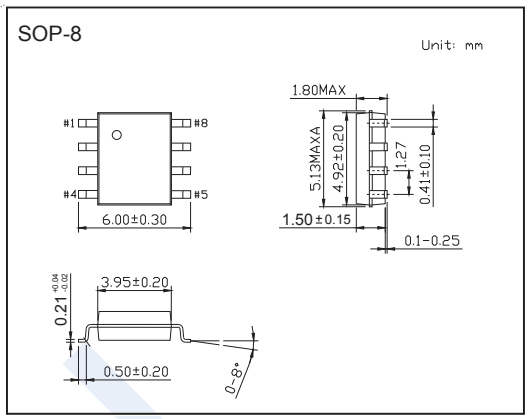
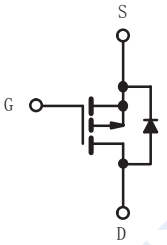
P-Channel MOSFET

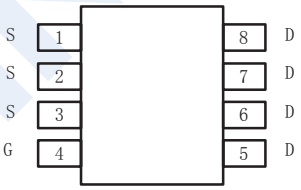
SI4435DY (KI4435DY)



■ Features

- V_{DS}=-30V
- $R_{DS(on)}$=0.02Ω @V_{GS}=-10V
- $R_{DS(on)}$=0.035Ω @V_{GS}=-4.5V





Top View

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±20	V
Continuous Drain Current	I_D	-8.8	A
Pulsed Drain Current	I_{DM}	-50	A
Maximum Power Dissipation	P_D	2.5	W
Maximum Junction-to-Ambient	R_{thJA}	50	℃/W
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 to 150	℃

SI4435DY (KI4435DY)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test conditions	Min	Typ	Max	Unit
Drain–Source Breakdown Voltage	BV_{DSS}	V_{GS} = 0 V, I_D = –250 μA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS} = -30V , V_{GS} = 0V			-1	μA
		V_{DS} = -15V , V_{GS} = 0V , T_J =70℃			-5	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS} = V_{GS} , I_D = -250uA	-1.0	-1.7	-3	V
Gate-Body Leakage	I_{GSS}	V_{DS} = 0V , V_{GS} = ±20V			±100	nA
Drain-Source On-State Resistance *	$r_{DS(on)}$	V_{GS} = -10V , I_D =-8.0A		0.015	0.02	Ω
		V_{GS} = -4.5V , I_D = -5.0A		0.022	0.035	
On-State Drain Current	$I_{D(on)}$	V_{DS} =-5V , V_{GS} = -10V	-40			A
Forward Transconductance*	g_{fs}	V_{DS} = -15V , I_D = -8A		11		S
Total Gate Charge	Q_g	V_{DS} = -15V , V_{GS} = -10V , I_D = -4.6A		47	60	nC
Gate-Source Charge	Q_{gs}			7.1		
Gate-Drain Charge	Q_{gd}			8		
Turn-On Delay Time	$t_{d(on)}$	V_{DD} = -15V , R_L = 15Ω , I_D = -1A , V_{GEN} = -10V , R_G = 6Ω		16	24	ns
Rise Time	t_r			76	110	
Turn-Off Delay Time	$t_{d(off)}$			130	200	
Fall Time	t_f			90	140	
Source-Drain Reverse Recovery Time	t_{rr}	I_F = -2.5A , di/dt = 100A/us		34	51	ns
Continuous Source Current (Diode Conduction)	I_S			-2.5		A
Diode Forward Voltage*	V_{SD}	I_S = –2.5 A, V_{GS} = 0 V			-1.2	V

* Pulse test; pulse width ≤300 μ s, duty cycle≤ 2%.

■ Marking

Marking	4435 KC****