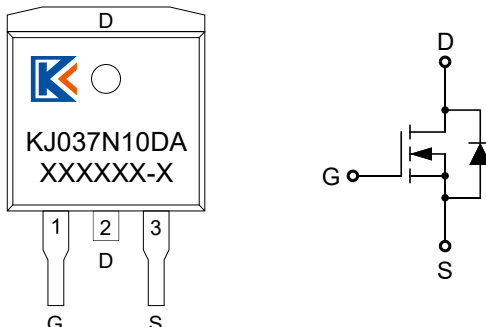


Product Information

V_{DS}	I_D	$R_{DS(ON)}$, TYP.	Package	Packaging	Quantity (pcs)
100 V	120 A	2.8 m Ω @ $V_{GS}=10$ V	TO-263	Tape & Reel	800
Features ◆ Surface-mounted package ◆ Advanced SGT technology ◆ Low on-resistance ◆ Fast switching speed Applications ◆ Motor control and drive ◆ DC/DC converter ◆ Power switch ◆ BMS			 1st Line: LOGO 2nd Line: Part number 3rd Line: LOT code & VTH level mark G: Gate D: Drain S: Source <i>100% Avalanche Test</i> <i>RoHS & Halogen Free</i>		

Absolute Maximum Ratings (T_A=25°C unless otherwise noted)

Parameter	Symbol	Conditions	Value	Unit
Drain-Source Voltage	V_{DS}	T _C =25°C	100	V
Gate-Source Voltage	V_{GS}	T _C =25°C	±20	V
Continuous Drain Current (DC)	I_D	T _C =25°C, Silicon limit	190	A
		T _C =25°C, $V_{GS}=10$ V	120	A
		T _C =100°C, $V_{GS}=10$ V	120	A
Pulsed Drain Current	I_{DM}	T _C =25°C, $V_{GS}=10$ V	480	A
Power Dissipation	P_D	T _C =25°C	210	W
Single Pulsed Avalanche Energy	E_{AS}	L=0.3 mH, $V_{DS}=50$ V	811	mJ

