

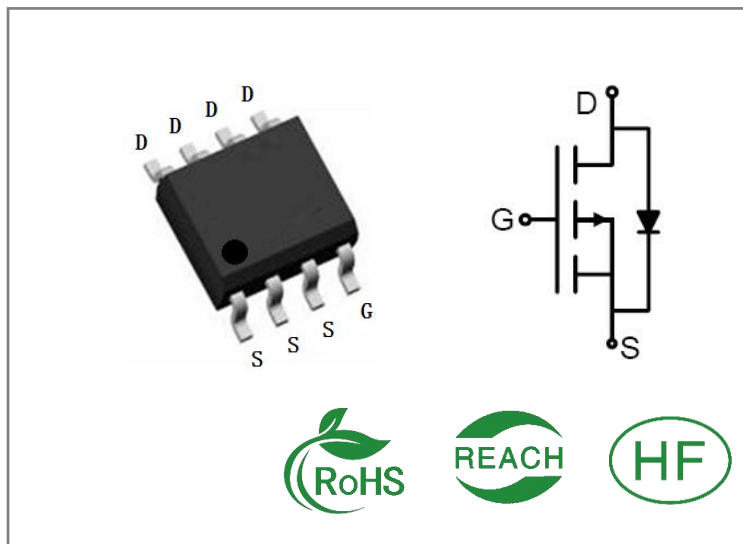
ID	R _{DS(ON)} (Typ)	VDSS
-10A	15mΩ	-30V

Applications:

- PWM applications
- Load switch
- Power management

Features:

- Fast switching speed
- 100% avalanche tested
- Improved dv/dt capability



Ordering Information

Part Number	Package	Marking	Packing	Qty.
RS4435	SOP-8	RS4435	Tape&reel	4000 PCS

Absolute Maximum Ratings Tc= 25°C unless otherwise specified

Symbol	Parameter	RS4435	Units
VDSS	Drain-to-Source Voltage	-30	V
ID	Continuous Drain Current TC=25°C	-10	A
ID	Continuous Drain Current TC=100°C	-6.3	
IDM	Pulsed Drain Current (Note*1)	40	
PD	Power Dissipation	3.2	W
VGS	Gate- to- Source Voltage	±20	V
TL TPKG	Maximum Temperature for Soldering	300	°C
	Leads at 0.063in(1.6mm)from Case for 10 seconds	260	
	Package Body for 10 seconds		
TJ and TSTG	Operating Junction and Storage Temperature Range	-55 to 150	

* Drain Current Limited by Maximum Junction Temperature

Caution: Stresses greater than those listed in the“ Absolute Maximum Ratings” Table may cause permanent damage to the device.

Thermal Resistance

Symbol	Parameter	RS4435	Units	Test Conditions
R θ JA	Junction-to- Ambient	39	°C / W	1 cubic foot chamber, free air.

OFF Characteristics TJ= 25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
BVDSS	Drain- to- source Breakdown Voltage	-30	--	--	V	VGS=0V, ID=250 μ A
IDSS	Drain- to- Source Leakage Current	--	--	1	μ A	VDS=-24V, VGS=0V
IGSS	Gate- to- Source Forward Leakage	--	--	100	nA	VGS=20V , VDS=0V
	Gate- to- Source Reverse Leakage	--	--	-100		VGS=-20V , VDS=0V

ON Characteristics TJ=25°C unless otherwise specified

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
RDS(on)	Static Drain- to- Source On- Resistance	--	15	20	m Ω	VGS=-10V, ID=-10A
		--	21	34	m Ω	VGS=-4.5V, ID=-5A
VGS(TH)	Gate Threshold Voltage	-1	-1.6	-3	V	VGS=VDS, ID=250 μ A

Resistive Switching Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
td(ON)	Turn- on Delay Time	--	10	--	nS	VDD=-15V ID=-1A RG=2.5 Ω
trise	Rise Time	--	26	--		
td(OFF)	Turn- OFF Delay Time	--	35	--		
tfall	Fall Time	--	8	--		

