

Features

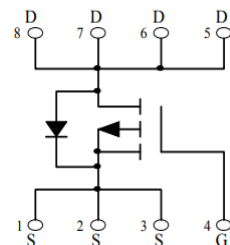
- Excellent package for good heat dissipation
- Ultra low gate charge
- Low reverse transfer capacitance
- Fast switching capability
- Avalanche energy specified

Application

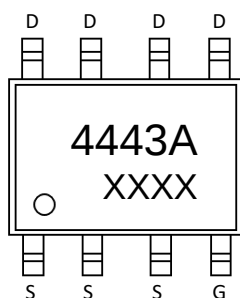
- Power switching application

Product Summary

V_{DS}	$R_{DS(ON)}$ TYP	I_D
-40V	35mΩ@-10V	-6A
	46.5mΩ@-4.5V	



Schematic diagram



Marking and pin assignment

4443A : Device code
 XXXX : Code



Halogen-Free

Absolute Maximum Ratings (TA=25°C unless otherwise noted)

Symbol	Parameter	Rating	Unit
--------	-----------	--------	------

Common Ratings (TC=25°C Unless Otherwise Noted)

V_{DS}	Drain-Source Breakdown Voltage	-40	V
V_{GS}	Gate-Source Voltage	±20	V
T_J	Maximum Junction Temperature	150	°C
T_{STG}	Storage Temperature Range	-55 to 150	°C
I_S	Diode Continuous Forward Current	$T_C=25^\circ\text{C}$ -6	A

Mounted on Large Heat Sink

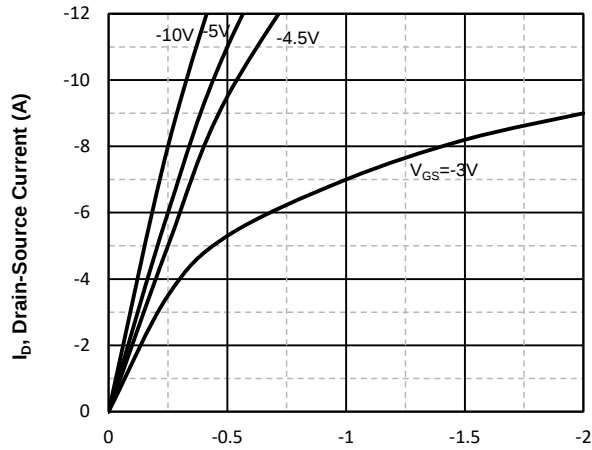
I_{DM}	Pulse Drain Current Tested	$T_C=25^\circ\text{C}$ -24	A
I_D	Continuous Drain Current	$T_C=25^\circ\text{C}$ -6	A
P_D	Maximum Power Dissipation	$T_C=25^\circ\text{C}$ 0.5	W
$R_{\theta JA}$	Thermal Resistance Junction-Ambient	175	°C/W

Ordering Information (Example)

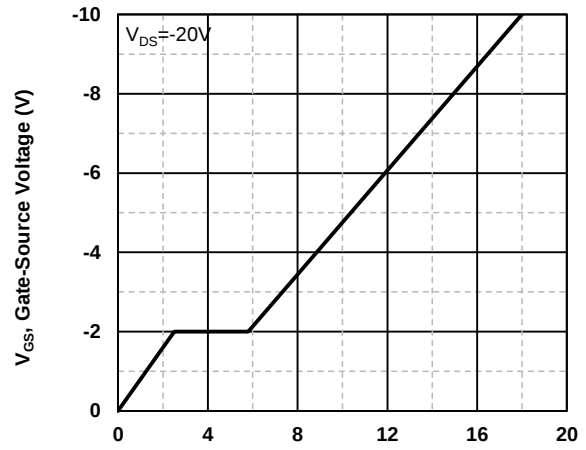
Type	Package	Marking	Minimum Package(pcs)	Inner Box Quantity(pcs)	Outer Carton Quantity(pcs)	Delivery Mode
MQ4443A	SOP-8	4443A	3,000	6,000	42,000	13"reel

Electrical Characteristics (TJ=25℃ unless otherwise noted)						
Symbol	Parameter	Condition	Min	Typ	Max	Unit
Static Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
BV _{(BR)DSS}	Drain-Source Breakdown Voltage	V _{GS} =0V, I _D =-250μA	-40	--	--	V
I _{DSS}	Zero Gate Voltage Drain Current	V _{DS} =-40V, V _{GS} =0V	--	--	-1	μA
I _{GSS}	Gate-Body Leakage Current	V _{GS} =±20V, V _{DS} =0V	--	--	±100	nA
V _{GS(th)}	Gate Threshold Voltage	V _{DS} =V _{GS} , I _D =-250μA	-1.0	-1.7	-2.5	V
R _{DS(on)}	Drain-Source On-State Resistance	V _{GS} =-10V, I _D =-6A	--	35	42	mΩ
		V _{GS} =-4.5V, I _D =-5A	--	46.5	63	mΩ
Dynamic Electrical Characteristics @ TJ = 25℃ (unless otherwise stated)						
C _{ISS}	Input Capacitance	V _{DS} =-25V, V _{GS} =0V, f=1MHz	--	1005	--	pF
C _{OSS}	Output Capacitance		--	110	--	pF
C _{RSS}	Reverse Transfer Capacitance		--	80	--	pF
Switching Characteristics						
Q _g	Total Gate Charge	V _{DD} =-25V, I _D =-6A, V _{GS} =-10V	--	8.5	--	nC
Q _{gs}	Gate Source Charge		--	2.5	--	nC
Q _{gd}	Gate Drain Charge		--	3.1	--	nC
t _{d(on)}	Turn-on Delay Time	V _{DD} =-25V, I _D =-6A, V _{GS} =-10V, R _G =6Ω	--	19.5	--	nS
t _r	Turn-on Rise Time		--	13	--	nS
t _{d(off)}	Turn-Off Delay Time		--	48.5	--	nS
t _f	Turn-Off Fall Time		--	4.5	--	nS
Source- Drain Diode Characteristics						
V _{SD}	Forward on voltage	Tj=25℃, Is=-6A	--	--	-1.2	V