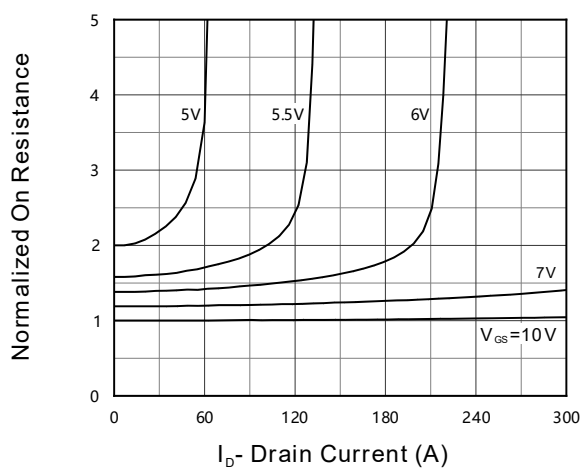
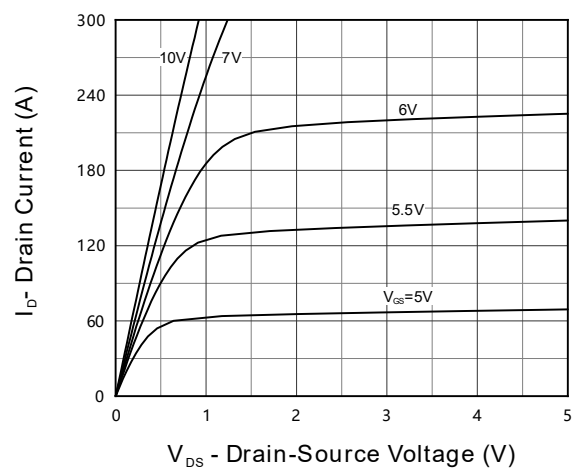
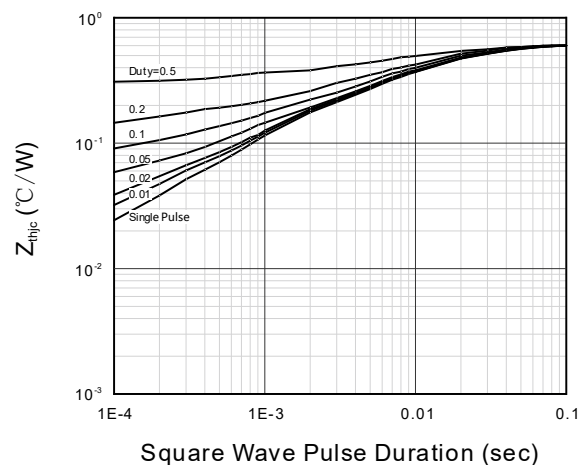
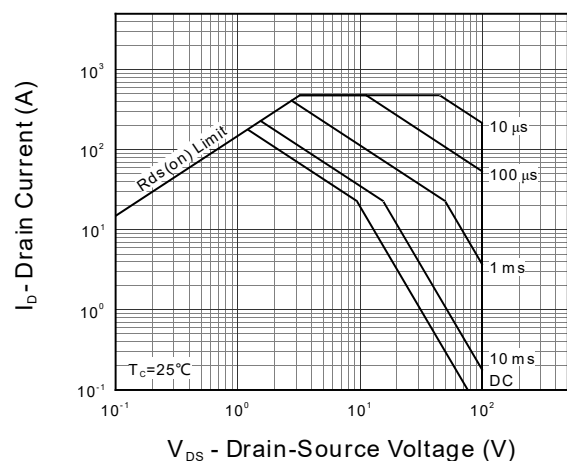
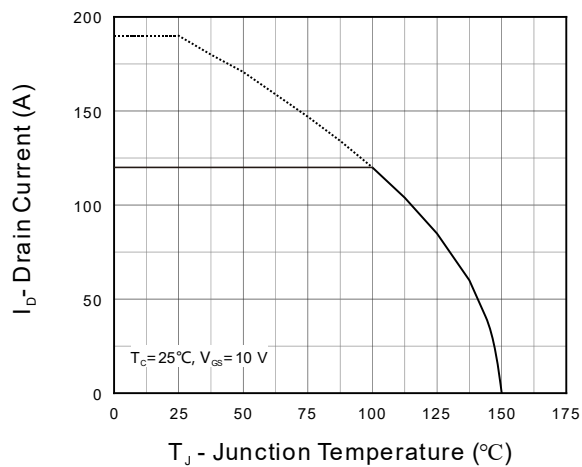
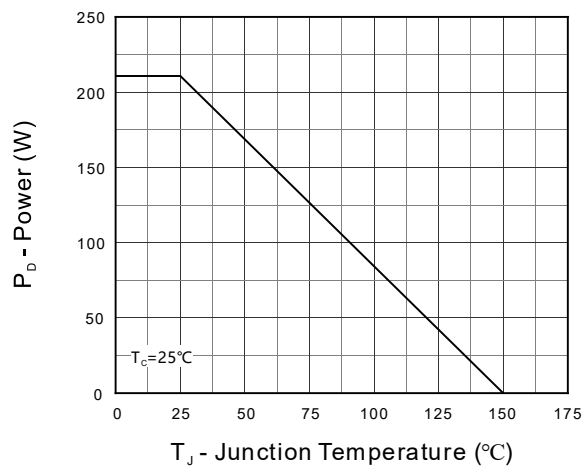
Package Values

Parameter	Symbol	Value	Unit
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55—+150	°C
Thermal Resistance, Junction to Ambient	R _{thJA}	40	°C/W
Thermal Resistance, Junction to Case	R _{thJC}	0.6	°C/W
Soldering temperature, wave and reflow soldering are allowed	T _{sold}	260	°C

Electrical Characteristics (T_J=25°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	100			V
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _{DS} =250μA	2		4	V
Drain-Source Leakage Current	I _{DSS}	V _{GS} =0V, V _{DS} =100V			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} =10V, I _D =50A		2.8	3.2	mΩ
Transconductance	g _{fs}	V _{DS} =5V, I _D =50A		120		S
Dynamic Characteristic						
Gate Resistance	R _G	Frequency=1MHz		1.5		Ω
Input Capacitance	C _{iss}	V _{DS} =50V, V _{GS} =0V, I _{DS} =50A, f=1MHz		8396		pF
Output Capacitance	C _{oss}			1076		
Reverse Transfer Capacitance	C _{rss}			55		
Total Gate Charge	Q _g	V _{DS} =50V, V _{GS} =10V, I _{DS} =50A		123		nC
Gate to Source Charge	Q _{gs}			36		
Gate to Drain Charge	Q _{gd}			38		
Turn-on Delay Time	t _{d(on)}	V _{DD} =50V, V _{GEN} =10V, R _G =6Ω, I _{DS} =50A		59		ns
Turn-on Rise Time	t _r			72		
Turn-off Delay Time	t _{d(off)}			88		
Turn-off Fall Time	t _f			39		
Body Diode Characteristics						
Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _{SD} =50A			1.2	V
Reverse Recovery Time	t _{rr}	V _{DS} =50V, I _F =50A, V _{GS} =10V, dI/dt=100A/μs		50		ns
Reverse Recovery Charge	Q _{rr}			108		nC