Dynamic Characteristics Essentially independent of operating temperature

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
Ciss	Input Capacitance	--	1800	--	pF	VGS=0V VDS=-15V f=1.0MHz
Coss	Output Capacitance	--	305	--		
Crss	Reverse Transfer Capacitance	--	216	--		
Qg	Total Gate Charge	--	30	--	nC	VDS=-15V ID=-10A VGS=-10V
Qgs	Gate- to- Source Charge	--	6	--		
Qgd	Gate-to-Drain(" Miller") Charge	--	9	--		

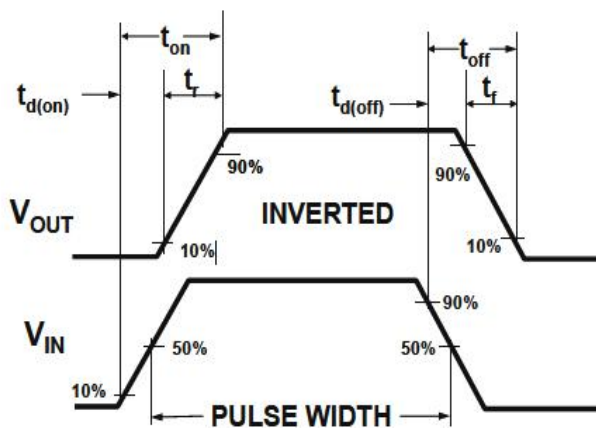
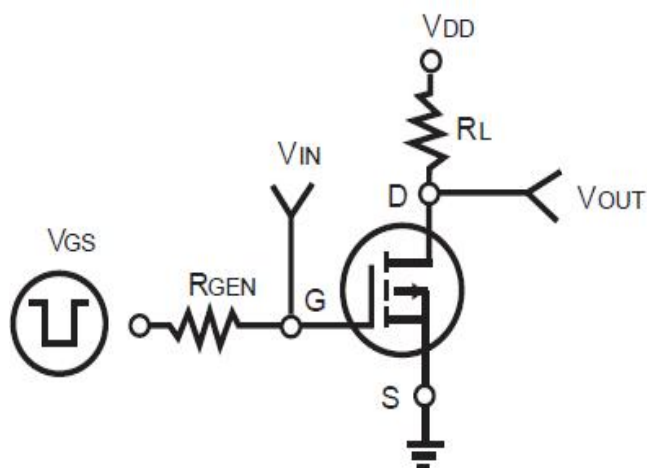
Source- Drain Diode Characteristics

Symbol	Parameter	Min.	Typ.	Max.	Units	Test Conditions
IS	Continuous Source Current	--	--	-10	A	Integral pn- diode in MOSFET
ISM	Maximum Pulsed Current	--	--	-40	A	
VSD	Diode Forward Voltage	--	--	-1.2	V	IS=-10A,VGS=0V

Notes:

* 1. Repetitive rating; pulse width limited by maximum junction temperature.

