

Features

- Advanced Trench MOSFET Process Technology
- Epoxy Meets UL 94 V-0 Flammability Rating
- Moisture Sensitivity Level 1
- Halogen Free. "Green" Device (Note 1)
- Lead Free Finish/RoHS Compliant ("P" Suffix Designates RoHS Compliant. See Ordering Information)

Maximum Ratings

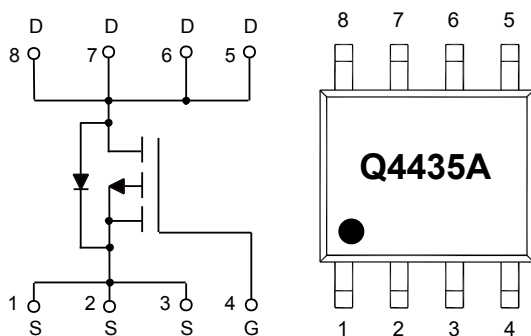
- Operating Junction Temperature Range: -55°C to +150°C
- Storage Temperature Range: -55°C to +150°C
- Thermal Resistance: 89°C/W Junction to Ambient^(Note2)
- Thermal Resistance: 27.8°C/W Junction to Case

Parameter	Symbol	Rating	Unit	
Drain -Source Voltage	V_{DS}	-30	V	
Gate -Source Voltage	V_{GS}	±20	V	
Drain Current-Continuous	$T_A=25\text{ }^\circ\text{C}$	I_D	-10	A
	$T_A=85\text{ }^\circ\text{C}$		-7	A
Drain Current-Pulsed ^(Note3)	I_{DM}	-36	A	
Power Dissipation ^(Note4)	P_D	4.5	W	
Single Pulsed Avalanche Energy ^(Note5)	E_{AS}	20	mJ	

Note:

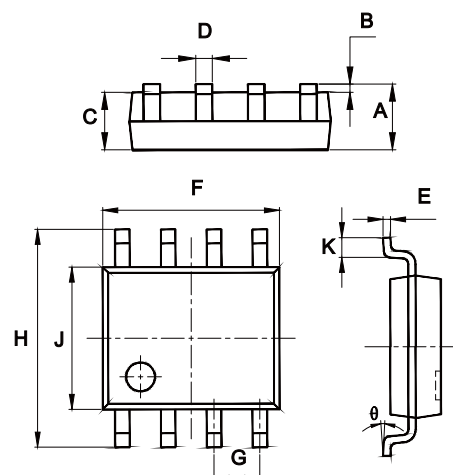
1. Halogen free "Green" products are defined as those which contain <900ppm bromine, <900ppm chlorine (<1500ppm total Br + Cl) and <1000ppm antimony compounds.
2. The value of $R_{\theta JA}$ is measured with the device mounted on 1 in² FR-4 board with 2oz. copper, in a still air environment with $T_A=25^\circ\text{C}$.
3. Repetitive rating; pulse width limited by max. junction temperature.
4. PD is based on max. junction temperature, using junction-case thermal resistance.
5. $V_{DD}=50\text{V}$, $R_G=25\Omega$, $L=0.5\text{mH}$, starting $T_J=25^\circ\text{C}$.

Internal Structure and Marking Code



P-Channel Power MOSFET

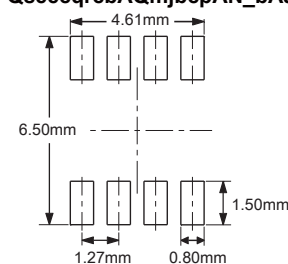
SOP-8



DIMENSIONS

DIM	INCHES		MM		NOTE
	MIN	MAX	MIN	MAX	
A	0.053	0.069	1.35	1.75	
B	0.004	0.010	0.10	0.25	
C	0.053	0.061	1.35	1.55	
D	0.013	0.020	0.33	0.51	
E	0.007	0.010	0.17	0.25	
F	0.185	0.200	4.70	5.10	
G	0.050		1.270		TYP.
H	0.228	0.244	5.80	6.20	
J	0.150	0.157	3.80	4.00	
K	0.016	0.050	0.40	1.27	
θ	0°	8°	0°	8°	

