

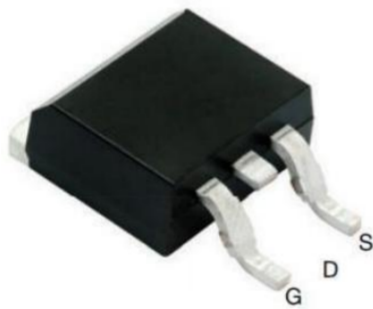
Product Summary

- V_{DS} -200 V
- I_{DS} - 7A
- $R_{DS(ON)}$ (at $V_{GS} = -10V$) $< 500m\Omega$ (Typ)

Application

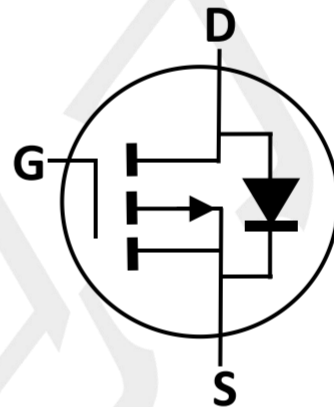
- Reverse Battery protection
- Load switch
- Power management
- PWM Application

Package and Pin Configuration



TO-263

Circuit diagram



Equivalent Circuit

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

PARAMETER	SYMBOL	LIMIT	UNIT
Drain-Source Voltage	V_{DS}	-200	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current	I_D	- 7	A
Pulsed Drain Current (note1)	I_{DM}	-26	A
Maximum Power Dissipation $T_C = 25^\circ C$	P_D	100	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 Case ($t \leq 10s$)	PCB Mount (note2)	$R_{\theta JC}$	1.25	$^\circ C/W$

notes 1. Repetitive Rating: Pulse width limited by maximum junction temperature.

2 . 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}	-200	--	--	V
Gate-Source Threshold Voltage	V _{DS} =V _{GS} , I _D = -250μA	V _{GS(th)}	-2.0	-2.8	-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}	--	-0.1	-1	μA
	V _{DS} = -200V, T _J =125°C		--	-10	-50	μA
Drain-Source On-State Resistance (Note 1)	V _{GS} = -10V, I _D = -6A	R _{DS(on)}	--	--	500	mΩ
Forward Transconductance (Note 2)	V _{DS} = -10V, I _D = -6A	g _{fs}	--	22	--	S
Dynamic (Note 2)						
Total Gate Charge (Note 3)	V _{DS} = -100V, I _D = -6A, V _{GS} = -10V	Q _g	--	56	--	nC
Gate-Source Charge (Note 3)		Q _{gs}	--	11	--	
Gate-Drain Charge (Note 3)		Q _{gd}	--	8.5	--	
Input Capacitance	V _{DS} = -75V, V _{GS} = 0V, F= 1.0MHz	C _{iss}	--	3600	--	pF
Output Capacitance		C _{oss}	--	455	--	
Reverse Transfer Capacitance		C _{rss}	--	186	--	
Switching						
Turn-On Delay Time (Note 3)	V _{DD} = -100V, I _D = -6A, V _{GS} = -10V, R _{GEN} = 6Ω	t _{d(on)}	--	33	--	nS
Rise Time (Note 3)		t _r	--	19	--	
Turn-Off Delay Time (Note 3)		t _{d(off)}	--	149	--	
Fall Time (Note 3)		t _f	--	50	--	
Source-Drain Diode Ratings and Characteristics (Note 2)						
Forward Voltage	V _{GS} = 0V, I _{SD} = -1A	V _{SD}	--	-0.76	-1.1	V
Continuous Source Current	Integral reverse diode in the MOSFET	I _S	--	--	-7	A
Pulsed Current (Note 1)		I _{SM}	--	--	-26	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)