* 2. Pulse Test: Pulse width $\leq 300\mu\text{s}$, Duty Cycle $\leq 1\%$

Switch Time Test Circuit and Switching Waveforms


Typical Feature curve

Figure1. Power Dissipation

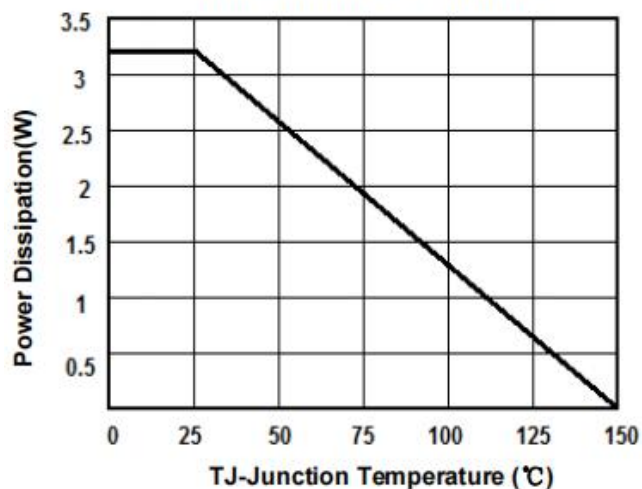


Figure2. Drain Current

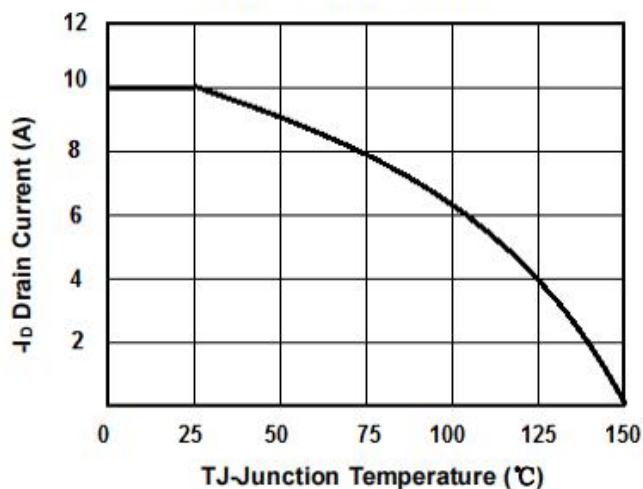


Figure3. Output Characteristics

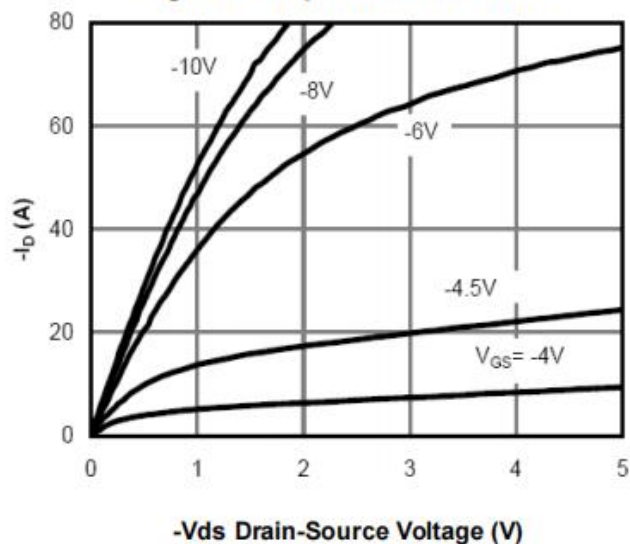