QseecqrcbAQmjbcpAN_bAJ_wmsr



ELECTRICAL CHARACTERISTICS (T_A=25°C unless otherwise specified)

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Static Characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-250μA	-30			V
Gate-Threshold Voltage ^(Note6)	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.7	-3.0	V
Gate-Body Leakage Current	I _{GSS}	V _{GS} =± 20V, V _{DS} =0V			±100	nA
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-30V, V _{GS} =0V			-1.0	μA
Drain-Source On-Resistance ^(Note6)	R _{DS(on)}	V _{GS} =-10V, I _D =-5.0A		14	24	mΩ
		V _{GS} =-4.5V, I _D =-5.0A		23	35	
Forward Transconductance ^(Note6)	g _{FS}	V _{DS} =-10V, I _D =-9.1A	20			S
Dynamic Characteristics^(Note7)						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V, f=1MHz		1350		pF
Output Capacitance	C _{oss}			215		
Reverse Transfer Capacitance	C _{rss}			185		
Switching Characteristics^(Note7)						
Turn-On Delay Time	t _{d(on)}	V _{DD} =-15V, I _D =-1.0A, V _{GS} =-10V , R _{GEN} =1Ω, R _L =15Ω			15	ns
Turn-On Rise Time	t _r				15	
Turn-Off Delay Time	t _{d(off)}				70	
Turn-Off Fall Time	t _f				25	
Gate Resistance	R _g	V _{DS} =0V, V _{GS} =0V, f=1MHz		5.8		Ω
Total Gate Charge	Q _g	V _{DS} =-15V, I _D =-9.1A, V _{GS} =-10V			50	nC
		V _{DS} =-15V, I _D =-9.1A, V _{GS} =-4.5V			25	
Gate-Source Charge	Q _{gs}	V _{DS} =-15V, I _D =-9.1A, V _{GS} =-4.5V		4.0		
Gate-Drain Charge	Q _{gd}	V _{DS} =-15V, I _D =-9.1A, V _{GS} =-4.5V		7.5		
Drain-Source Diode Characteristics						
Diode Forward Voltage ^(Note6)	V _{SD}	V _{GS} =0V, I _S =-2A			-1.2	V
Continuous Drain-Source Diode Forward Current	I _S				-10	A
Pulsed Drain-Source Diode Forward Current	I _{SM}				-36	A

Note:

6.Pulse Test : Pulse Width≤300μs, duty cycle ≤2%.

7.Guaranteed by design, not subject to production testing.

