



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	42mΩ@-10V	-5.1A
	51mΩ@-6V	
	62mΩ@-4.5V	

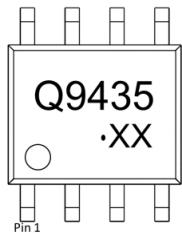
Feature

- TrenchFET Power MOSFET
- Excellent $R_{DS(on)}$ and Low Gate Charge

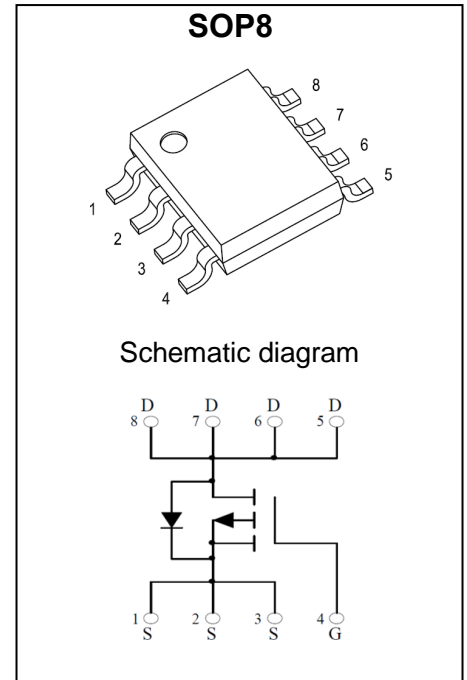
Application

- Load Switch for Portable Devices
- Battery Switch

MARKING:



Q9435 = Device Code;
 XX = Date Code;
 Solid Dot = Green Molding Compound Device;
 Solid Dot = Pin1 Indicator;



ABSOLUTE MAXIMUM RATINGS ($T_a=25^{\circ}C$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-5.1	A
Plused Drain Current	I_{DM}	-20	A
Single Pulsed Avalanche Energy*	E_{AS}	20	mJ
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient	$R_{\theta JA}$	89	$^{\circ}C/W$
Junction Temperature	T_J	150	$^{\circ}C$
Storage Temperature	T_{STG}	-55~ +150	$^{\circ}C$

* EAS condition: $V_{DD}=-50V, L=0.5mH, R_G=25\Omega$, Starting $T_J = 25^{\circ}C$

