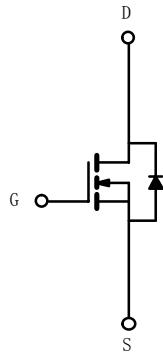
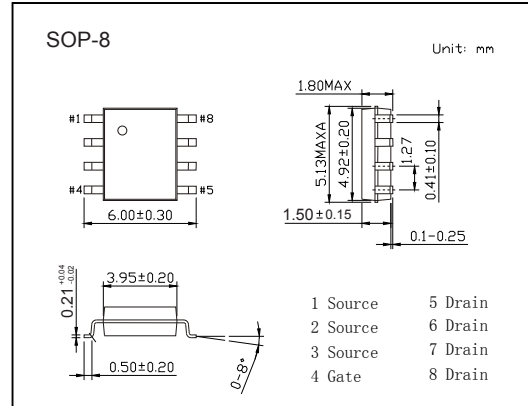


## N-Channel MOSFET

### SI4410DY-HF (KI4410DY-HF)

#### ■ Features

- $V_{DS} (V) = 30V$
- $I_D = 10 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 13.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 20m\Omega (V_{GS} = 4.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	30	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	
Continuous Drain Current (Note.1)	$I_D$	$T_A=25^\circ C$	10
		$T_A=70^\circ C$	8
Pulsed Drain Current	$I_{DM}$	50	A
Power Dissipation	$P_D$	$T_A=25^\circ C$	2.5
		$T_A=70^\circ C$	1.6
Thermal Resistance.Junction- to-Ambient (Note.1)	$R_{thJA}$	50	$^\circ C/W$
Thermal Resistance.Junction- to-Case	$R_{thJC}$	22	
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	

Note.1:Surface Mounted on FR4 Board,  $t \leq 10$  sec.

## N-Channel MOSFET

### SI4410DY-HF (KI4410DY-HF)

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μA, V <sub>GS</sub> =0V	30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =30V, V <sub>GS</sub> =0V			1	μA
		V <sub>DS</sub> =30V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			25	
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250 μA	1		3	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =10A (Note.1)			13.5	mΩ
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =5A (Note.1)			20	
On State Drain Current	I <sub>D(ON)</sub>	V <sub>GS</sub> =5V, V <sub>DS</sub> =10V (Note.1)	20			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =15V, I <sub>D</sub> =5A (Note.1)		38		S
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	0.5		2.6	Ω
Gate Charge	Q <sub>g</sub>	V <sub>DS</sub> = 15 V, V <sub>GS</sub> = 5 V, I <sub>D</sub> = 10 A		20	34	nC
Total Gate Charge	Q <sub>gt</sub>			37	60	
Gate Source Charge	Q <sub>gs</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =15V, I <sub>D</sub> =10A		7		
Gate Drain Charge	Q <sub>gd</sub>			7		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =25V, I <sub>D</sub> =1A R <sub>L</sub> =25Ω, R <sub>GEN</sub> =6Ω			30	ns
Turn-On Rise Time	t <sub>r</sub>				20	
Turn-Off DelayTime	t <sub>d(off)</sub>				100	
Turn-Off Fall Time	t <sub>f</sub>				80	
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 2.3A, di/dt= 100A/μs			80	
Maximum Body-Diode Continuous Current	I <sub>S</sub>				2.3	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =2.3A, V <sub>GS</sub> =0V (Note.1)			1.1	V

Note.1: Pulse test; pulse width ≤ 300us, duty cycle ≤ 2%.

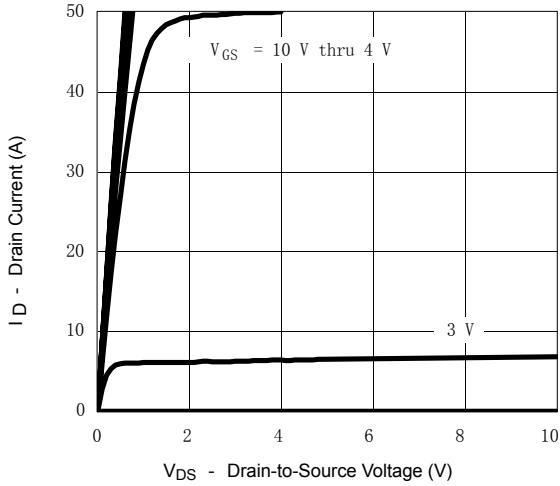
#### ■ Marking

Marking	4410 KC**** <sub>F</sub>
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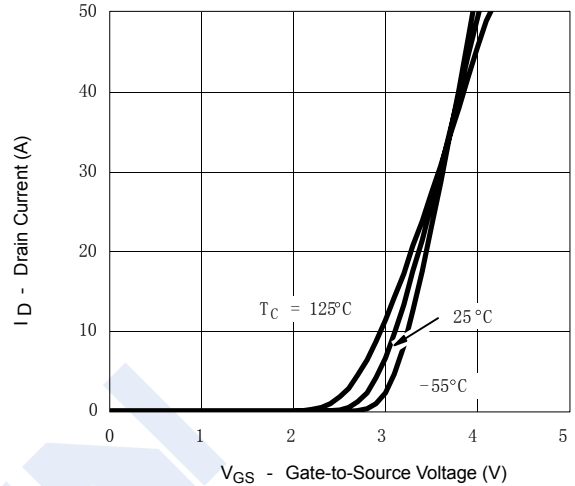
## N-Channel MOSFET SI4410DY-HF (KI4410DY-HF)

