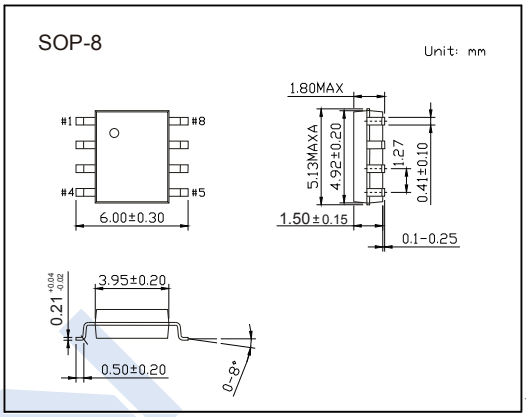
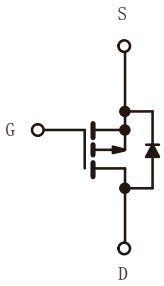
P-Channel Enhancement MOSFET

SI9435BDY (KI9435BDY)

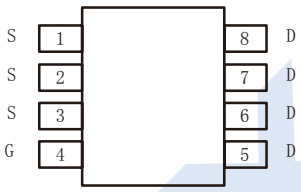


■ Features

- V_{DSS} = -30V
- I_D = -5.7A (V_{GS} = -10V)
- $R_{DS(ON)}$ = 42 mΩ @ V_{GS} = -10 V
- $R_{DS(ON)}$ = 70 mΩ @ V_{GS} = -4.5 V



P-Channel MOSFET



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	-30	V
Gate-Source Voltage		V_{GS}	±20	
Continuous Drain Current	TA=25℃	I_D	-5.7	A
	TA=70℃		-4.6	
Pulsed Drain Current		I_{DM}	-30	
Power Dissipation	TA=25℃ *1	P_D	2.5	W
	TA=70℃ *2		1.6	
Thermal Resistance.Junction- to-Ambient		R_{thJA}	50	℃/W
Thermal Resistance.Junction- to-Case		R_{thJC}	25	
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

*1 50℃/W when mounted on a 1 in2 pad of 2 oz copper

*2 105℃/W when mounted on a .04 pad of 2 oz copper

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■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Testconditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	B_{VDSS}	V_{GS} = 0 V, I_D = -250 μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} =-30 V, V_{GS} = 0 V			-1	μA
Gate-Body Leakage	I_{GSS}	V_{GS} = ±20 V, V_{DS} = 0 V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS}, I_D =-250 μA	-1		-3	V
Static Drain-Source	$R_{DS(on)}$	V_{GS} =-10 V, I_D = -5.7 A		33	42	mΩ
		V_{GS} = -6 V, I_D = -5 A		43	55	
		V_{GS} = -4.5 V, I_D =-4.4A,		56	70	
On–State Drain Current	$I_{D(on)}$	V_{GS} = -10 V, V_{DS} = -5 V	-20			A
Forward Transconductance	g_{FS}	V_{DS} = -15 V, I_D = -5.7 A		13		S
Input Capacitance	C_{iss}	V_{DS} =-15 V, V_{GS} = 0 V, f = 1.0 MHz		690		pF
Output Capacitance	C_{oss}			306		pF
Reverse Transfer Capacitance	C_{rss}			77		pF
Turn-On Delay Time	$t_{d(on)}$	V_{DD} =-15 V, I_D = -1 A, V_{GS} = -10 V, R_{GEN} = 6 Ω *		14	25	ns
Turn-On Rise Time	t_r			14	25	ns
Turn-Off Delay Time	$t_{d(off)}$			42	70	ns
Turn-Off Fall Time	t_f			30	50	ns
Total Gate Charge	Q_g	V_{DS} =-15 V, I_D =-3.5 A, V_{GS} = -10 V *		16	24	nC
Gate-Source Charge	Q_{gs}			2.3		nC
Gate-Drain Charge	Q_{gd}			4.5		nC
Maximum Continuous Drain-Source Diode Forward Current	I_S				-5.7	A
Drain–Source Diode Forward Voltage	V_{SD}	V_{GS} = 0 V, I_S =-2.3 A *		-0.8	-1.1	V

