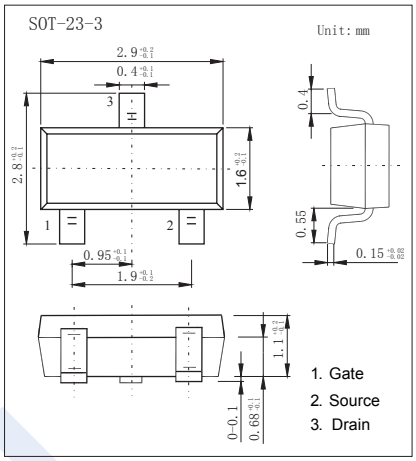
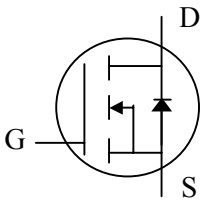
N-Channel MOSFET

AP2322GN (KP2322GN)



■ Features

- $V_{DS\ (V)}$ = 20V
- I_D = 2.5 A
- $R_{DS(ON)}$ < 90mΩ (V_{GS} = 4.5V)
- $R_{DS(ON)}$ < 120mΩ (V_{GS} = 2.5V)
- $R_{DS(ON)}$ < 150mΩ (V_{GS} = 1.8V)



■ Absolute Maximum Ratings Ta = 25℃

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	±8	
Continuous Drain Current	TA=25℃	I_D	2.5	A
	TA=70℃		2	
Pulsed Drain Current		I_{DM}	10	
Power Dissipation	TA=25℃	P_D	0.833	W
Linear Derating Factor			0.006	W/℃
Thermal Resistance.Junction- to-Ambient		R_{thJA}	150	℃/W
Junction Temperature		T_J	150	℃
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AP2322GN (KP2322GN)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V_{DSS}	I_D=250μA, V_{GS}=0V	20			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=20V, V_{GS}=0V			1	uA
Gate-Body Leakage Current	I_{GSS}	V_{DS}=0V, V_{GS}=±8V			±100	nA
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS} , I_D=1 mA	0.3		1	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=4.5V, I_D=1.6A			90	mΩ
		V_{GS}=2.5V, I_D=1A			120	
		V_{GS}=1.8V, I_D=0.3A			150	
Forward Transconductance	g_{FS}	V_{DS}=5V, I_D=2A		2		S
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=20V, f=1MHz		350	560	pF
Output Capacitance	C_{oss}			55		
Reverse Transfer Capacitance	C_{rss}			48		
Gate Resistance	R_g	V_{GS}=0V, V_{DS}=0V, f=1MHz			4.8	Ω
Total Gate Charge	Q_g	V_{GS}=4.5V, V_{DS}=16V, I_D=2.2A		7	11	nC
Gate Source Charge	Q_{gs}			0.7		
Gate Drain Charge	Q_{gd}			2.5		
Turn-On DelayTime	$t_{d(on)}$	V_{GS}=5V, V_{DS}=10V, R_L=10Ω,R_G=3.3Ω I_D=1A		6		ns
Turn-On Rise Time	t_r			12		
Turn-Off DelayTime	$t_{d(off)}$			16		
Turn-Off Fall Time	t_f			4		
Body Diode Reverse Recovery Time	t_{rr}	I_F= 2A, V_{GS}=0, dI/dt= 100A/μs		20		
Body Diode Reverse Recovery Charge	Q_{rr}			13		nC
Diode Forward Voltage	V_{SD}	I_S=0.7A,V_{GS}=0V			1.2	V

