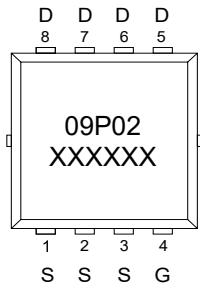
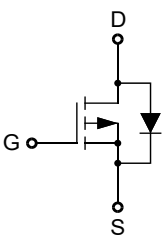


P-Channel Enhancement Mode MOSFET

Product Information

V_{DS}	I_D	$R_{DS(ON)}$, TYP.	Package	Packaging	Quantity (pcs)
-20 V	-50 A	4.8 m Ω @ $V_{GS}=-10V$	PDFN3.3x3.3-8L	Tape & Reel	5000
Features ● Surface-mounted package ● Advanced Trench Technology ● Low thermal resistance Applications ● Motor control and drive ● DC-DC converter ● Power Management			  1st Line: Part number 2nd Line: LOT code G: Gate D: Drain S: Source <i>100% Avalanche Test RoHS & Halogen Free</i>		

Absolute Maximum Ratings ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Value	Unit
Drain-Source Voltage	V_{DS}	$T_C=25^{\circ}\text{C}$	-20	V
Gate-Source Voltage	V_{GS}	$T_C=25^{\circ}\text{C}$	± 12	V
Continuous Drain Current (DC)	I_D	$T_C=25^{\circ}\text{C}$, $V_{GS}=-4.5V$	-50	A
		$T_C=100^{\circ}\text{C}$, $V_{GS}=-4.5V$	-32	A
Pulsed Drain Current	I_{DM}	$T_C=25^{\circ}\text{C}$, $V_{GS}=-4.5V$	-100	A
Power Dissipation	P_D	$T_C=25^{\circ}\text{C}$	21	W

