



Product Summary

$V_{(BR)DSS}$	$R_{DS(on)TYP}$	I_D
30V	26m Ω @10V	4A
	43m Ω @4.5V	

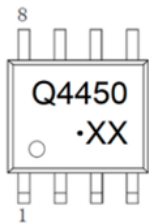
Feature

- Trench Technology Power MOSFET
- LOW $R_{DS(ON)}$
- Low Gate Charge

Application

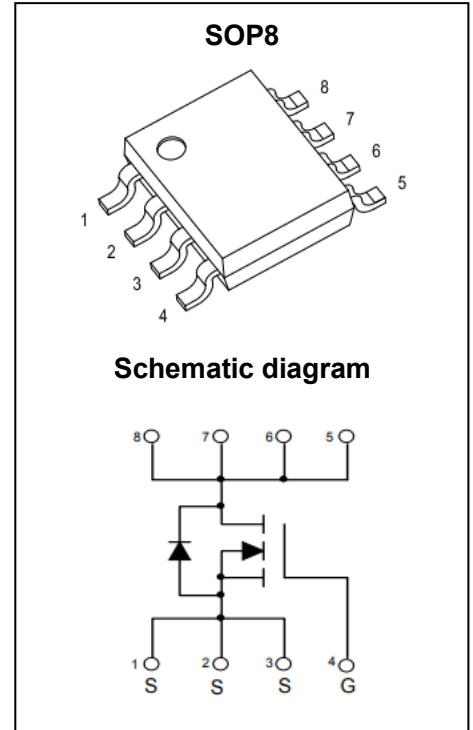
- Load Switch
- DC/DC Converter

MARKING:



Q4450 = Device Code

XX = Date Code



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

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current ^{1,5}	I_D	4	A
Pulsed Drain Current ²	I_{DM}	16	A
Power Dissipation ^{4,5}	P_D	1.4	W
Thermal Resistance from Junction to Ambient ⁵	$R_{\theta JA}$	90	$^\circ\text{C}/\text{W}$
Junction Temperature	T_J	150	$^\circ\text{C}$
Storage Temperature	T_{STG}	-55~ +150	$^\circ\text{C}$

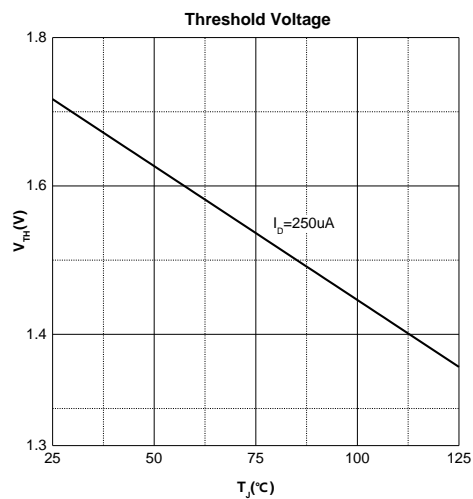
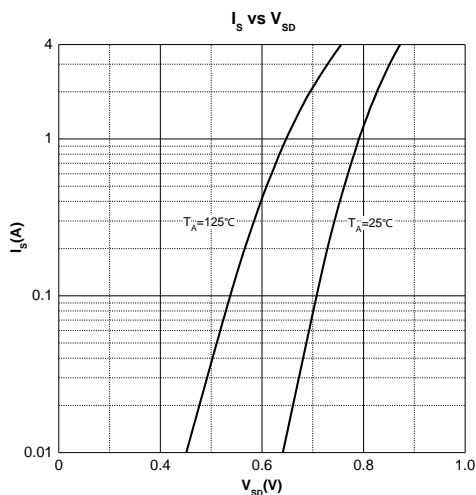
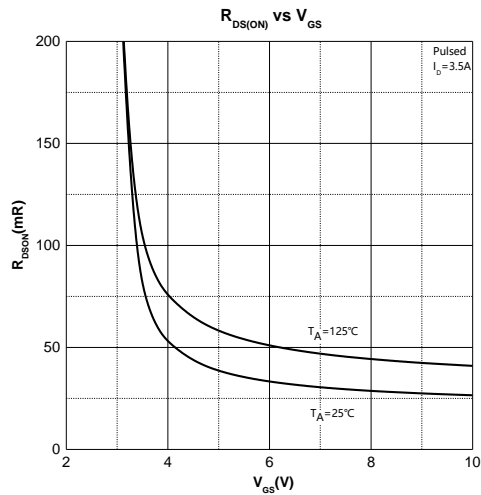
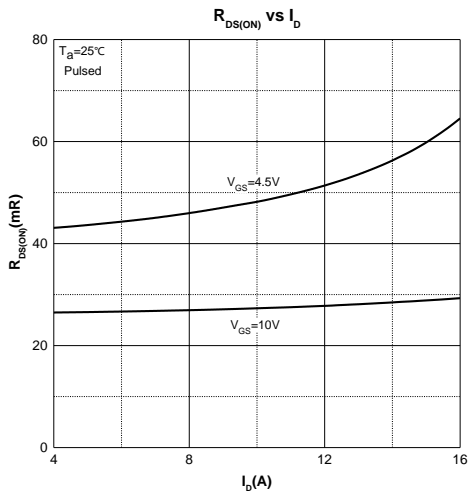
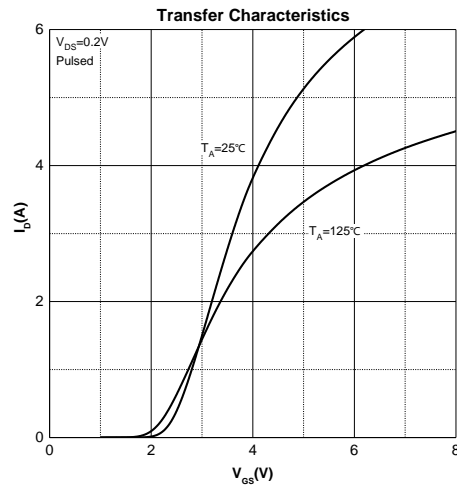
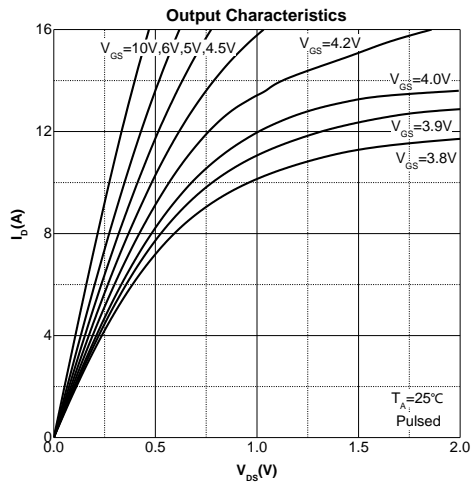
MOSFET ELECTRICAL CHARACTERISTICS ($T_A = 25^\circ\text{C}$ unless otherwise noted)

