

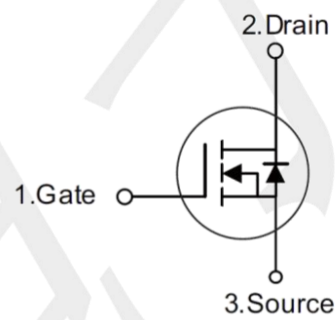
- Adaptor
- Charger
- Power management
- SMPS Standby Power

Package and Pin Configuration



TO-252

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	16	A
Continuous Drain Current ($T_C=70^\circ\text{C}$)	I_D	13	A
Pulsed Drain Current (Note 1)	I_{DM}	68	A
Maximum Power Dissipation @ $T_A=25^\circ\text{C}$	P_D	125	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	$R_{\theta JC}$	1.1	$^\circ\text{C/W}$

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

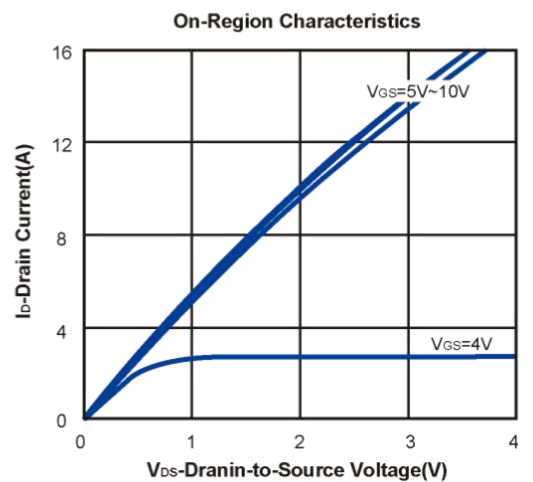
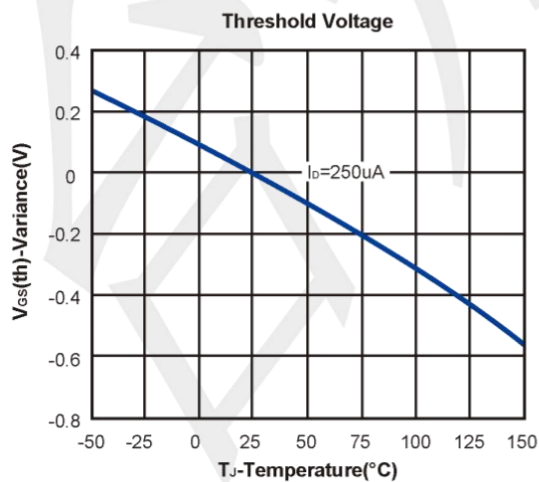
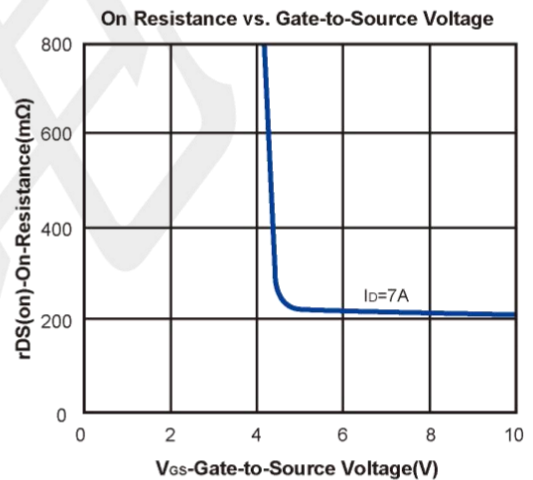
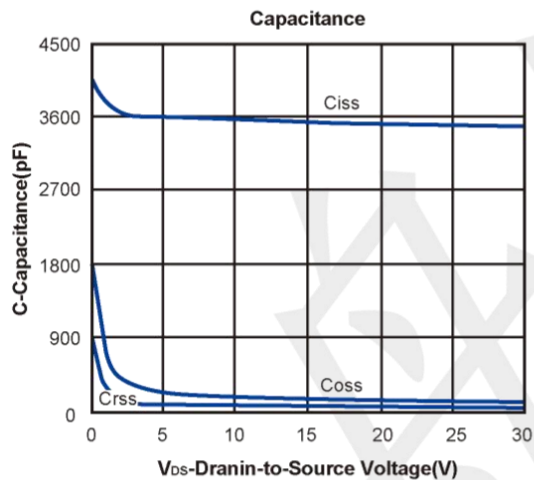
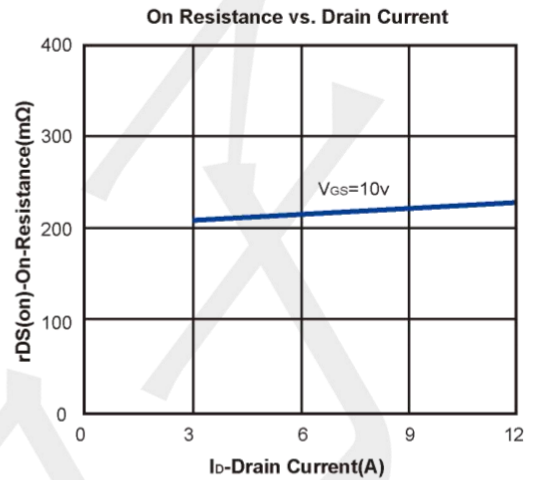
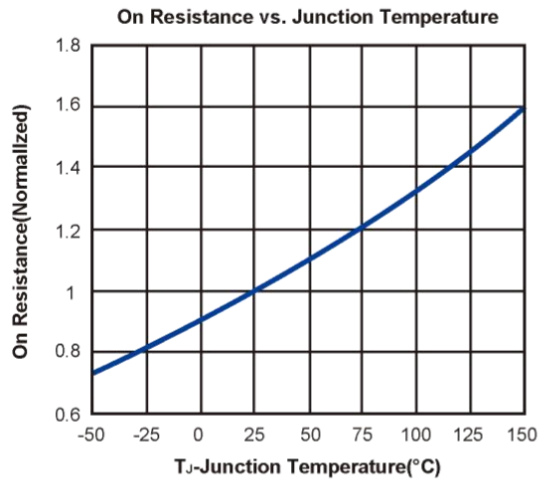
Electrical Characteristics (T_A=25°C unless otherwise noted)

