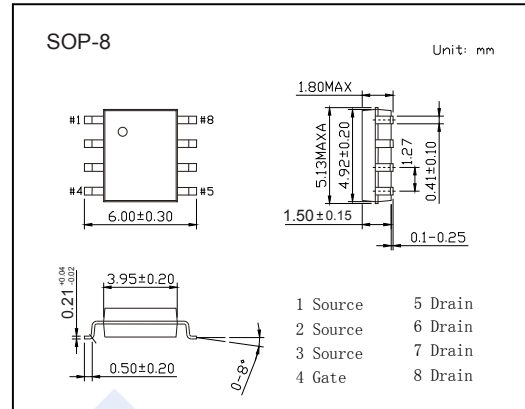
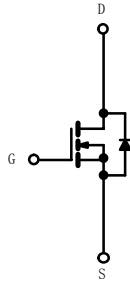


N-Channel MOSFET

SI4490DY (KI4490DY)

■ Features

- $V_{DS} (V) = 200V$
- $I_D = 4A (V_{GS} = 10V)$
- $R_{DS(ON)} < 80m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 90m\Omega (V_{GS} = 6V)$



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

Parameter		Symbol	10S	Steady State	Unit
Drain-Source Voltage		V_{DS}	200		V
Gate-Source Voltage		V_{GS}	± 20		
Continuous Drain Current ($T_J=150^\circ C$) *1	$T_A=25^\circ C$	I_D	4	2.85	A
	$T_A=70^\circ C$		3.2	2.3	
Pulsed Drain Current		I_{DM}	40		
Avalanch Current		$L=0.1mH$	15		
Power Dissipation *1	$T_A=25^\circ C$	P_D	3.1	1.56	W
	$T_A=70^\circ C$		2	1	
Thermal Resistance.Junction- to-Ambient *1		R_{thJA}	40	80	$^\circ C/W$
Thermal Resistance.Junction- to-Foot		R_{thJF}		21	
Junction Temperature		T_J	150		$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150		

*1: Surface Mounted on 1" x 1" FR4 board.

■ Marking

Marking	4490
	KC****

N-Channel MOSFET

SI4490DY (KI4490DY)

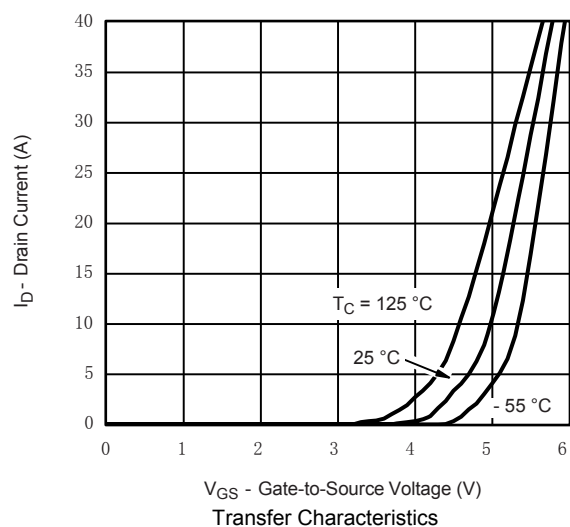
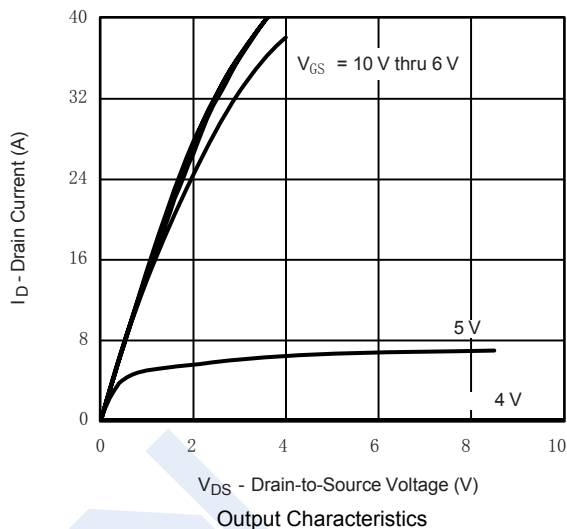
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	200			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =160V, V _{GS} =0V			1	μA
		V _{DS} =160V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	2			V
Static Drain-Source On-Resistance *1	R _{DS(on)}	V _{GS} =10V, I _D =4A		65	80	mΩ
		V _{GS} =6V, I _D =4A		70	90	
On State Drain Current	I _{D(on)}	V _{GS} =10V, V _{DS} ≥ 5V	40			A
Forward Transconductance *1	g _{FS}	V _{DS} =15V, I _D =5A		19		S
Gate Resistance *2	R _g		0.2	0.85	1.3	Ω
Total Gate Charge	Q _g			34	42	nC
Gate Source Charge	Q _{gs}	V _{GS} =10V, V _{DS} =100V, I _D =4A *2		7.5		
Gate Drain Charge	Q _{gd}			12		
Turn-On DelayTime	t _{d(on)}			14	20	ns
Turn-On Rise Time	t _r	V _{GS} =10V, V _{DS} =100V, R _L =25Ω,		20	30	
Turn-Off DelayTime	t _{d(off)}	R _G =6Ω, I _D =4A *2		32	50	
Turn-Off Fall Time	t _f			25	35	
Body Diode Reverse Recovery Time	t _{rr}	I _F =2.8A, di/dt=100A/μs		70	100	
Maximum Body-Diode Continuous Current	I _S				2.8	A
Diode Forward Voltage *1	V _{SD}	I _S =2.8A, V _{GS} =0V		0.75	1.2	V

