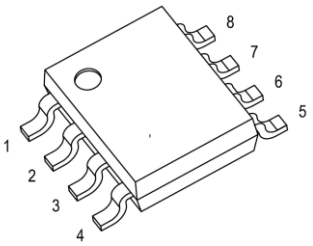
GP4435AQ

30V P-Channel MOSFET

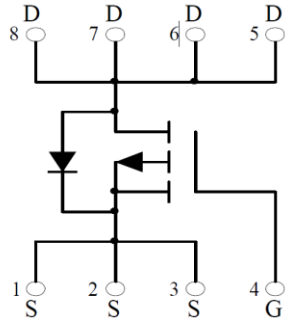
Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
-30V	14mΩ@-10V	-9.1A
	20mΩ@-4.5V	

SOP8



Schematic diagram



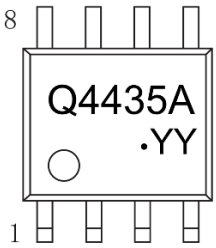
Feature

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

ApplicationS

- Load Switch for Portable Devices
- Battery Switch

MARKING:



Q4435A = Device code

YY = Date Code

Solid dot = Pin1 indicator

Solid dot = Green molding compound device,

If none, the normal device.

ABSOLUTE MAXIMUM RATINGS (T_a=25℃ 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	-9.1	A
Pulsed Drain Current	I_{DM}	-27	A
Power Dissipation	P_D	1.4	W
Thermal Resistance from Junction to Ambient(t≤10s)	$R_{\theta JA}$	89	℃/W
Junction Temperature	T_J	150	℃
Storage Temperature	T_{STG}	-55~ +150	℃

MOSFET ELECTRICAL CHARACTERISTICS (T_a=25℃ unless otherwise noted)

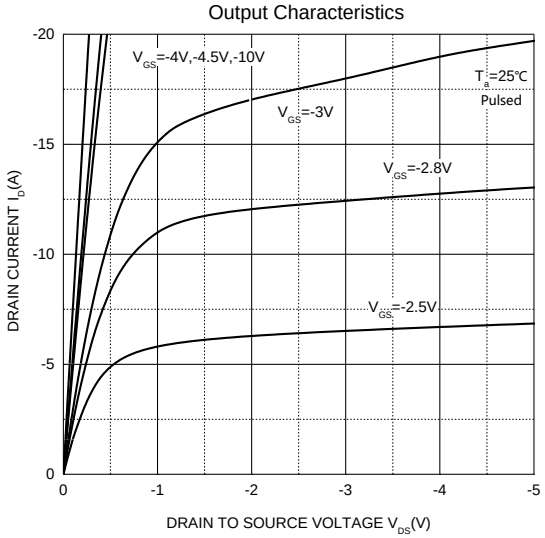
Parameter	Symbol	Test Condition	Min	Type	Max	Unit
Static Characteristics						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS} = 0V, I_D =-250μA	-30			V
Zero gate voltage drain current	I_{DSS}	V_{DS} =-30V,V_{GS} = 0V			-1	μA
Gate-body leakage current	I_{GSS}	V_{GS} =±20V, V_{DS} = 0V			±0.1	μA
On characteristics(1)						
Gate threshold voltage	$V_{GS(th)}$	V_{DS} =V_{GS}, I_D =-250μA	-1.0	-1.5	-3.0	V
Drain-source on-resistance	$R_{DS(on)}$	V_{GS} =-10V, I_D =-9.1A		14	24	mΩ
		V_{GS} =-4.5V, I_D =-6.9A		20	35	
Forward tranconductance	g_{FS}	V_{DS} =-10V, I_D =-9.1A		14		S
Dynamic characteristics(2)						
Input capacitance	C_{iss}	V_{DS} =-15V,V_{GS} =0V,f =1MHz		1700		pF
Output capacitance	C_{oss}			210		
Reverse transfer capacitance	C_{rss}			190		
Switching characteristics(2)						
Total gate charge	Q_g	V_{DS}=-15V, V_{GS}=-4.5V, I_D=-9.1A			30	nC
Gate-source charge	Q_{gs}				8.5	
Gate-drain charge	Q_{gd}				14	
Turn-on delay time	$t_{d(on)}$	V_{DD}=-15V,I_D=-1A,V_{GS}=-10V, R_G=1Ω,R_L=15Ω			18	ns
Turn-on rise time	t_r				18	
Turn-off delay time	$t_{d(off)}$				84	
Turn-off fall time	t_f				30	
Drain-Source Diode Characteristics						
Drain-source diode forward voltage(1)	V_{SD}	V_{GS} =0V, I_S=-2A			-1.2	V
Continuous drain-source diode forward current	I_S				-9.1	A
Pulsed drain-source diode forward current	I_{SM}				-27	

