

N-Channel Enhancement Mode MOSFET

Product Information

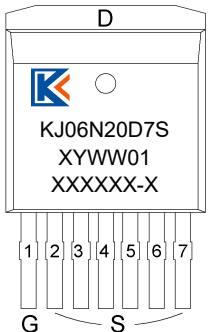
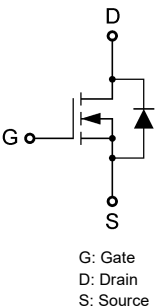
V_{DS}	I_D	$R_{DS(ON)}$, TYP.	Package	Packaging	Quantity (pcs)
200 V	173 A	5.7 m Ω @ $V_{GS}=10V$	TO-263-7L Plus	Tape & Reel	800

Features

- Surface-mounted package
- Advanced SGT technology
- Low on-resistance

Applications

- Load switch
- Power management
- Motor control and drive

1st Line: LOGO
 2nd Line: Part number
 3rd Line: Date code
 4th Line: LOT code & VTH level mark

*100% Avalanche Test
RoHS & Halogen Free*

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

Parameter	Symbol	Conditions	Value	Unit
Drain-Source Voltage	V_{DS}	$T_C=25^{\circ}C$	200	V
Gate-Source Voltage	V_{GS}	$T_C=25^{\circ}C$	± 20	V
Continuous Drain Current	I_D	$T_C=25^{\circ}C, V_{GS}=10V$	173	A
		$T_C=100^{\circ}C, V_{GS}=10V$	122	A
Pulsed Drain Current	I_{DM}	$T_C=25^{\circ}C, V_{GS}=10V$	692	A
Power Dissipation	P_D	$T_C=25^{\circ}C$	536	W
Single Pulsed Avalanche Energy	E_{AS}	$L=0.3mH, V_{DS}=50V$	888	mJ