Figure4. Transfer Characteristics

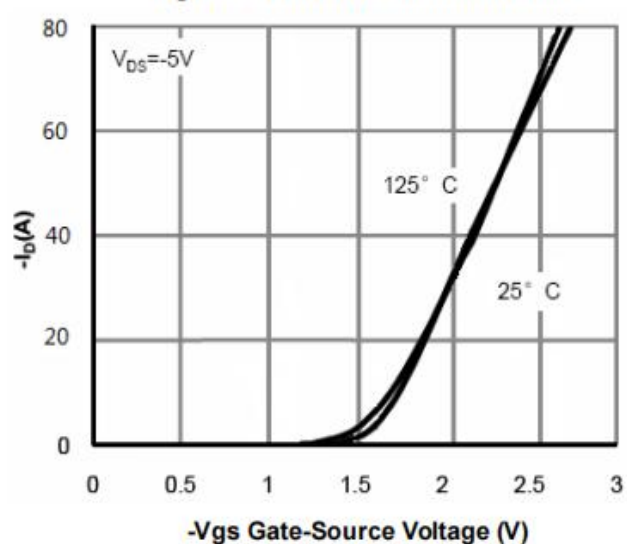


Figure5. Capacitance

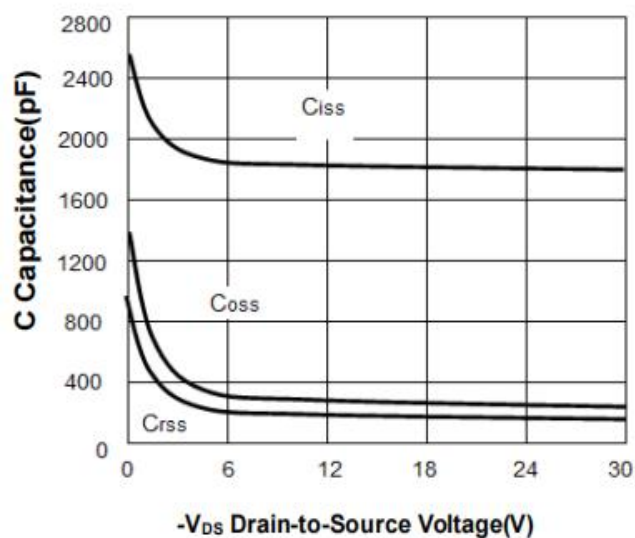


Figure6. RDS(ON) vs Junction Temperature

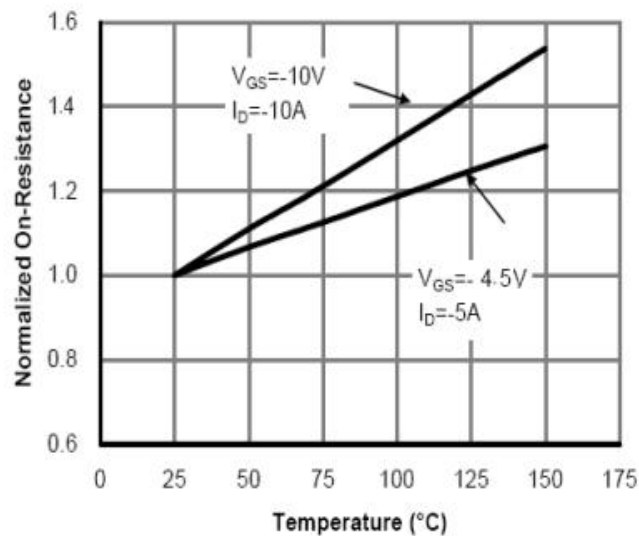


Figure7. Max BV_{DSS} vs Junction Temperature

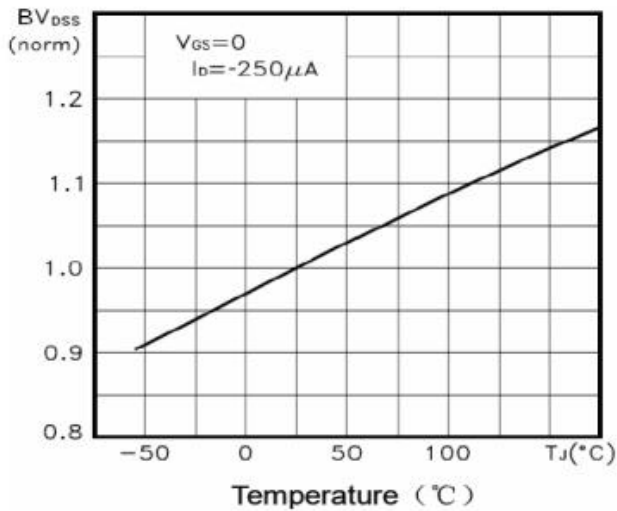


Figure8. $V_{GS(th)}$ vs Junction Temperature