*1: Pulse test; pulse width ≤ 300 μs, duty cycle ≤ 2%.

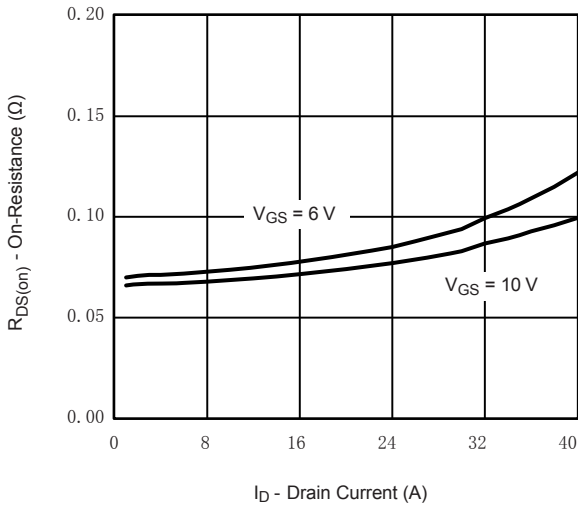
*2: Guaranteed by design, not subject to production testing.

■ Typical Characteristics

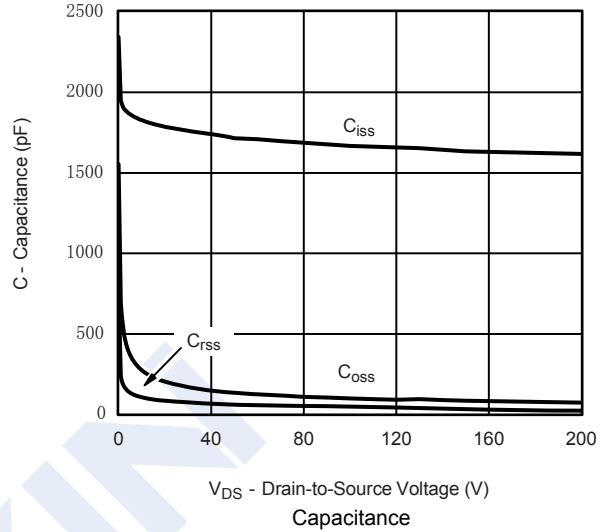


N-Channel MOSFET SI4490DY (KI4490DY)