PARAMETER	CONDITIONS	SYMBOL	MIN	TYP	MAX	UNIT
Static						
Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =250μA	BV _{DSS}	250	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D =250μA	V _{GS(th)}	2.0	3.0	4.0	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}	--	--	1	μA
Drain-Source On-State Resistance	V _{GS} = 10V, I _D = 7A	R _{DS(on)}	--	200	280	mΩ
Forward Trans conductance	V _{DS} =10V,I _D =7A	g _{FS}	--	10	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = 200V, I _D =14A, V _{GS} = 10V	Q _g	--	70	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	16	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	23	--	
Input Capacitance	V _{DS} = 25V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	3460	--	pF
Output Capacitance		C _{oss}	--	112	--	
Reverse Transfer Capacitance		C _{rss}	--	51	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = 125V, I _D = 7A, V _{GS} = 10V, R _G = 25Ω	t _{d(on)}	--	50	--	nS
Rise Time (Note 3)		t _r	--	62	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	190	--	
Fall Time (Note 3)		t _f	--	80	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _S = 2A	V _{SD}	--	0.8	1.2	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	16	A
Pulsed Current (Note 1)		I _{SM}	--	--	68	A

Notes:

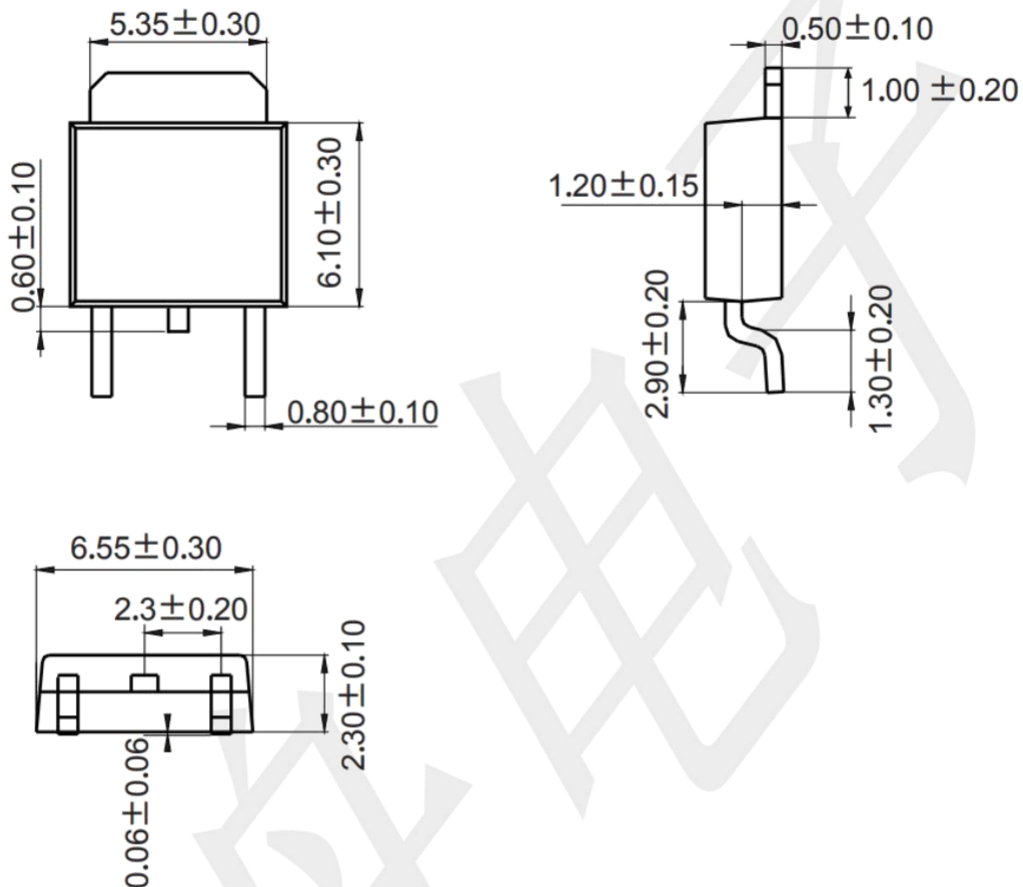
1. Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 1%.
2. Guaranteed by design, not subject to production testing.
3. Independent of operating temperature

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



Package Outline Dimensions (unit: mm)

TO-252



Mounting Pad Layout (unit: mm)