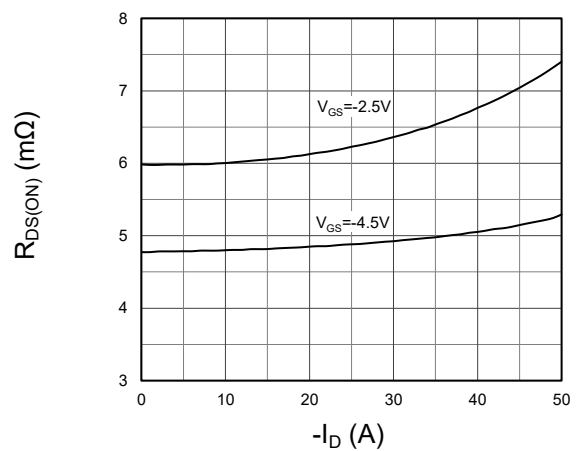
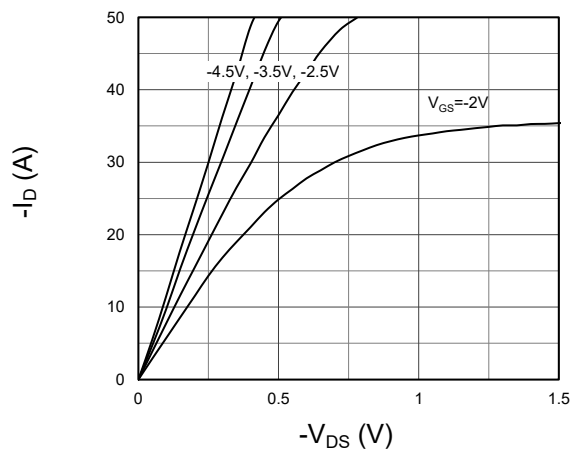
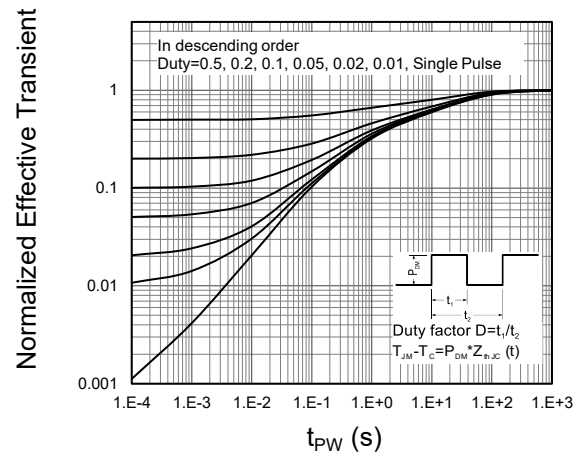
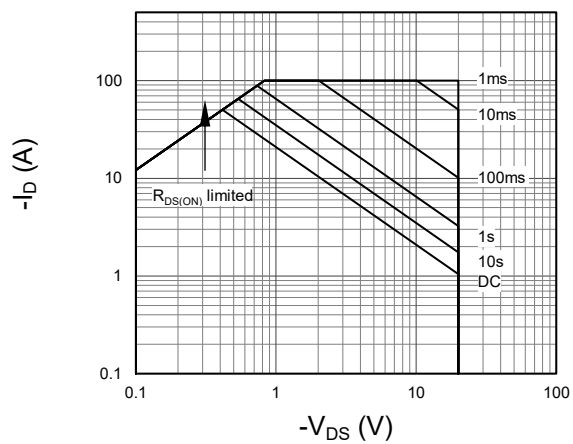
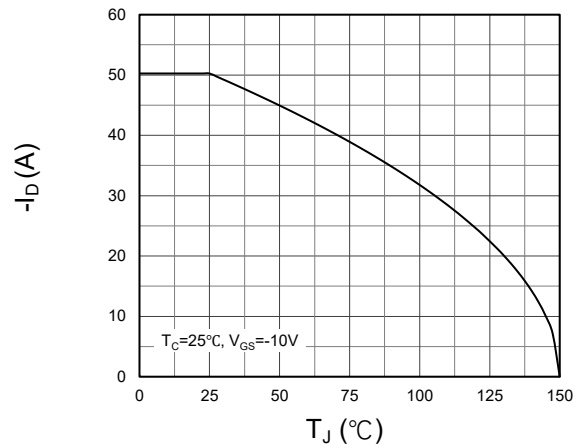
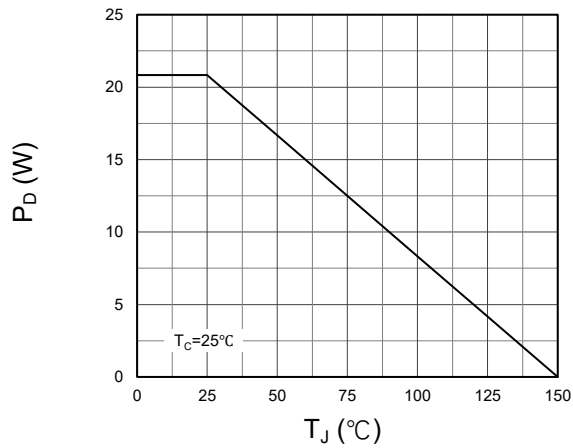
Package Values

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 — +150	$^{\circ}\text{C}$
Thermal Resistance, Junction to Ambient	R_{thJA}	62.5	$^{\circ}\text{C}/\text{W}$
Thermal Resistance, Junction to Case	R_{thJC}	6	$^{\circ}\text{C}/\text{W}$
Soldering temperature, wave and reflow soldering are allowed	T_{sld}	260	$^{\circ}\text{C}$