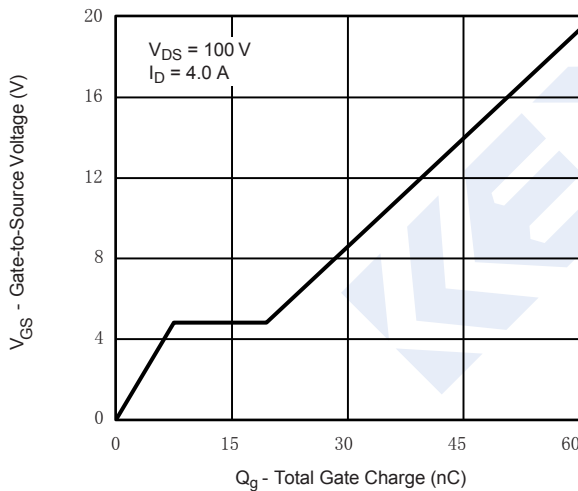
Typical Characteristics



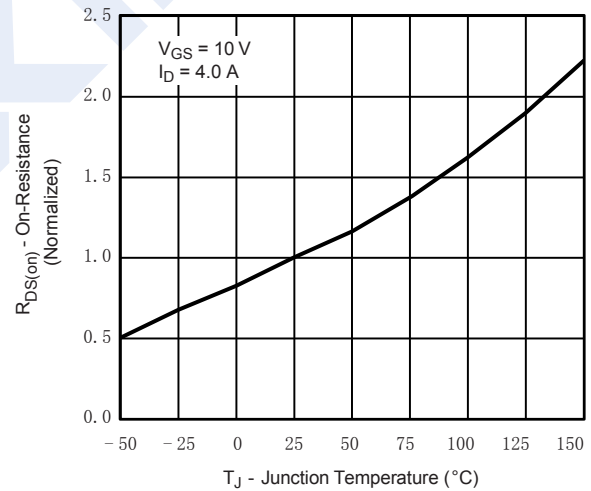
On-Resistance vs. Drain Current



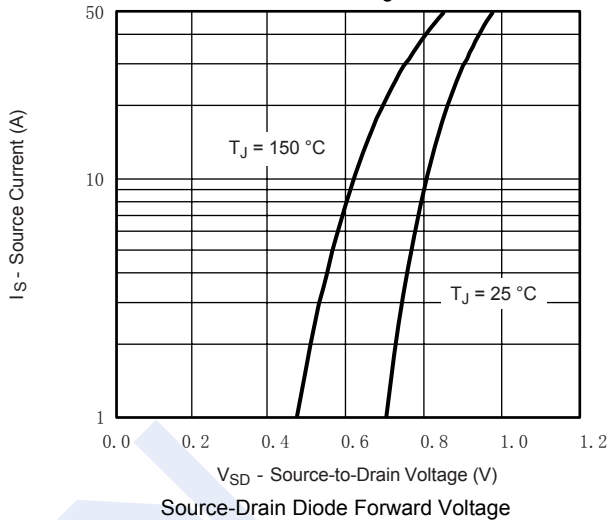
Capacitance



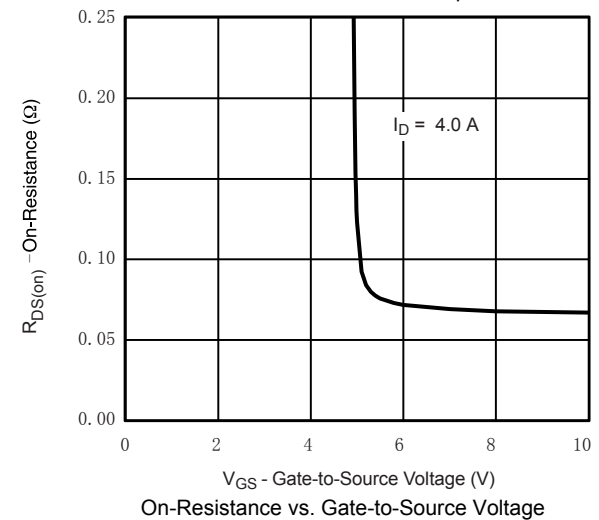
Gate Charge



On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

N-Channel MOSFET

SI4490DY (KI4490DY)

■ Typical Characteristics