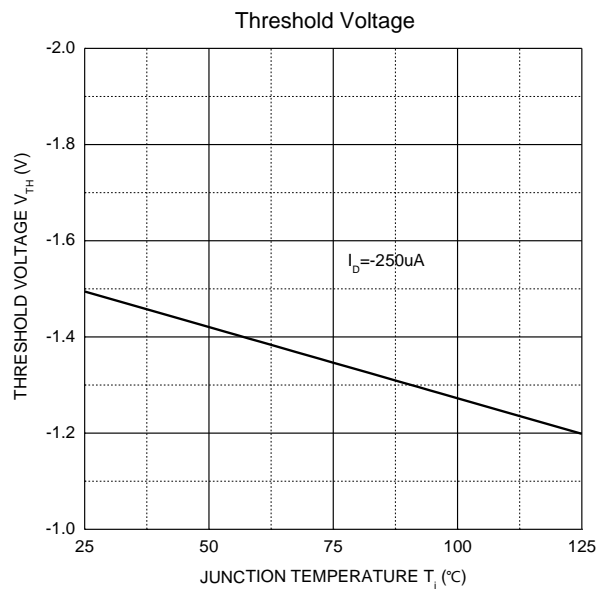
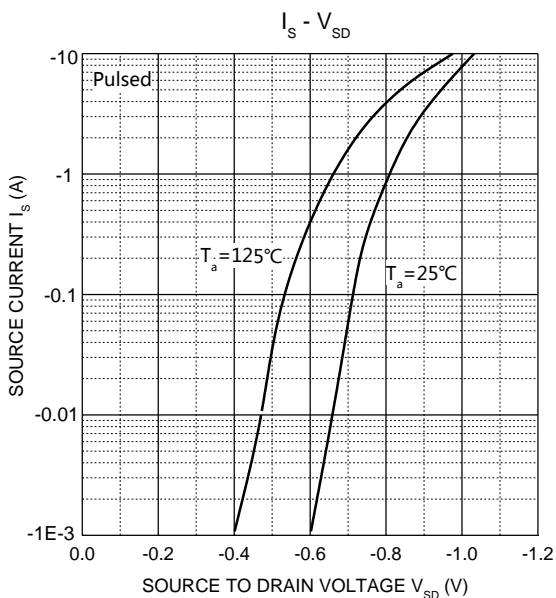
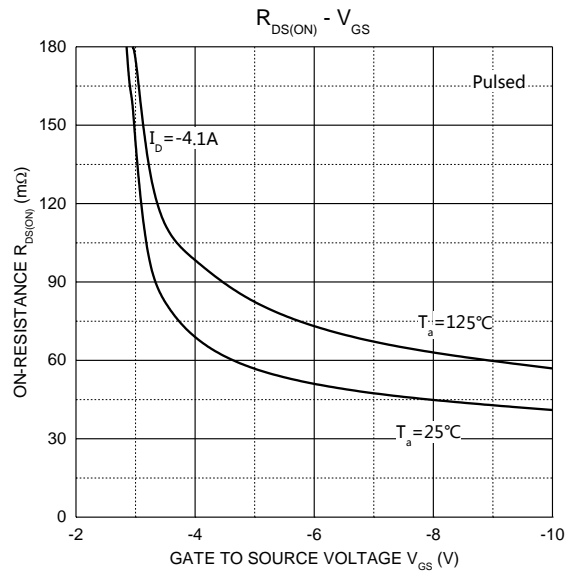
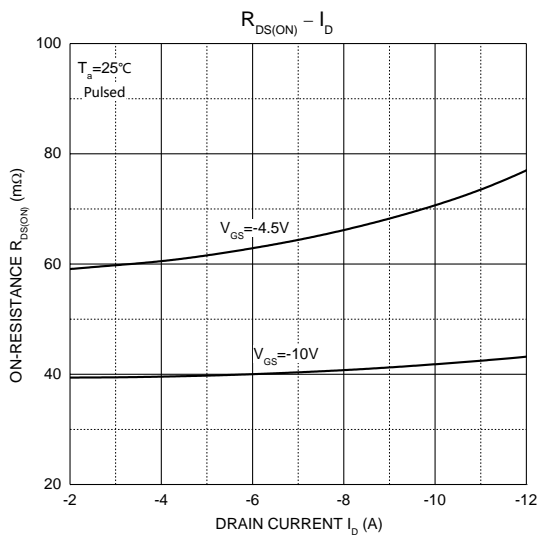
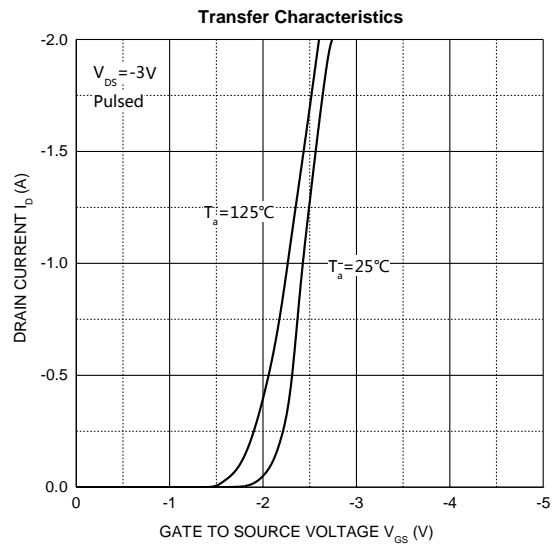
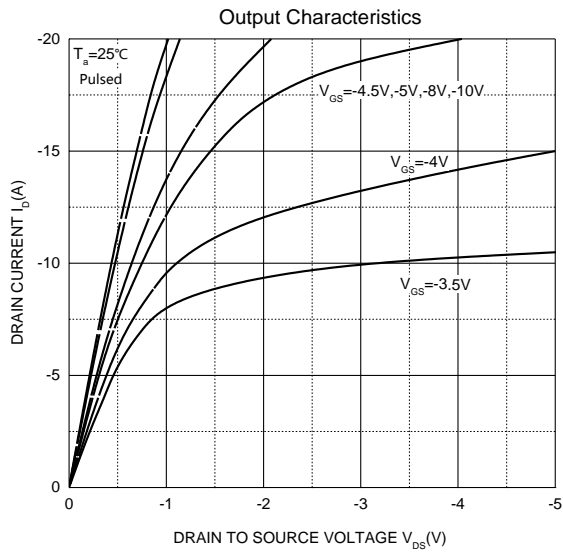
MOSFET ELECTRICAL CHARACTERISTICS ($T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Off characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	$V_{GS} = 0V, I_D = 250\mu A$	-30			V
Zero gate voltage drain current	I_{DSS}	$V_{DS} = -24V, V_{GS} = 0V$			-1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On characteristics⁽¹⁾						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	-1.0	-1.5	-2.0	V
Drain-source on-resistance	$R_{DS(on)}$	$V_{GS} = -10V, I_D = -4.6A$		42	60	m Ω
		$V_{GS} = -6V, I_D = -4.1A$		51	67	
		$V_{GS} = -4.5V, I_D = -2A$		62	105	
Forward transconductance	g_{FS}	$V_{DS} = -15V, I_D = -4.6A$	5			S
Switching characteristics⁽²⁾						
Total gate charge	Q_g	$V_{DS} = -15V, V_{GS} = -10V, I_D = -4.6A$			40	nC
Gate-source charge	Q_{gs}			4		
Gate-drain charge	Q_{gd}			6.3		
Turn-on delay time	$t_{d(on)}$	$V_{DD} = -15V, I_D = -1A,$ $V_{GS} = -10V, R_G = 6\Omega,$ $R_L = 15\Omega$			30	ns
Turn-on rise time	t_r				60	
Turn-off delay time	$t_{d(off)}$				120	
Turn-off fall time	t_f				100	
Drain-Source Diode characteristics						
Diode Forward voltage ⁽¹⁾	V_{SD}	$V_{GS} = 0V, I_S = -2.6A$			-1.2	V
Continuous drain-source diode forward current	I_S				-5.1	A
Pulsed drain-source diode forward current	I_{SM}				-20	A