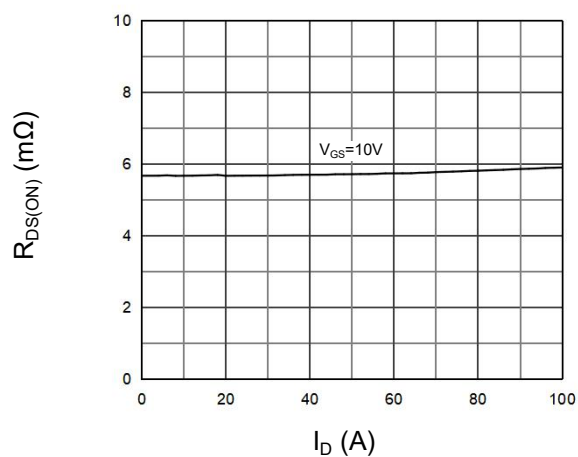
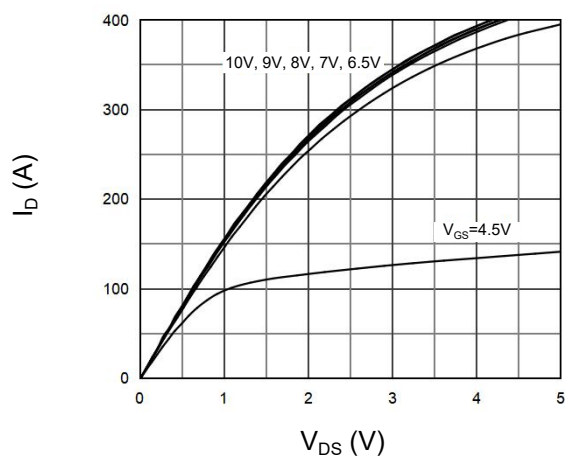
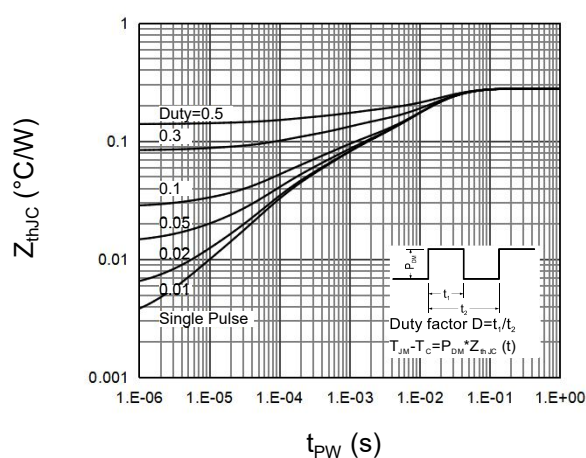
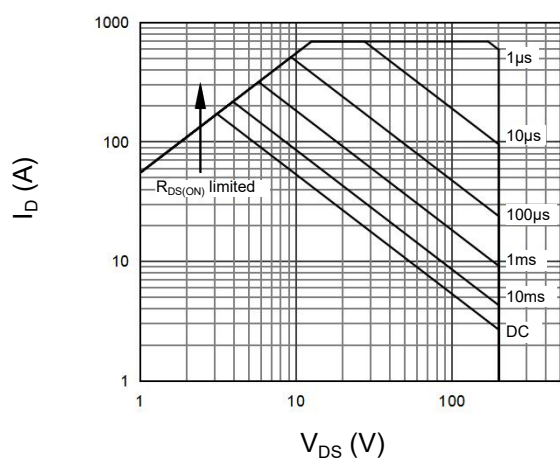
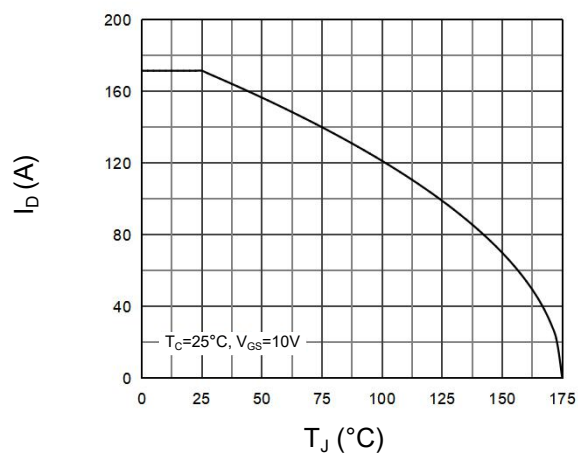
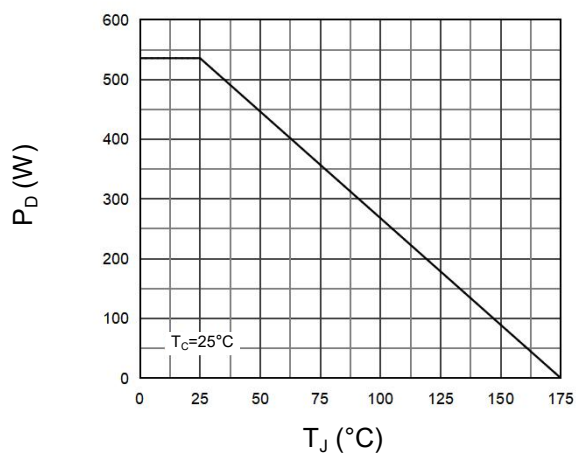
Package Values

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T_J, T_{stg}	-55 — +175	$^{\circ}C$
Thermal Resistance, Junction to Ambient	R_{thJA}	55	$^{\circ}C/W$
Thermal Resistance, Junction to Case	R_{thJC}	0.28	$^{\circ}C/W$
Soldering temperature, wave and reflow soldering are allowed	T_{sld}	260	$^{\circ}C$

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}	$V_{GS}=0V, I_{DS}=250\mu A$	200			V
Gate Threshold Voltage	$V_{GS(th)}$	$V_{DS}=V_{GS}, I_{DS}=250\mu A$	2		4	V
Drain-Source Leakage Current	I_{DSS}	$V_{GS}=0V, V_{DS}=200V$			1	μA
Gate-Source Leakage Current	I_{GSS}	$V_{DS}=0V, V_{GS}=\pm 20V$			± 100	nA