* Pulse Test: Pulse Width ＜300μs, Duty Cycle ＜ 2.0%

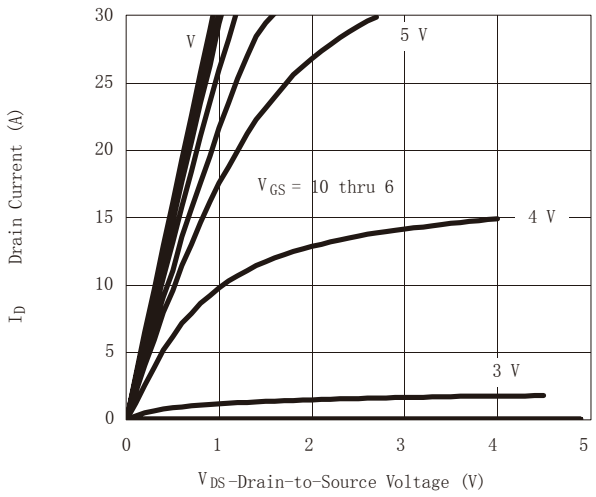
■ Marking

Marking	9435B KC****

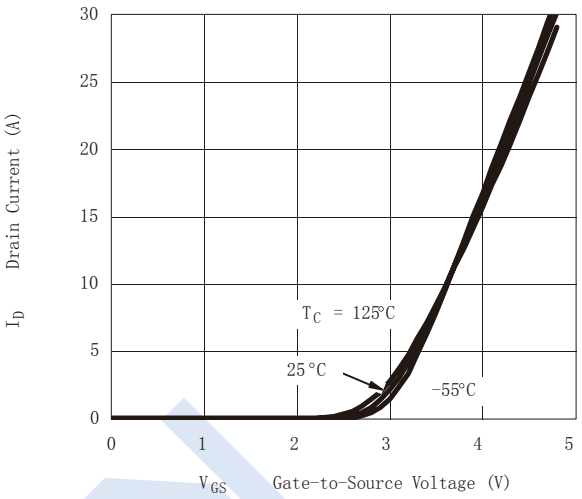
SI9435BDY (KI9435BDY)