Notes:

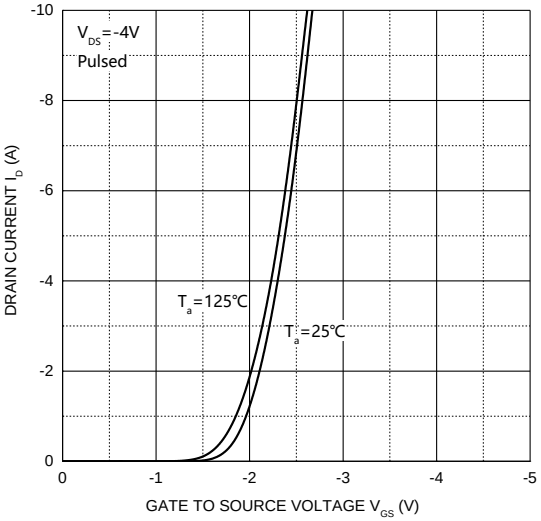
1. Pulse test; pulse width≤300μs, duty cycle≤2%.
2. Guaranteed by design, not subject to production testing.

Typical Electrical and Thermal Characteristics

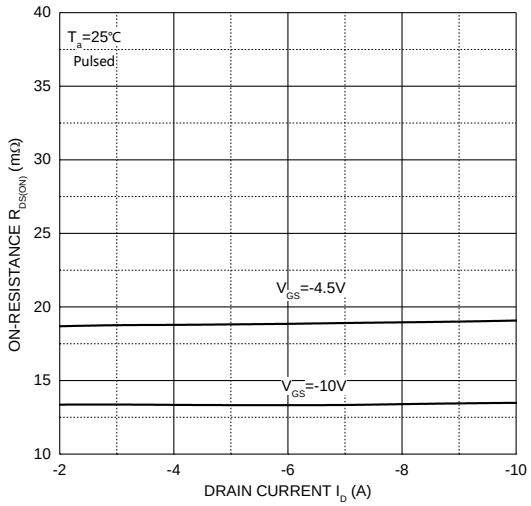
Output Characteristics



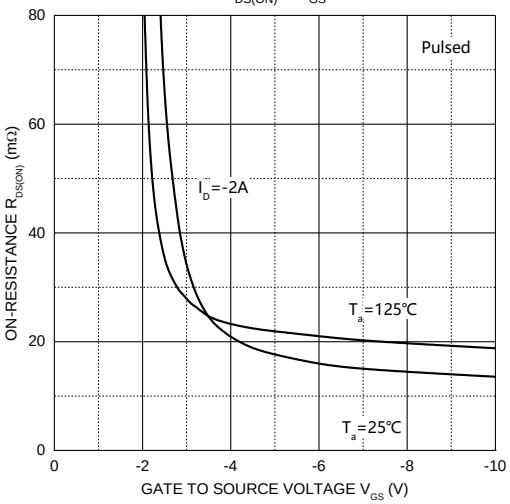