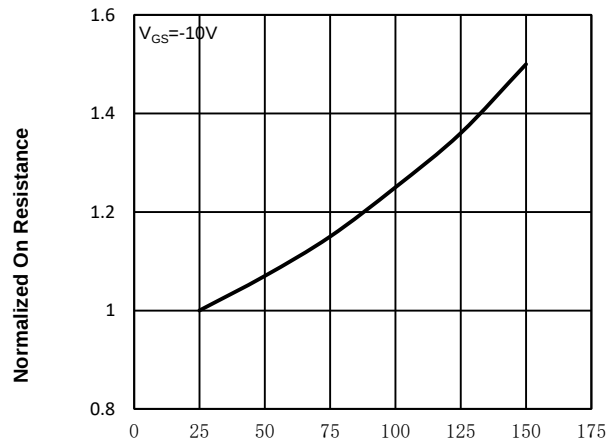
Typical Operating Characteristics



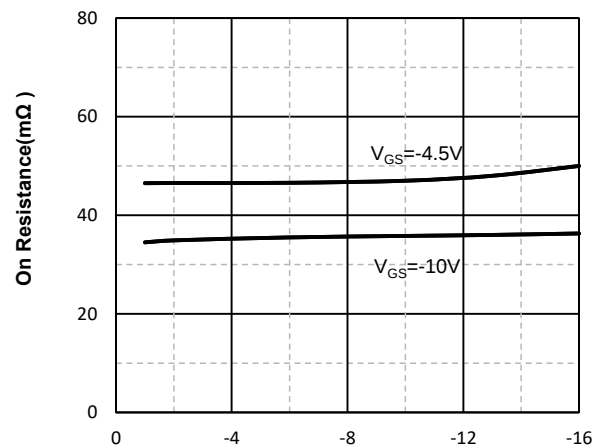
V_{DS} , Drain -Source Voltage (V)
Fig1. Typical Output Characteristics



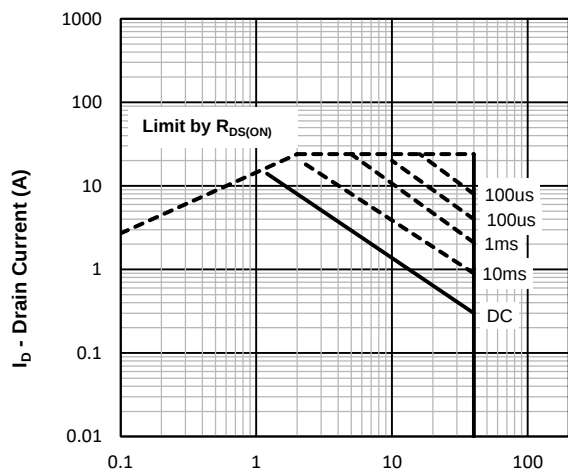
Q_g -Total Gate Charge (nC)
Fig2. Typical Gate Charge Vs. Gate-Source Voltage



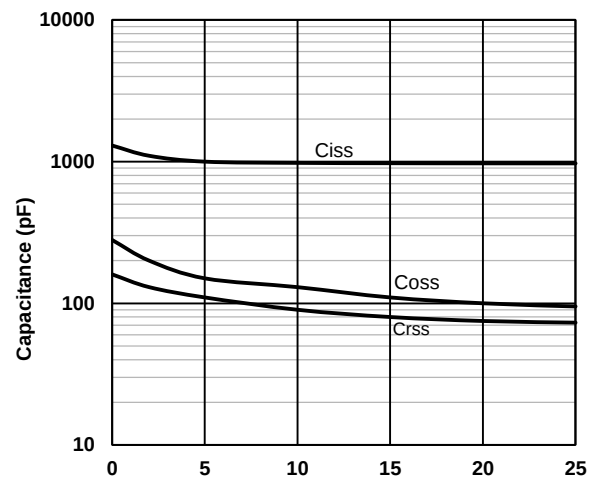
T_J - Junction Temperature ($^{\circ}\text{C}$)
Fig3. Normalized On-Resistance Vs. Temperature



I_D , Drain-Source Current (A)
Fig4. On-Resistance Vs. Drain-Source Current



V_{DS} , Drain -Source Voltage (V)
Fig5. Maximum Safe Operating Area



V_{DS} , Drain-Source Voltage (V)
Fig6 Typical Capacitance Vs. Drain-Source Voltage

SOP-8 Package information



Symbol	Dimensions in Millimeters(mm)		Dimensions In Inches	
	Min	Max	Min	Max
A	1.450	1.750	0.057	0.068
A1	0.100	0.250	0.003	0.009
A2	1.350	1.550	0.053	0.061
b	0.330	0.510	0.012	0.020
c	0.170	0.250	0.006	0.009
D	4.700	5.100	0.185	0.200
e	1.270(BSC)		0.050(BSC)	
E	3.800	4.000	0.149	0.157
E1	5.800	6.200	0.228	0.244
L	0.400	1.270	0.015	0.050
θ	0°	8°	0°	8°