■ Typical Characterisitics

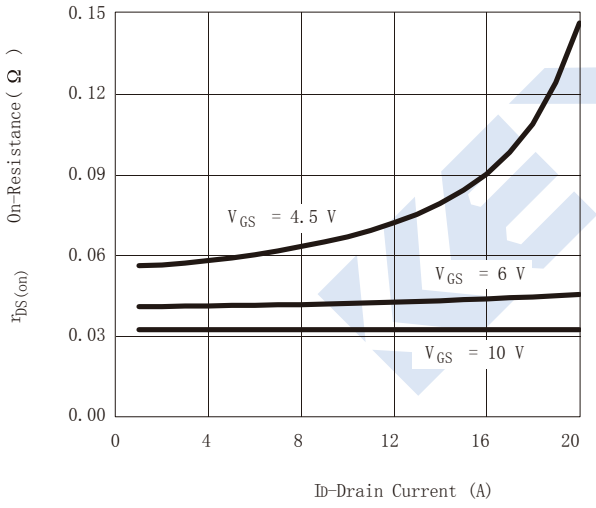
Output Characteristics



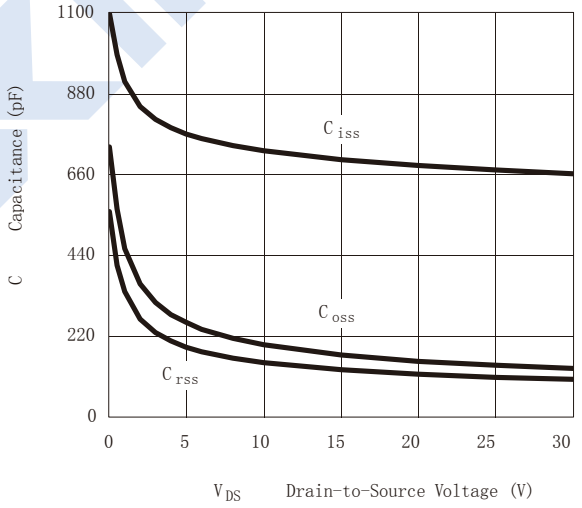
Transfer Characteristics



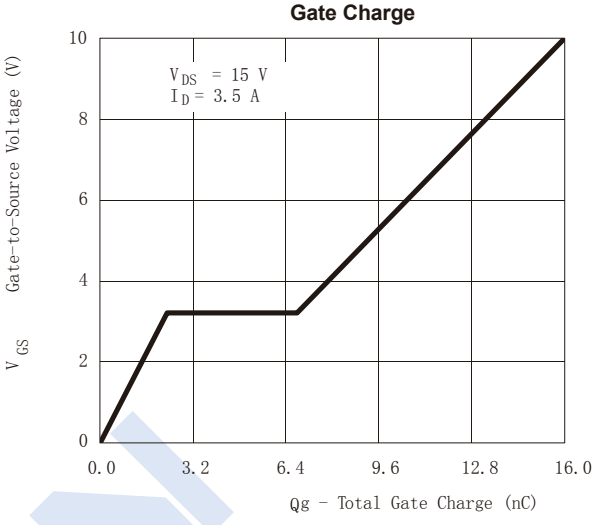
On-Resistance vs. Drain Current



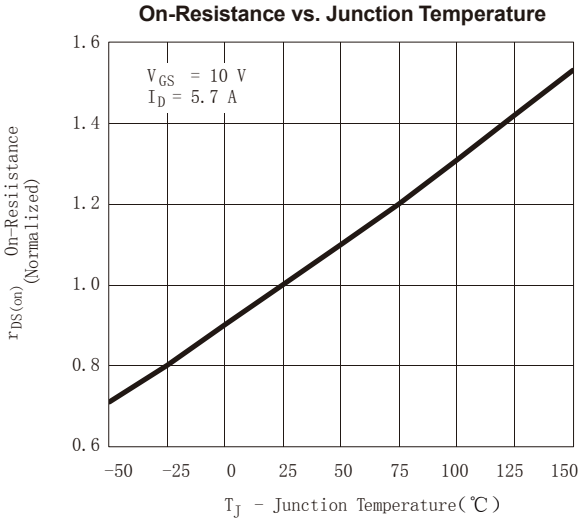
Capacitance



Gate Charge



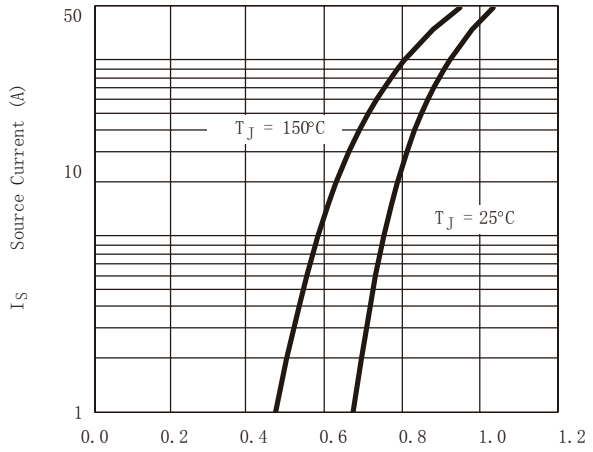
On-Resistance vs. Junction Temperature



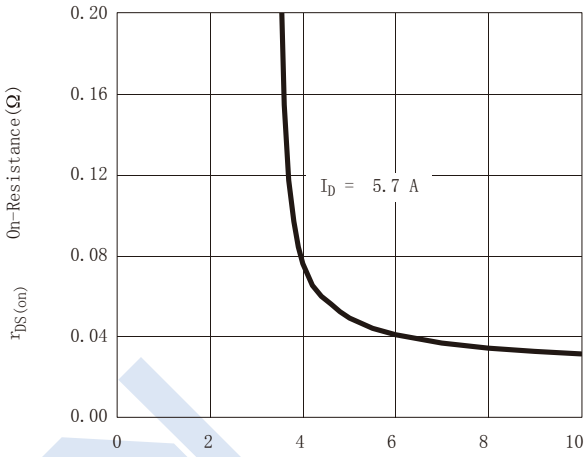
SI9435BDY (KI9435BDY)