Transfer Characteristics



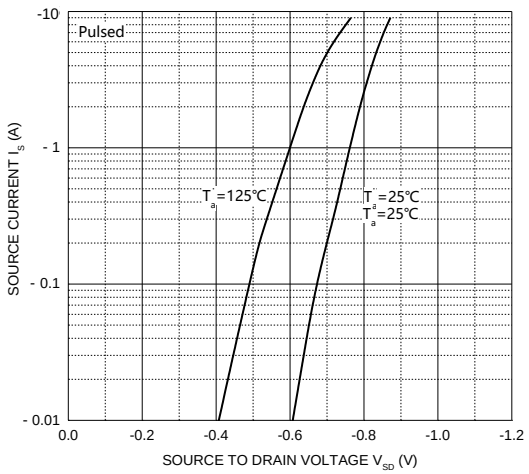
$R_{DS(ON)}$ – I_D



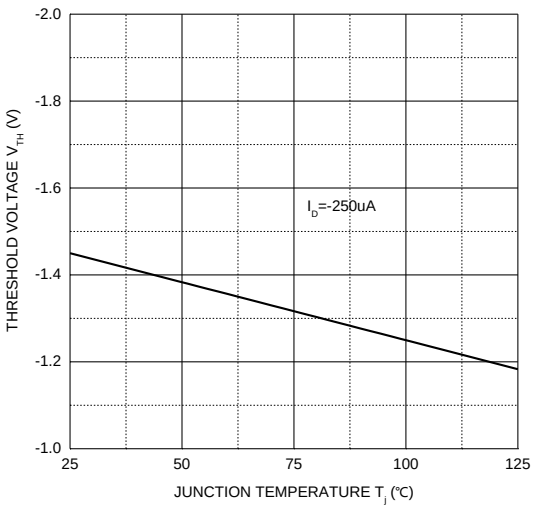
$R_{DS(ON)}$ - V_{GS}



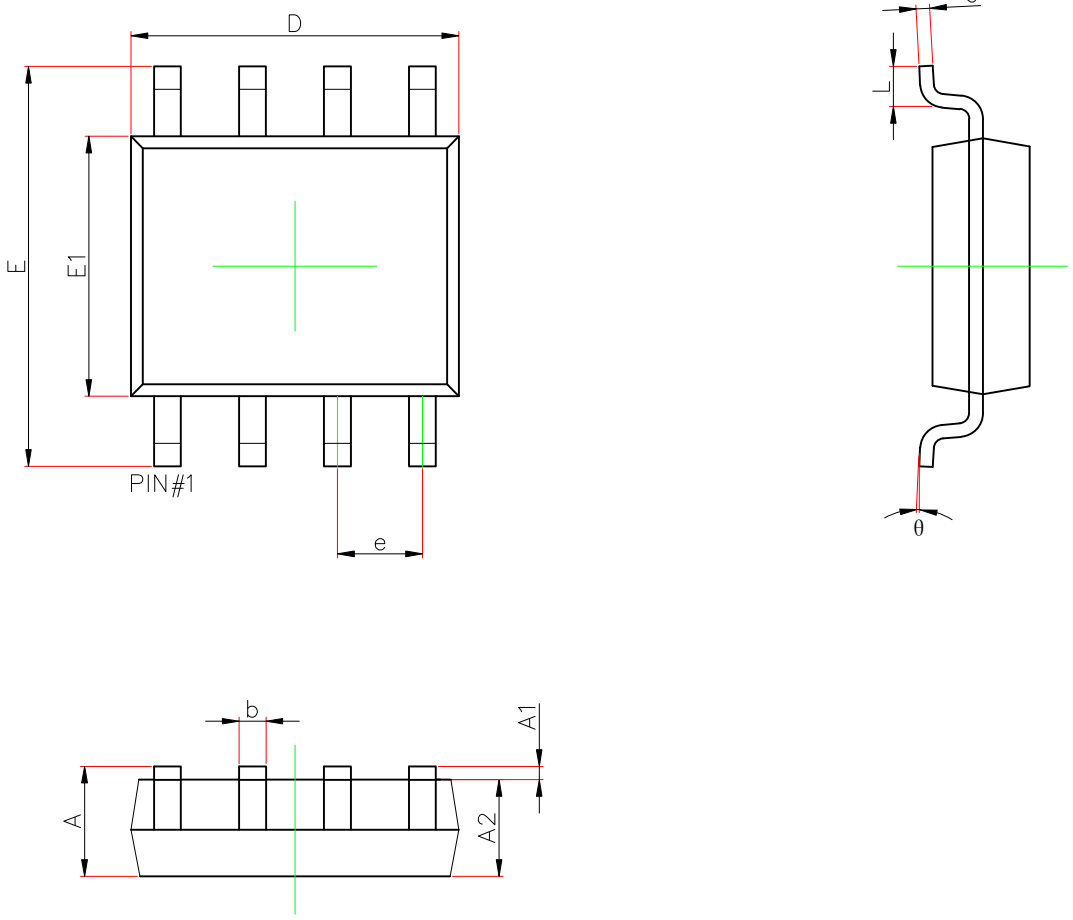
I_S - V_{SD}



Threshold Voltage



SOP8 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
θ	0°	8°	0°	8°