Drain-Source On-State Resistance	$R_{DS(ON)}$	$V_{GS}=0V, I_D=50A$		5.7	6.5	m Ω
Dynamic Characteristic						
Gate Resistance	R_G	f=1MHz		1.4		Ω
Input Capacitance	C_{iss}	$V_{DS}=50V, V_{GS}=0V,$ f=1MHz Crss @ f=100kHz		13945		pF
Output Capacitance	C_{oss}			571		pF
Reverse Transfer Capacitance	C_{rss}			21		pF
Total Gate Charge	Q_g	$V_{DS}=100V, V_{GS}=10V,$ $I_{DS}=50A$		182		nC
Gate to Source Charge	Q_{gs}			55		nC
Gate to Drain Charge	Q_{gd}			34		nC
Turn-on Delay Time	$t_{d(on)}$	$V_{DD}=100V, V_{GS}=10V,$ $R_L=2\Omega, R_G=3.9\Omega,$ $I_{DS}=50A$		38		ns
Turn-on Rise Time	t_r			101		ns
Turn-off Delay Time	$t_{d(off)}$			113		ns
Turn-off Fall Time	t_f			98		ns
Body Diode Characteristics						
Diode Forward Voltage	V_{SD}	$V_{GS}=0V, I_{SD}=50A$			1.2	V
Reverse Recovery Time	t_{rr}	$I_F=50A, di/dt=100A/\mu s$		149		ns
Reverse Recovery Charge	Q_{rr}			799		nC

