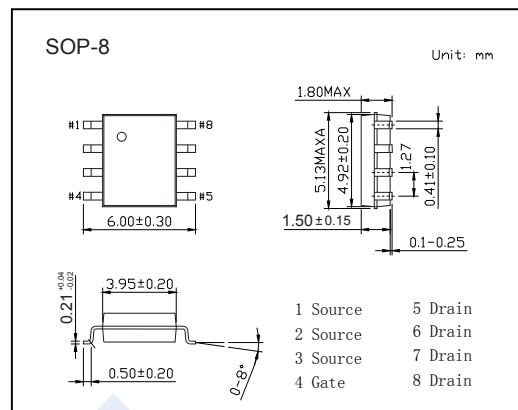
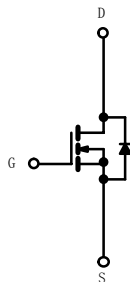


N-Channel MOSFET

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°C) *1	TA=25°C	I _D	4	2.85	A
	TA=70°C		3.2	2.3	
Pulsed Drain Current		I _{DM}	40		
Avalanch Current	L=0.1mH	I _{AS}	15		
Power Dissipation *1	TA=25°C	P _D	3.1	1.56	W
	TA=70°C		2	1	
Thermal Resistance.Junction- to-Ambient *1		R _{thJA}	40	80	°C/W
Thermal Resistance.Junction- to-Foot		R _{thJF}		21	
Junction Temperature		T _J	150		°C
Storage Temperature Range		T _{stg}	-55 to 150		

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

■ Marking

Marking	4490 KC****
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N-Channel MOSFET

SI4490DY (KI4490DY)

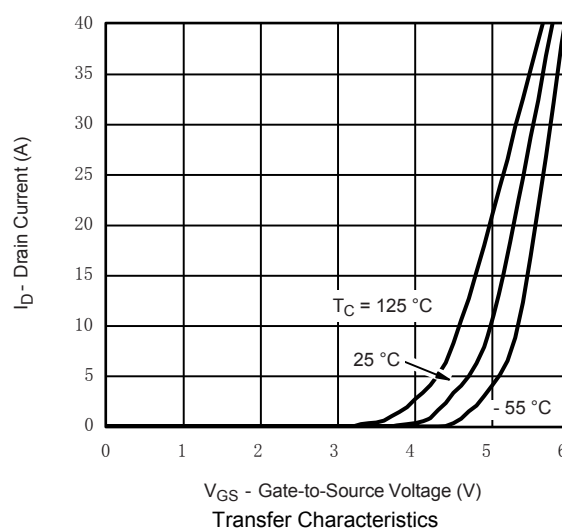
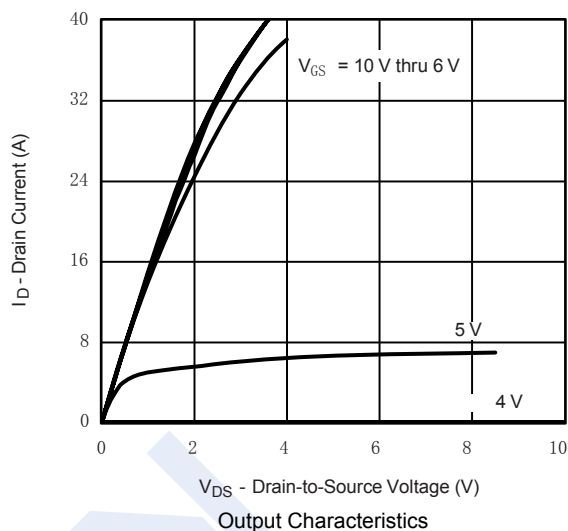
■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DS}	$I_D=250\mu A$, $V_{GS}=0V$	200			V
Zero Gate Voltage Drain Current	I_{DSS}	$V_{DS}=160V$, $V_{GS}=0V$			1	μA
		$V_{DS}=160V$, $V_{GS}=0V$, $T_J=55^\circ C$			5	
Gate-Body Leakage Current	I_{GSS}	$V_{DS}=0V$, $V_{GS}=\pm 20V$			± 100	nA
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}$, $I_D=250\mu A$	2			V
Static Drain-Source On-Resistance *1	$R_{DS(on)}$	$V_{GS}=10V$, $I_D=4A$		65	80	$m\Omega$
		$V_{GS}=6V$, $I_D=4A$		70	90	
On State Drain Current	$I_{D(on)}$	$V_{GS}=10V$, $V_{DS}\geq 5V$	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	$V_{GS}=10V$, $V_{DS}=100V$, $I_D=4A$ *2		34	42	nC
Gate Source Charge	Q_{gs}			7.5		
Gate Drain Charge	Q_{gd}			12		
Turn-On DelayTime	$t_{d(on)}$	$V_{GS}=10V$, $V_{DS}=100V$, $R_L=25\Omega$, $R_G=6\Omega$, $I_D=4A$ *2		14	20	ns
Turn-On Rise Time	t_r			20	30	
Turn-Off DelayTime	$t_{d(off)}$			32	50	
Turn-Off Fall Time	t_f			25	35	
Body Diode Reverse Recovery Time	t_{rr}	$I_F=2.8A$, $di/dt=100A/\mu s$		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 $\leq 300\mu s$, duty cycle $\leq 2\%$.