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}	$V_{DS} = 30V, V_{GS} = 0V$			1	μA
Gate-body leakage current	I_{GSS}	$V_{GS} = \pm 20V, V_{DS} = 0V$			± 100	nA
On Characteristics³						
Gate threshold voltage	$V_{GS(th)}$	$V_{DS} = V_{GS}, I_D = 250\mu A$	1	1.7	2.5	V
Drainsource onresistance	$R_{DS(on)}$	$V_{GS} = 10V, I_D = 4A$		26	35	m Ω
		$V_{GS} = 4.5V, I_D = 3A$		43	55	
Forward transconductance	g_{FS}	$V_{DS} = 5V, I_D = 3A$	4			S
Dynamic Characteristics						
Input Capacitance	C_{iss}	$V_{DS} = 20V, V_{GS} = 0V, f = 1MHz$		295		pF
Output Capacitance	C_{oss}			42		
Reverse Transfer Capacitance	C_{rss}			34		
Gate resistance	R_g	$V_{DS} = 0V, V_{GS} = 0V, f = 1MHz$		1.5		Ω
Switching Characteristics						
Total Gate Charge	Q_g	$V_{DS} = 15V, V_{GS} = 10V, I_D = 4A$		4		nC
GateSource Charge	Q_{gs}			1.3		
GateDrain Charge	Q_{gd}			1.6		
Turnon delay time	$t_{d(on)}$	$V_{DD} = 15V, R_G = 2\Omega, V_{GS} = 10V, R_L = 3\Omega$		4.6		ns
Turnon rise time	t_r			2.7		
Turnoff delay time	$t_{d(off)}$			15		
Turnoff fall time	t_f			3.8		
Diode Characteristics						
Diode Forward Voltage ³	V_{SD}	$V_{GS} = 0V, I_S = 4A$			1.2	V

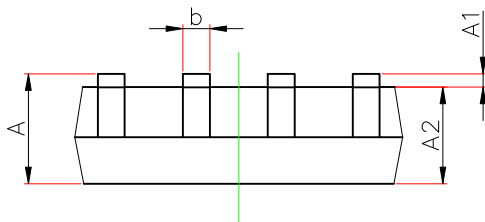
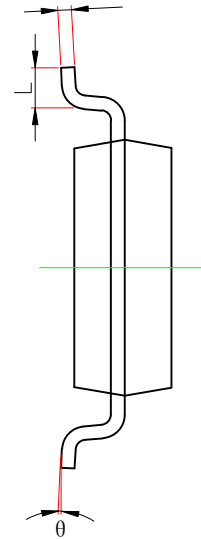
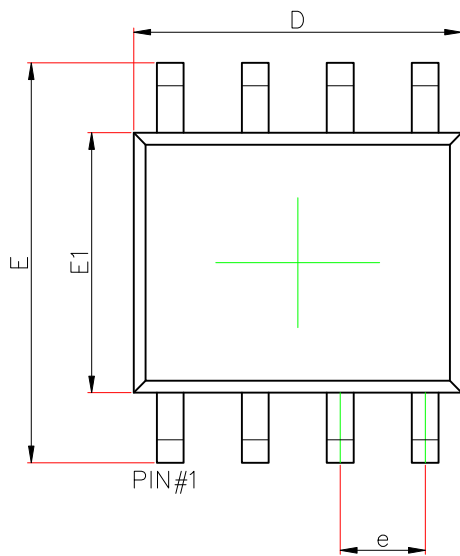
Notes :

- 1.The maximum current rating is limited by package.
- 2.Pulse Test : Pulse Width $\leq 10\mu s$, duty cycle $\leq 1\%$.
- 3.Pulse Test : Pulse Width $\leq 300\mu s$, duty cycle $\leq 2\%$.
- 4.The power dissipation P_D is limited by $T_{J(MAX)} = 150^\circ\text{C}$.
- 5.Device mounted on $1in^2$ FR-4 board with 2oz. Copper, in a still air environment with $T_A = 25^\circ\text{C}$.

Typical Characteristics



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°