Typical Characteristics



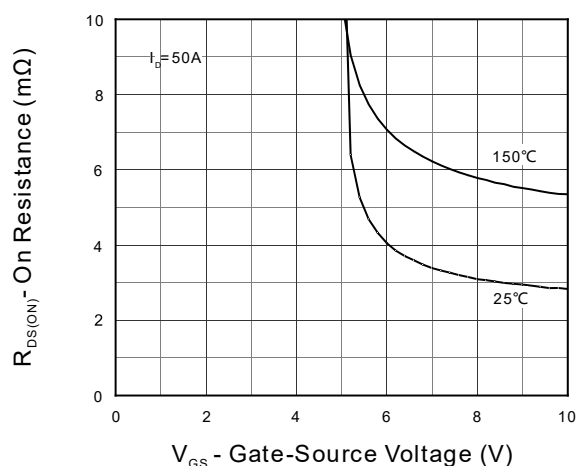


Fig 7. Transfer Characteristics

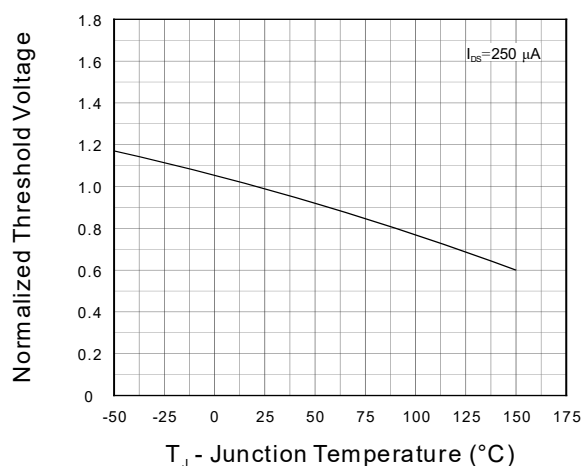


Fig 8. Normalized Threshold Voltage

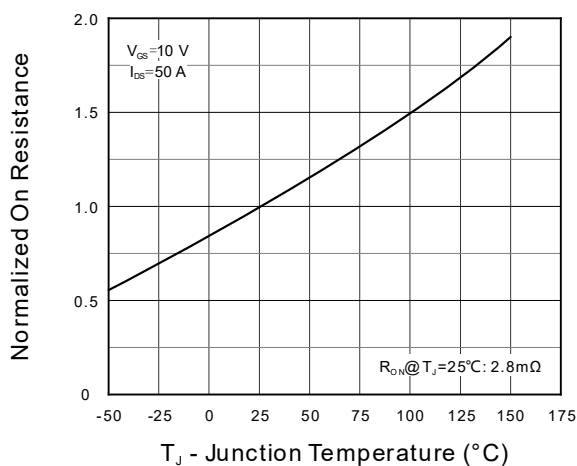


Fig 9. Normalized On Resistance

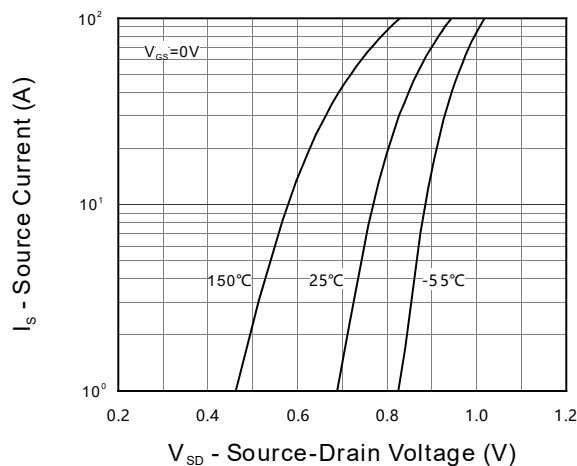


Fig 10. Diode Forward Current

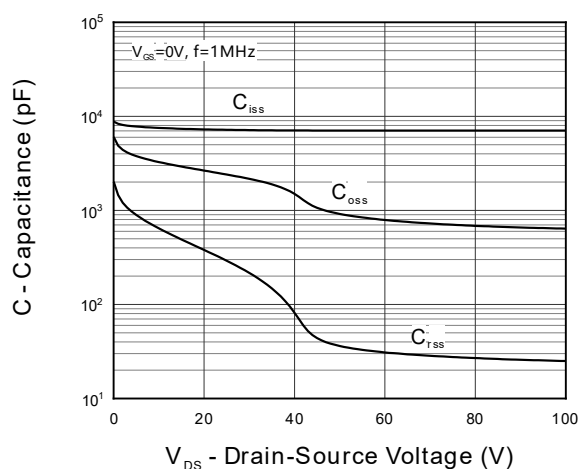


Fig 11. Capacitance

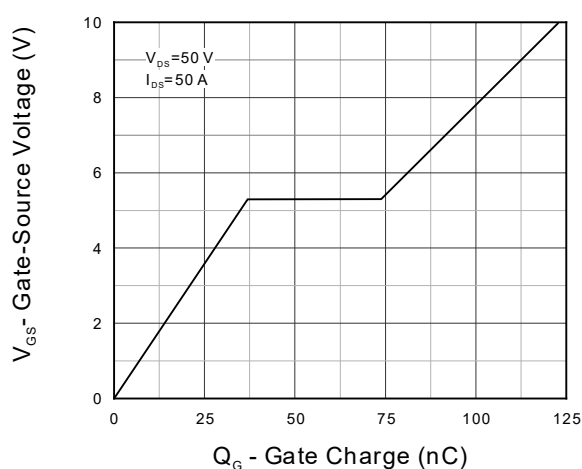
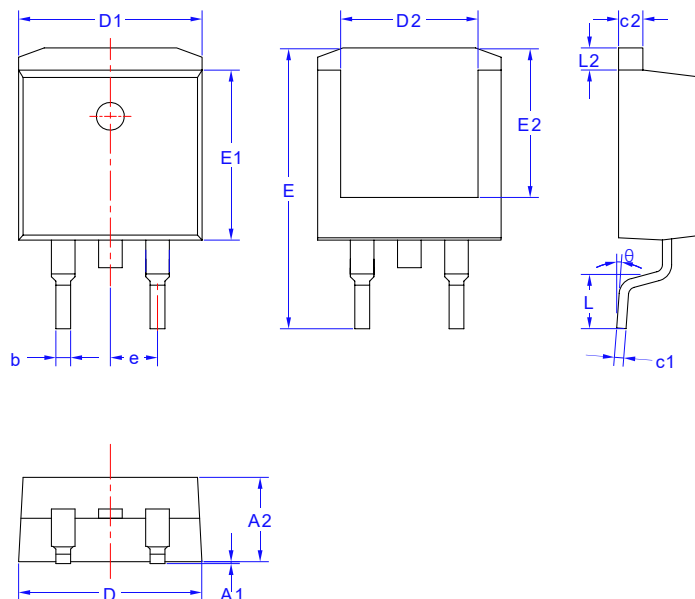


Fig 12. Gate Charge

Package Dimensions

TO-263 Package



Symbol	Dimensions in Millimeters		
	MIN	NOM	MAX
A1	0.02	-	0.20
A2	4.47	4.57	4.67
b1	0.75	-	0.85
b2	1.22	-	1.32
c1	0.50	-	0.55
c2	1.30	-	1.35
D	9.78	9.88	9.98
D1		9.88 REF	

Symbol	Dimensions in Millimeters		
	MIN	NOM	MAX
D2		7.40 REF	
E	14.90	15.10	15.30
E1	9.10	9.20	9.30
E2		8.10 REF	
e		2.54 REF	
L	2.10	2.30	2.50
L1	1.025	-	1.375
θ		0~8°	

Revision History

Date	Revision	Major change
2022.02.25	V0.1	Release of formal version
2022.03.17	V0.2	Amended text errors
2024.04.26	V0.3	Updated package dimensions
2025.04.27	V0.4	Added $I_D@100^\circ\text{C}$,
2026.06.03	V1.0	Revised the spec template, amended text errors within charts

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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