Figure 1. Output Characteristics

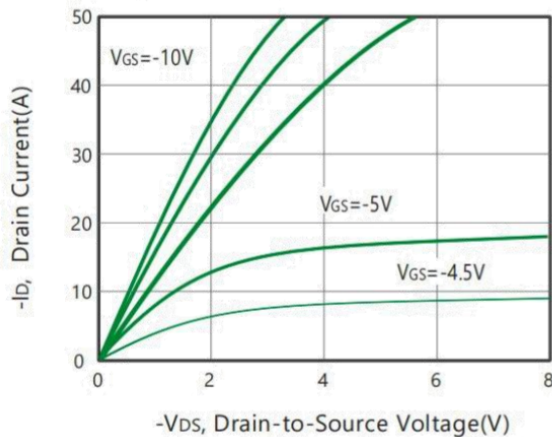


Figure 2. Body Diode Forward Voltage Variation with Source Current

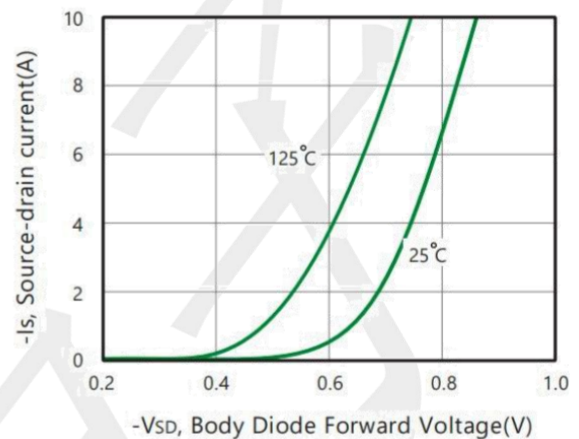


Figure 3. On-Resistance vs. Gate-Source Voltage

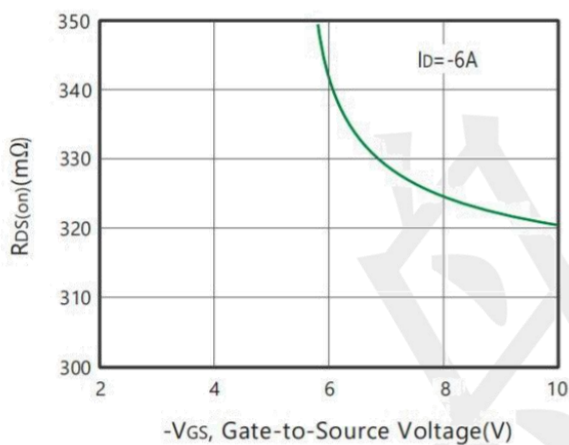


Figure 4. On-Resistance Variation with Drain Current and Temperature