Curve Characteristics

Fig. 1 - Output Characteristics

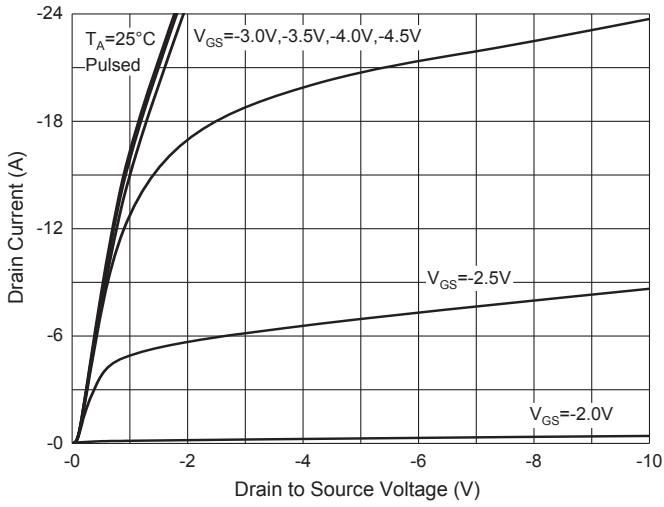


Fig. 2 - Transfer Characteristics

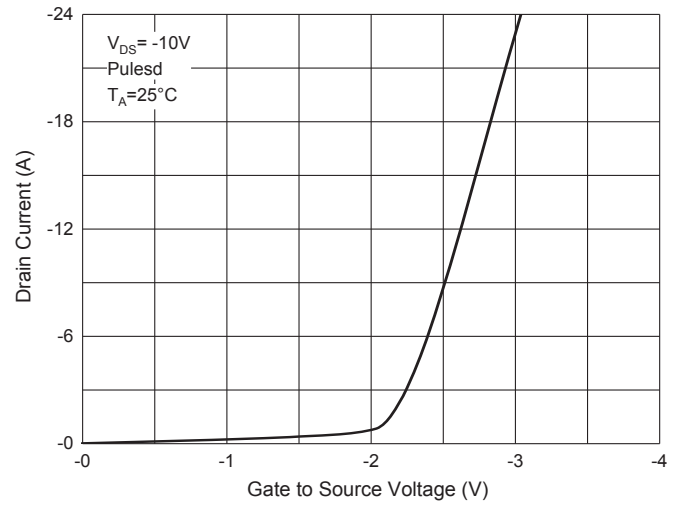


Fig. 3 - $R_{DS(ON)} - I_D$

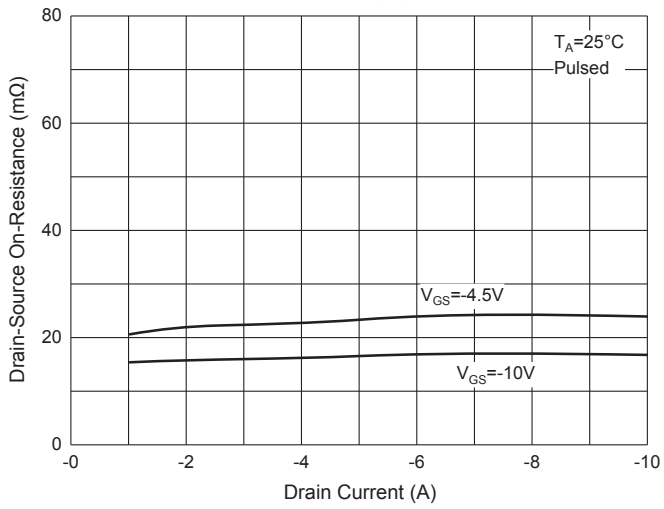


Fig. 4 - $R_{DS(ON)} - V_{GS}$

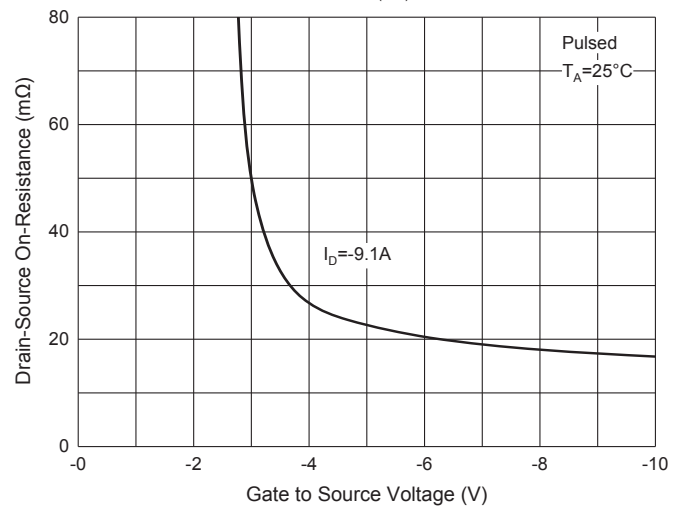


Fig. 5 - Threshold Voltage

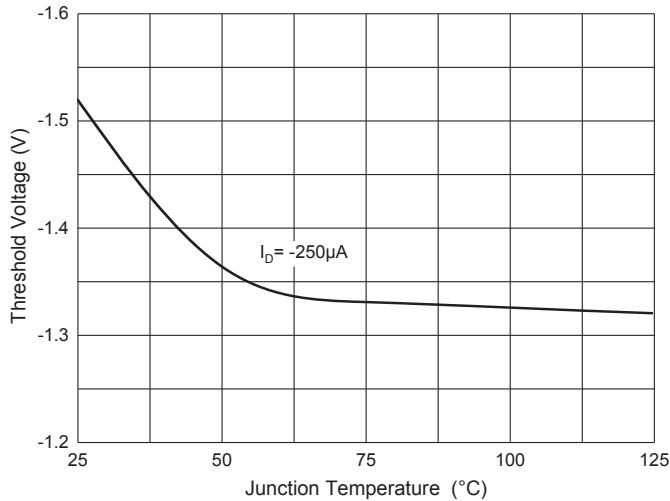