Typical Characteristics



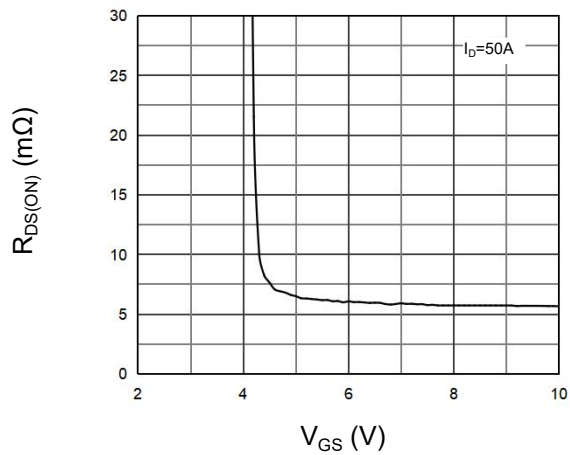


Fig 7. On-resistance vs V_{GS}

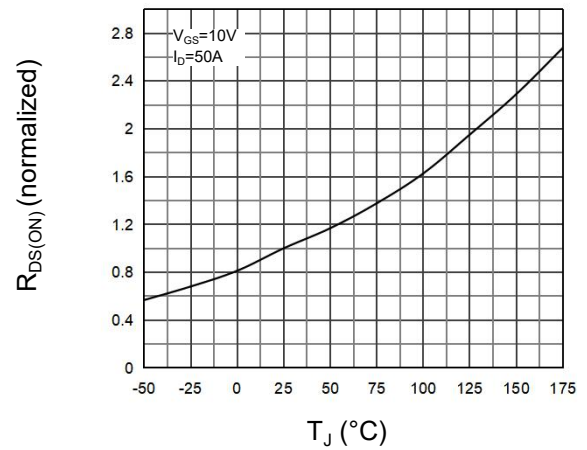


Fig 8. On-resistance vs T_J

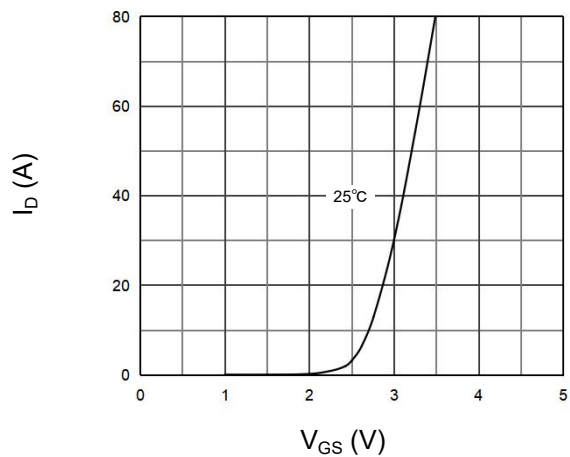


Fig 9. Typical Transfer Characteristics

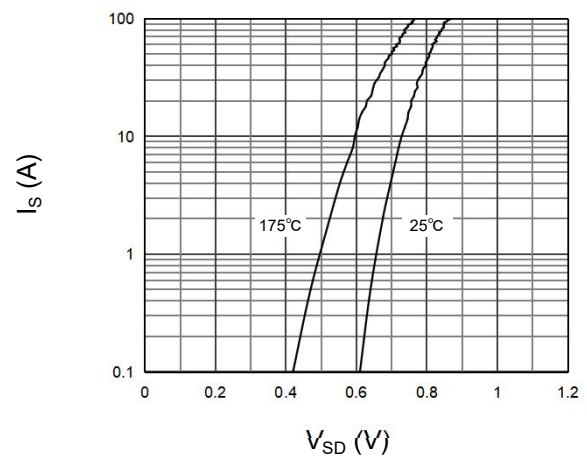


Fig 10. Forward Characteristics of Body Diode

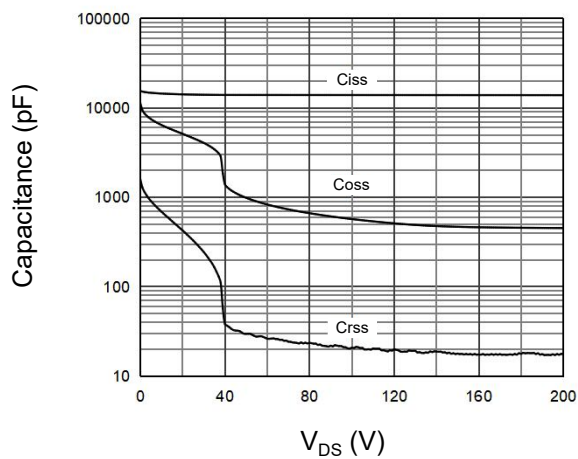


Fig 11. Capacitance

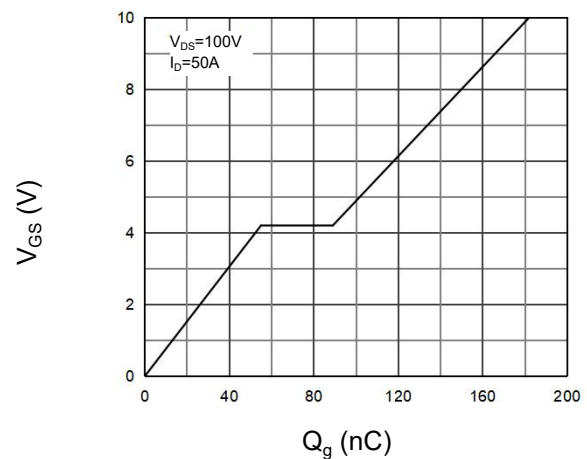
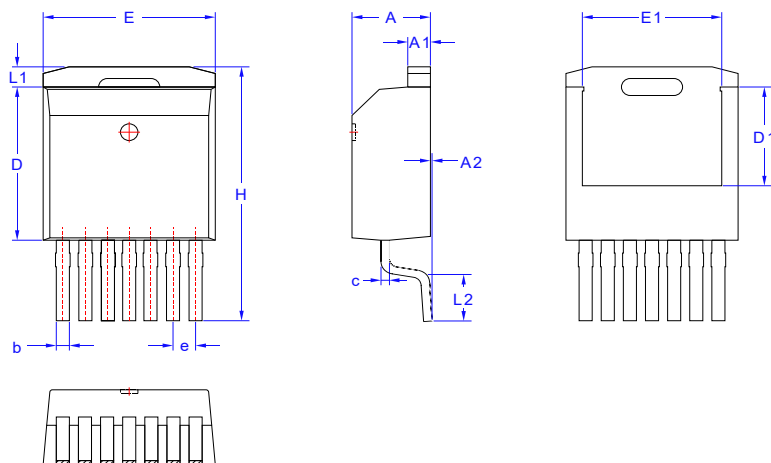


Fig 12. Gate charge

Package Dimensions

TO-263-7L Plus package



Symbol	Dimensions in Millimeters		
	MIN	NOM	MAX
A	4.30	4.43	4.56
A1	1.20	1.30	1.40
A2	0.00	0.08	0.15
b	0.50	0.61	0.72
c	0.45	0.51	0.62
D	8.90	9.08	9.28
D1	6.25	6.45	6.75
E	10.08	10.18	10.28
E1	8.20	8.30	8.40
e	1.27 BSC		
H	15.00	15.50	16.00
L1	0.85	1.05	1.25
L2	2.30	2.50	2.70

Revision History

Date	Revision	Major change
2024.08.08	V0.1	Formal version released.
2026.07.23	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.