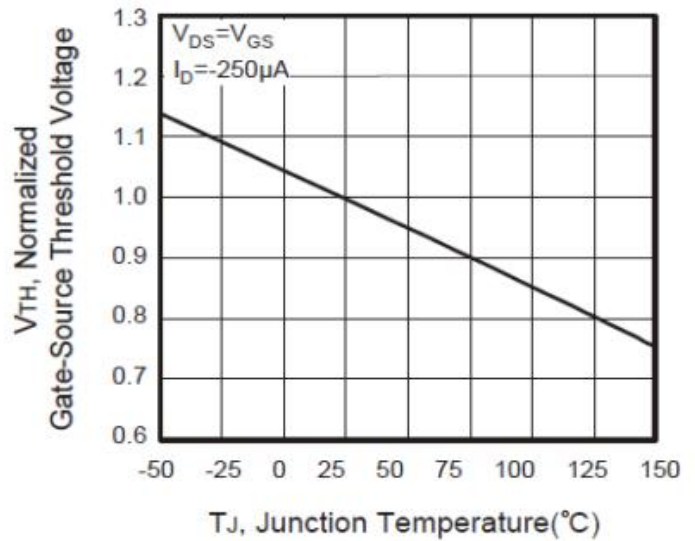


Figure9. Gate Charge Waveforms

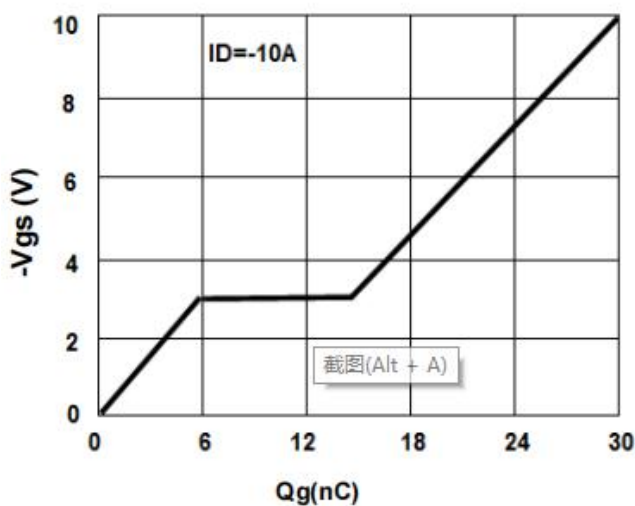


Figure10. Maximum Safe Operating Area

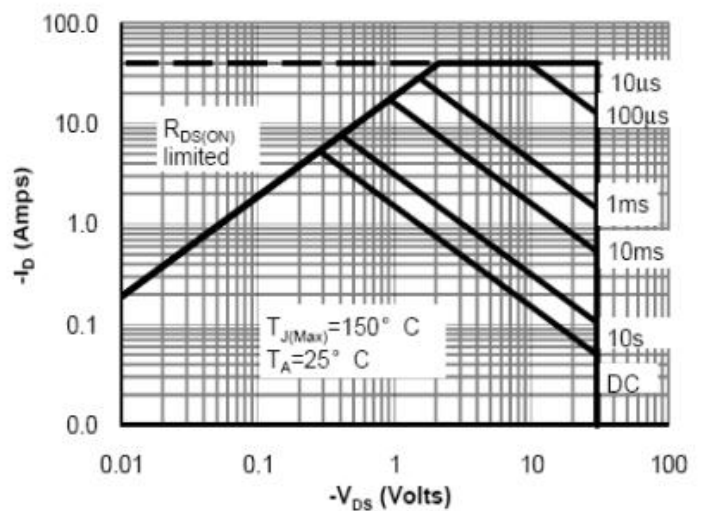
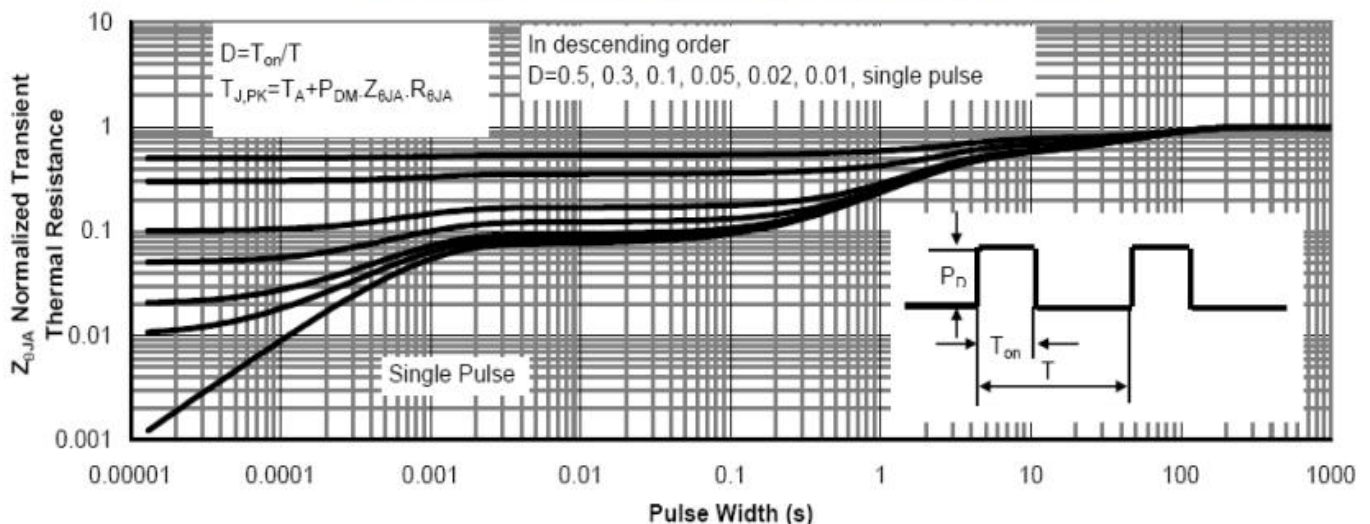
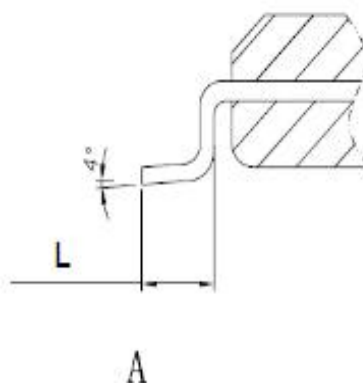
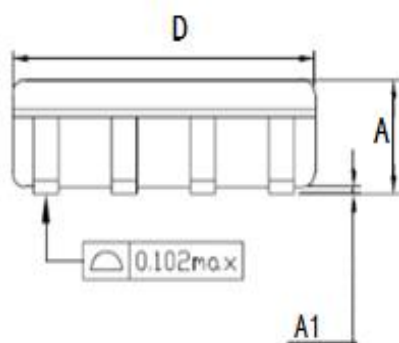
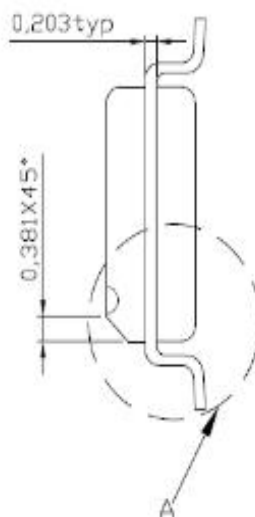
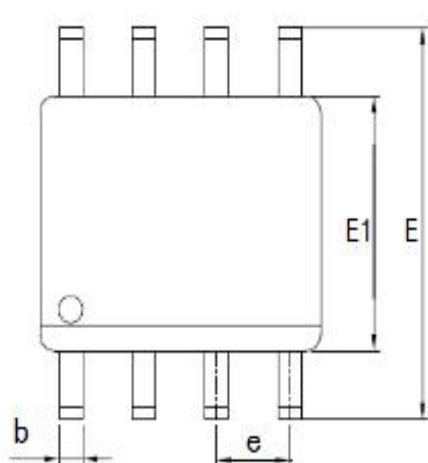


Figure11. Normalized Maximum Transient Thermal Impedance



Package outline drawing(SOP-8 Unit: mm)



COMMON DIMENSIONS			
SYMBOL	mm		
L	MIN	NOM	MAX
A	1.35	1.55	1.75
A1	0.1	0.15	0.2
b	0.346	0.406	0.466
D	4.8	4.89	4.98
E	5.75	6.00	6.25
E1	3.81	3.90	3.99
e	1.27TYP		
L	0.406	0.838	1.27

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