■ Typical Characteristics

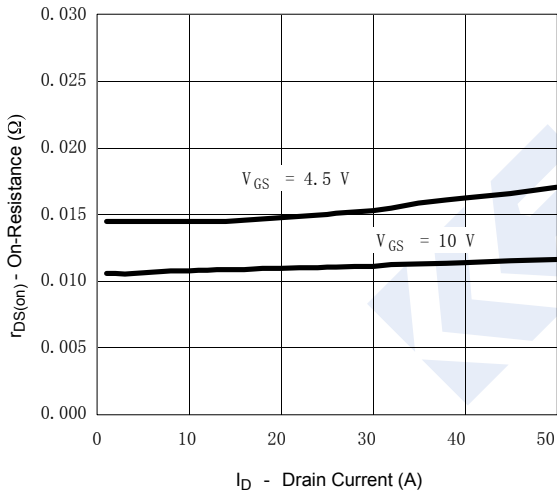
Output Characteristics



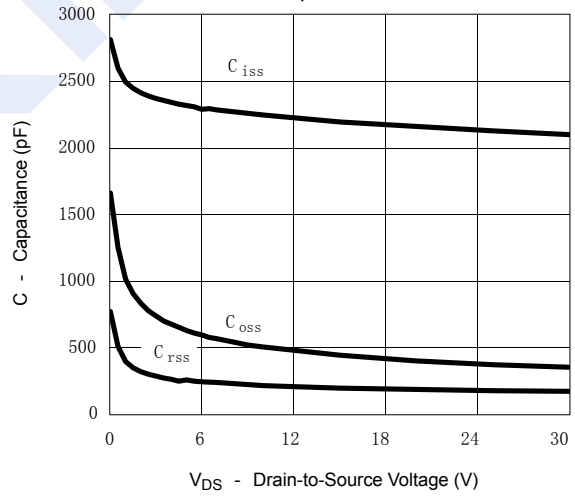
Transfer Characteristics



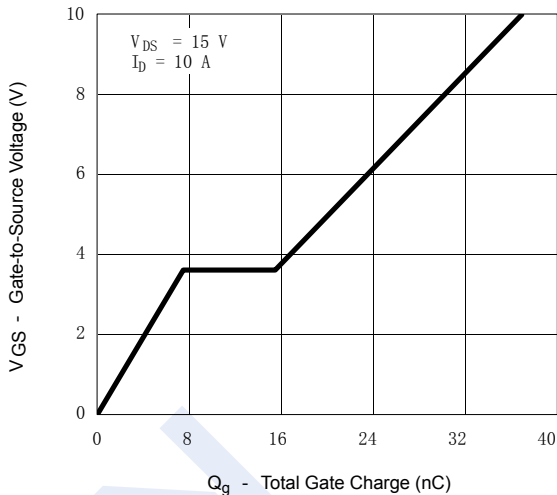
On-Resistance vs. Drain Current



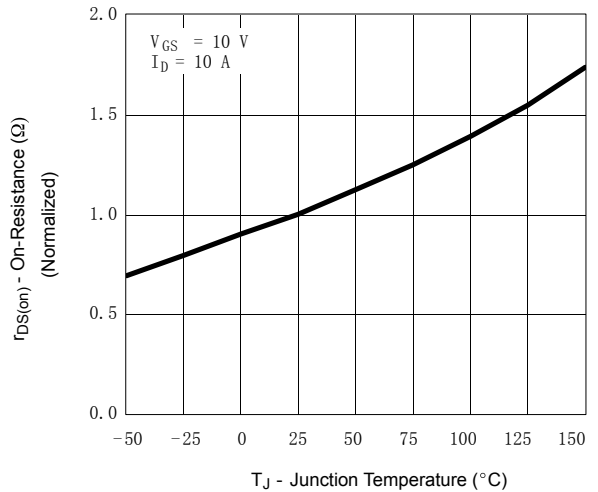
Capacitance



Gate Charge



On-Resistance vs. Junction Temperature



## N-Channel MOSFET SI4410DY-HF (KI4410DY-HF)

■ Typical Characteristics