Fig. 6 - $I_S - V_{SD}$

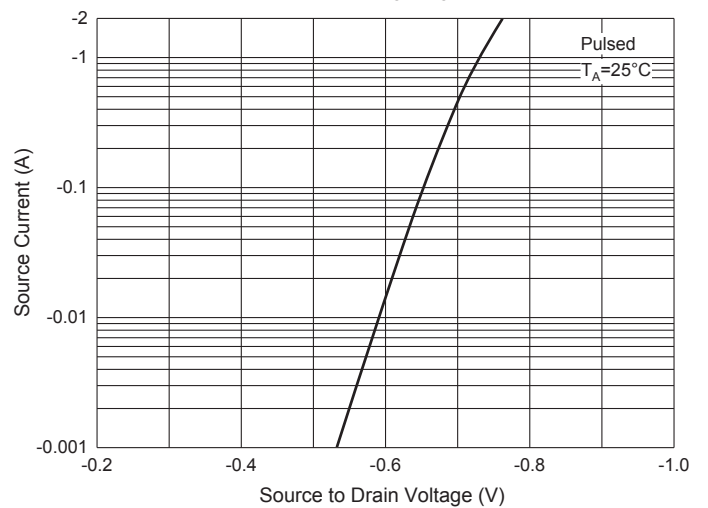


Fig.7-Safe Operation Area

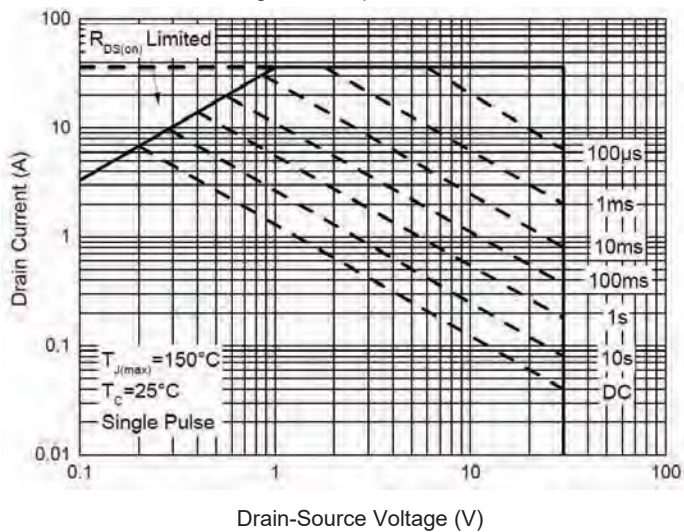
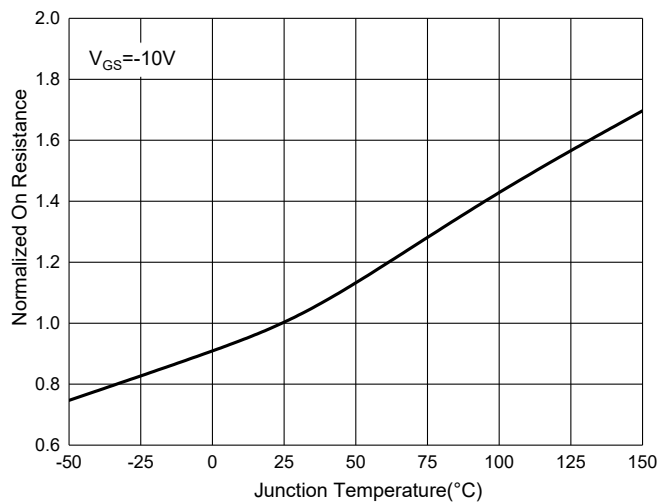


Fig. 8 - Normalized On Resistance Characteristics



Ordering Information

Device	Packing
Part Number-TP	Tape&Reel:4Kpcs/Reel

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