Electrical Characteristics ($T_A=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Conditions	Min	Typ	Max	Unit
Static Characteristic						
Drain-Source Breakdown Voltage	BV _{DSS}	V _{GS} =0V, I _{DS} =-250μA			-20	V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =-250μA	-0.3		-1.2	V
Drain-Source Leakage Current	I _{DSS}	V _{GS} =0V, V _{DS} =-20V			-1	μA
Gate-Source Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-4.5V, I _D =-10A		4.8	5.5	mΩ
Drain-Source On-State Resistance	R _{DS(ON)}	V _{GS} =-2.5V, I _D =-6A		6	8	mΩ
Dynamic Characteristic						
Input Capacitance	C _{iss}	V _{DS} =-50V, V _{GS} =0V, f=1MHz		6200		pF
Output Capacitance	C _{oss}			700		pF
Reverse Transfer Capacitance	C _{rss}			380		pF
Total Gate Charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V, I _{DS} =-10A		60		nC
Gate to Source Charge	Q _{gs}			10		nC
Gate to Drain Charge	Q _{gd}			14		nC
Turn-on Delay Time	t _{d(on)}	V _{DD} =-10V, V _{GS} =-4.5V, R _G =3.3Ω, I _D =-1A		27		ns
Turn-on Rise Time	t _r			21		ns
Turn-off Delay Time	t _{d(off)}			240		ns
Turn-off Fall Time	t _f			110		ns
Body Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =-10A			1.2	V
Reverse Recovery Time	t _{rr}	I _{SD} =-10A, di/dt=100A/μs		36		ns
Reverse Recovery Charge	Q _{rr}			20		nC