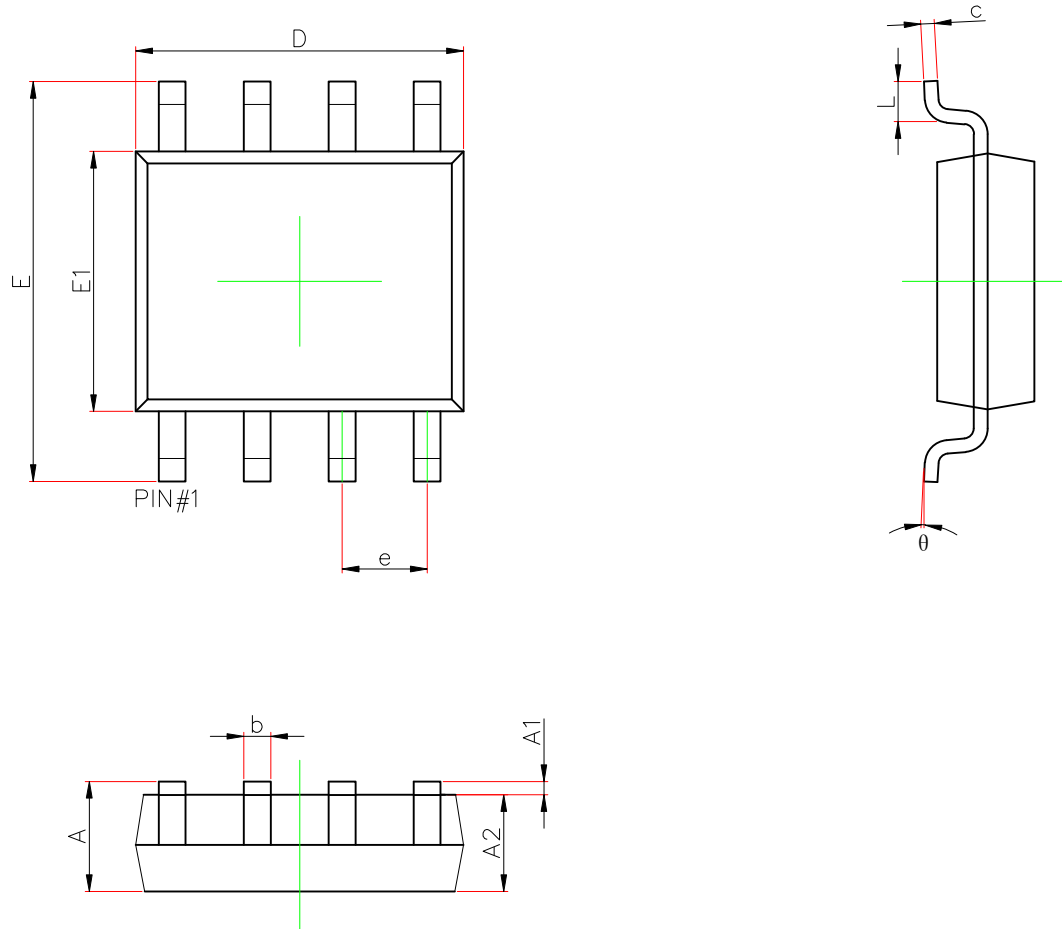
Notes:

1. Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics



SOP-8 Package Information



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	1.350	1.750	0.053	0.069
A1	0.100	0.250	0.004	0.010
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.013	0.020
c	0.156	0.250	0.006	0.010
D	4.700	5.100	0.185	0.201
e	1.270(BSC)		0.050(BSC)	
E	5.800	6.200	0.228	0.244
E1	3.700	4.100	0.146	0.161
L	0.400	1.270	0.016	0.05
theta	0°	8°	0°	8°