■ Typical Characterisitics

Source-Drain Diode Forward Voltage

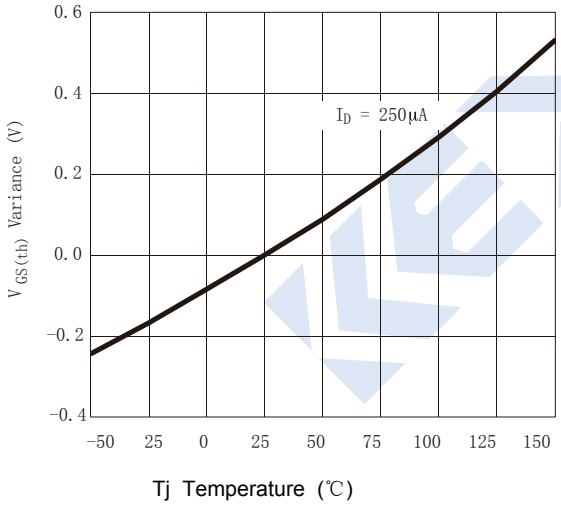


On-Resistance vs. Gate-to-Source Voltage



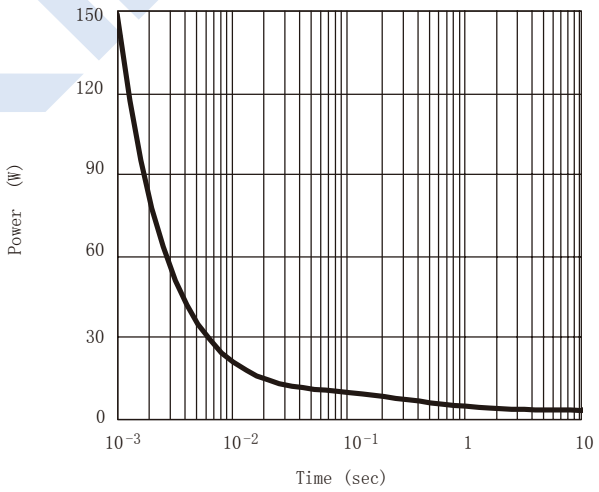
V_{SD} Source-to-Drain Voltage(V)

Threshold Voltage

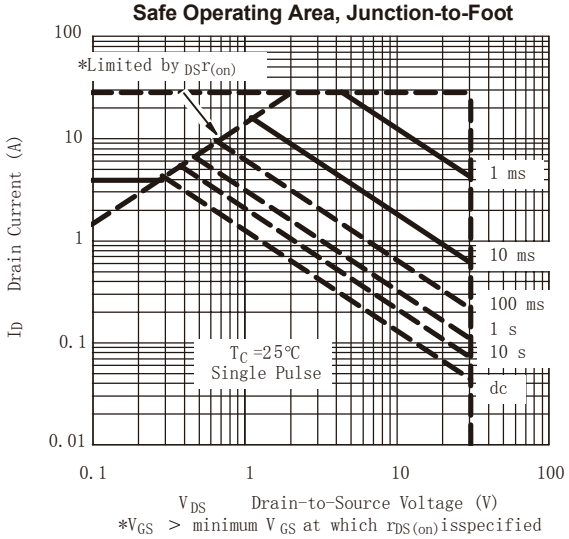


V_{GS} Gate-to-Source Voltage (V)

Single Pulse Power, Junction-to-Ambient



Safe Operating Area, Junction-to-Foot



*V_{GS} > minimum V_{GS} at which $r_{DS(on)}$ isspecified

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■ Typical Characterisitics