Typical Characteristics



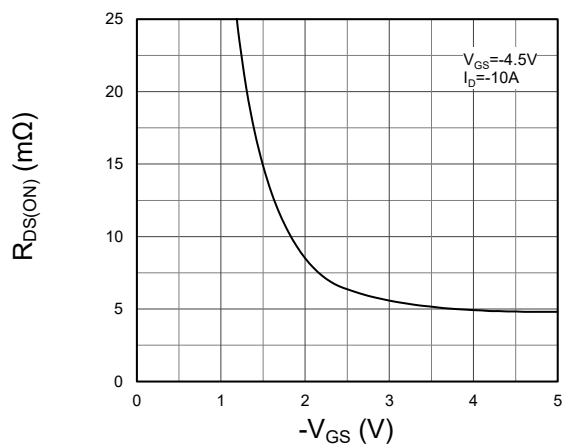


Fig 7. On-resistance vs V_{GS}

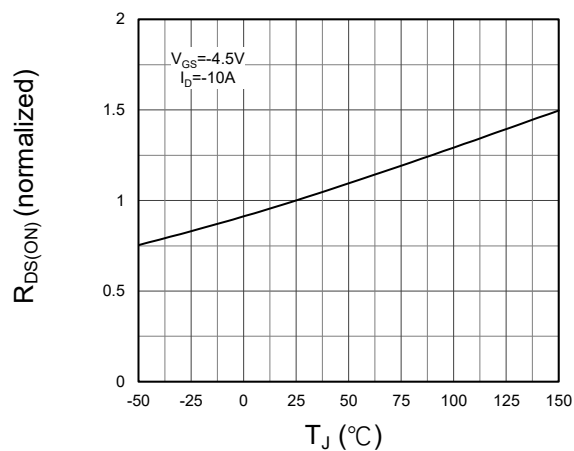


Fig 8. On-resistance vs T_J

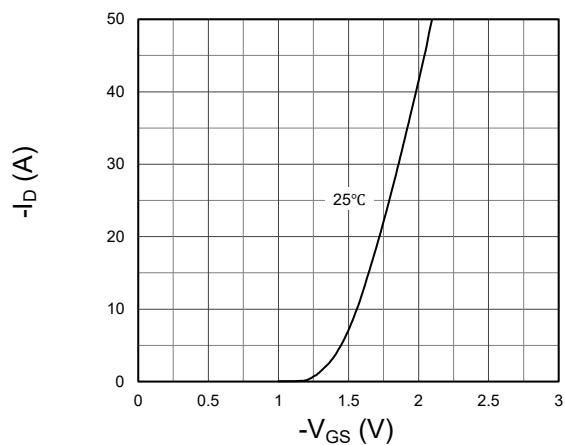


Fig 9. Typical Transfer Characteristics

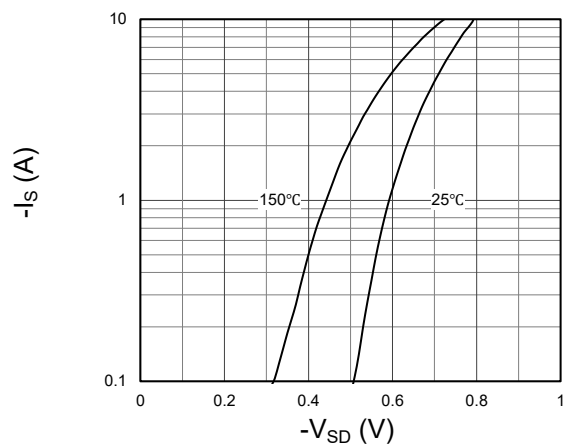


Fig 10. Forward Characteristics of Body Diode

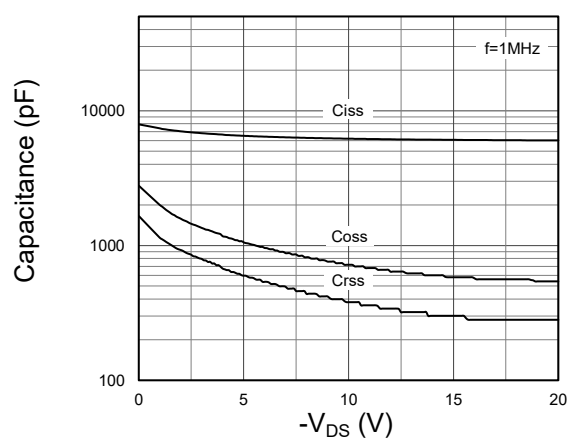


Fig 11. Capacitance

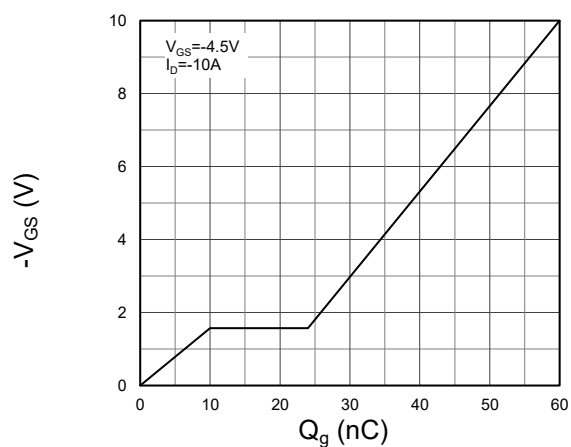


Fig 12. Gate charge

Package Dimensions

PDFN3.3x3.3-8L package

Symbol	Dimensions in Millimeters	
	MIN	MAX
A	0.70	0.85
A1	/	0.05
b	0.20	0.40
c	0.10	0.25
D	3.15	3.45
D1	3.00	3.25
D2	2.29	2.65
E	3.15	3.45
E1	2.90	3.20
E2	1.54	1.94
E3	0.28	0.68
E4	0.37	0.77
E5	0.10	0.30
e	0.60	0.70
K	0.59	0.89
L	0.30	0.50
L1	0.06	0.20
t	0.00	0.13
θ	/	12°

Revision History

Date	Revision	Major change
2022.04.29	V0.1	Formal version released.
2026.06.23	V1.0	Modified the style of the datasheet, updated data and figures.

Disclaimer

1. Unless otherwise specified in the datasheet, the product is designed and qualified as a standard commercial product and is not intended for use in applications that require extraordinary levels of quality and reliability, such as automotive, aviation/aerospace and life-support devices or systems.
2. Any and all semiconductor products have certain probability to fail or malfunction, which may result in personal injury, death or property damage. Customer are solely responsible for providing adequate safe measures when design their systems.
3. KJX Semi reserves the right to improve product design, function and reliability without notice.

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