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

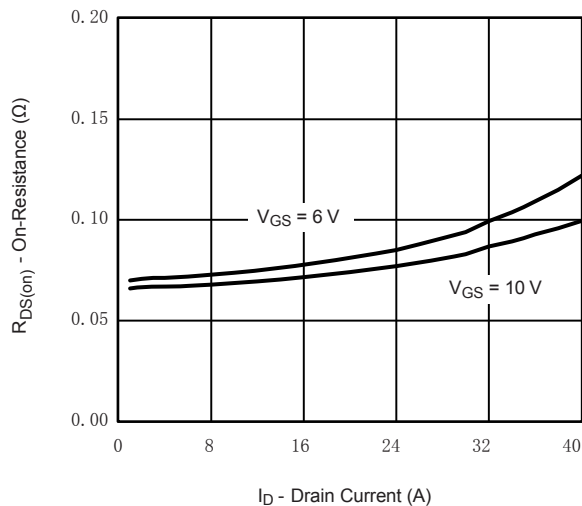
■ Typical Characteristics



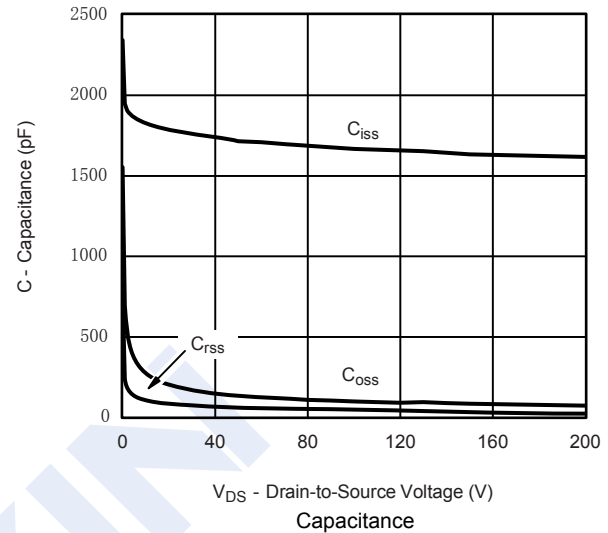
N-Channel MOSFET

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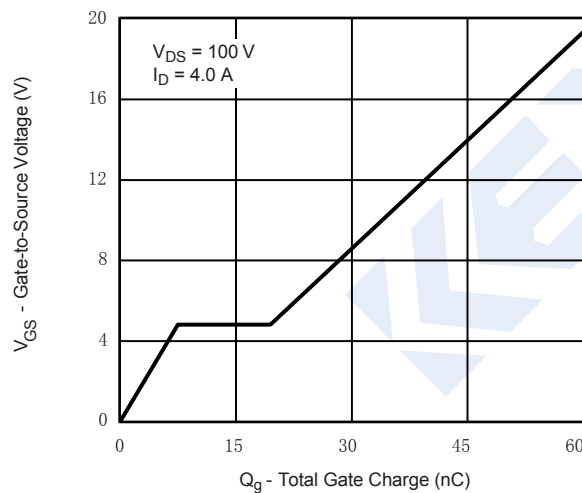
Typical Characteristics