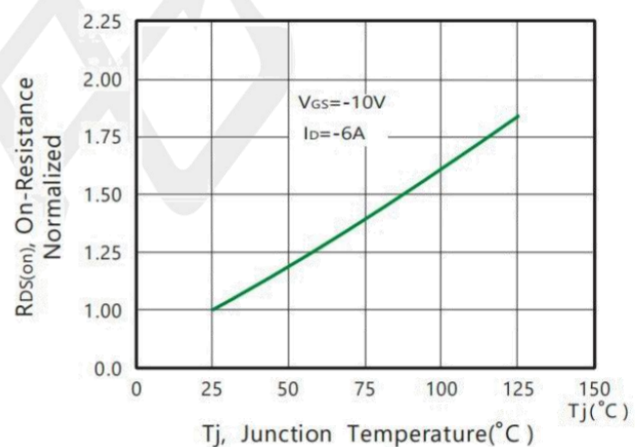


Figure 5. Gate Threshold Variation with Temperature

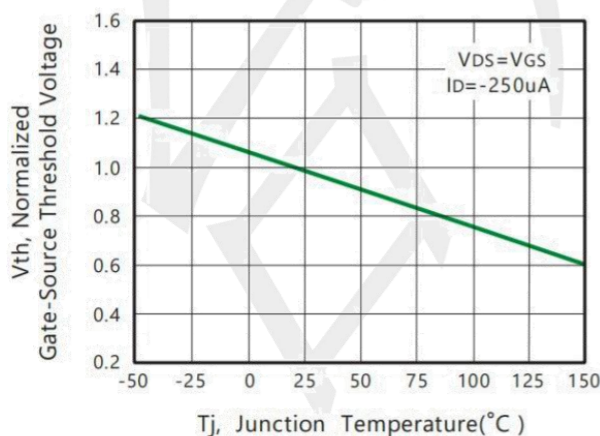
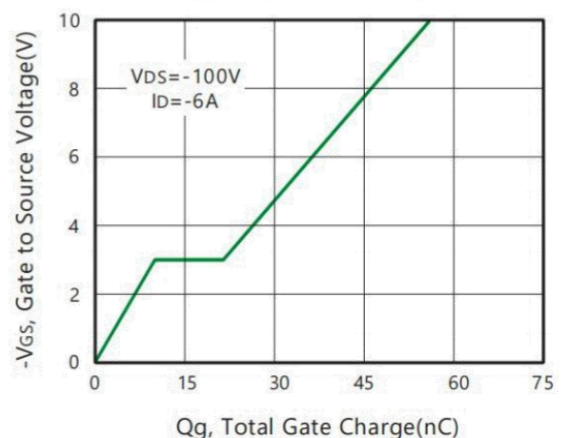
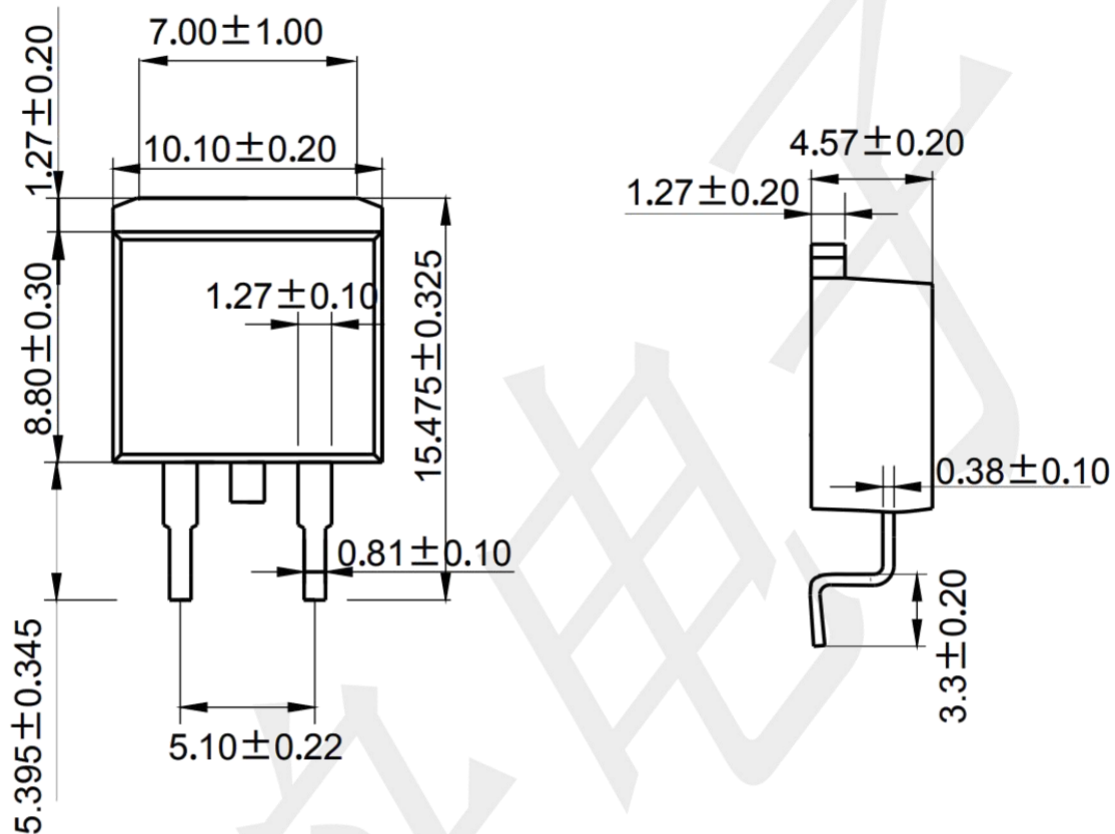


Figure 6. Gate Charge



Package Outline Dimensions (unit: mm)

TO-263



Mounting Pad Layout (unit: mm)