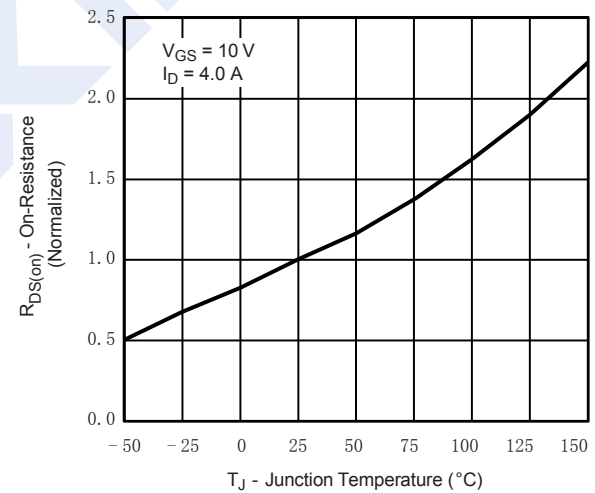
On-Resistance vs. Drain Current



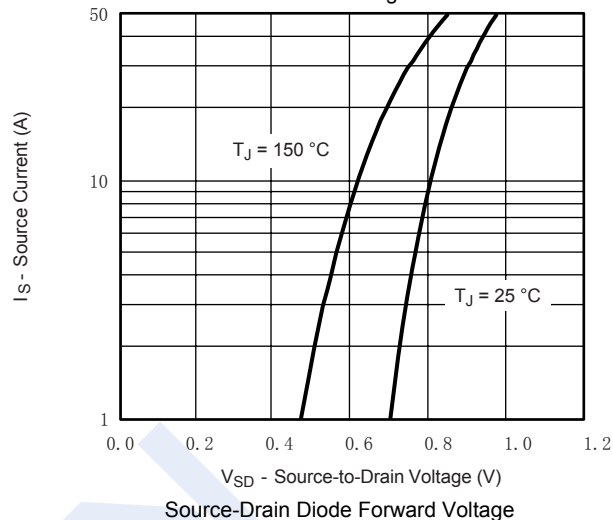
Capacitance



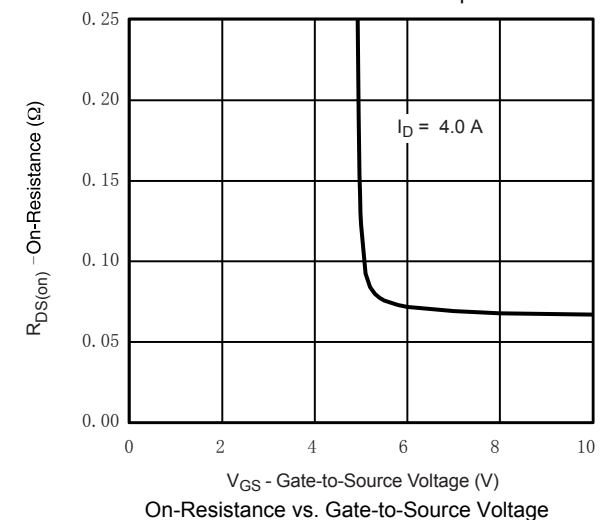
Gate Charge



On-Resistance vs. Junction Temperature



Source-Drain Diode Forward Voltage



On-Resistance vs. Gate-to-Source Voltage

N-Channel MOSFET

SI4490DY (KI4490DY)

■ Typical Characteristics