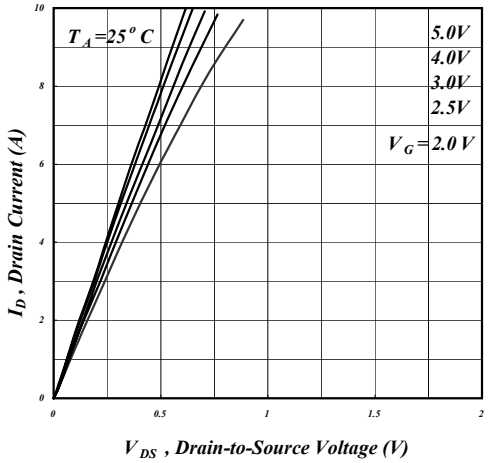
■ Marking

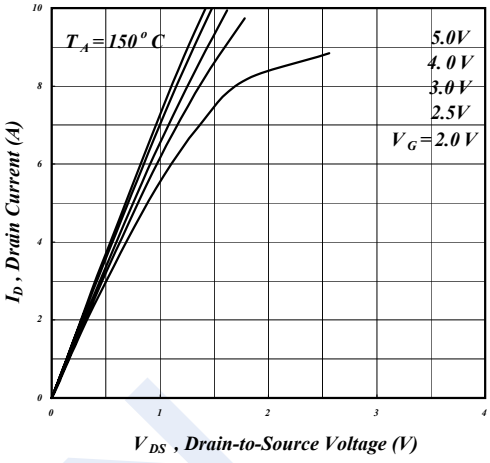
Marking	X0**

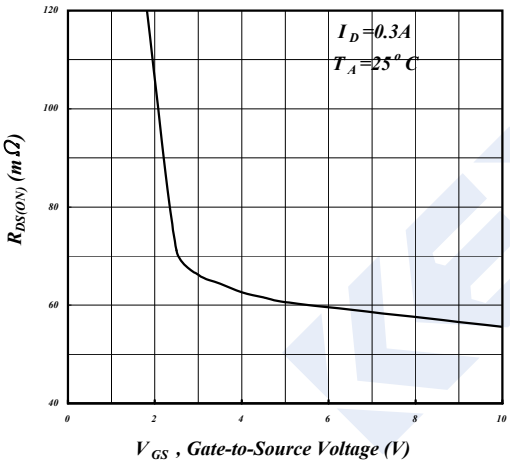
N-Channel MOSFET

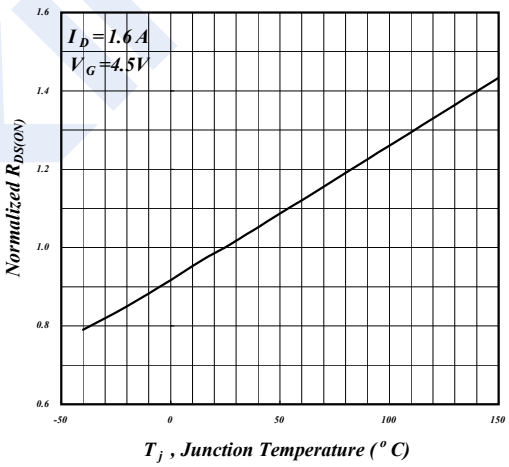
AP2322GN (KP2322GN)

■ Typical Characterisitics









v.s. Junction Temperature

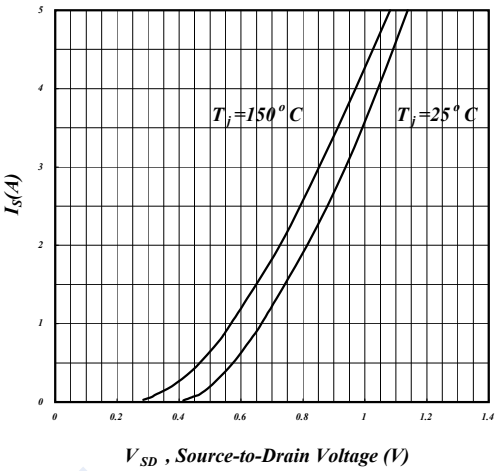


Fig 5. Forward Characteristic of Reverse Diode

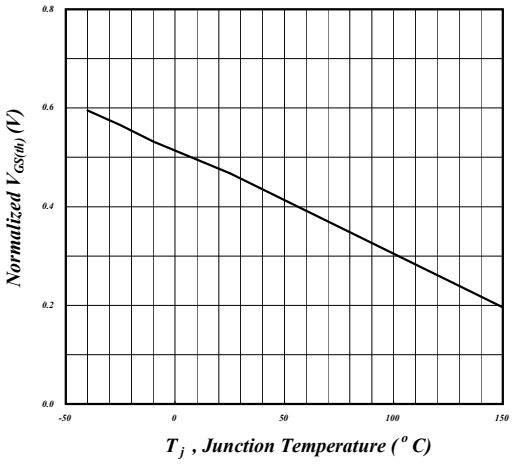
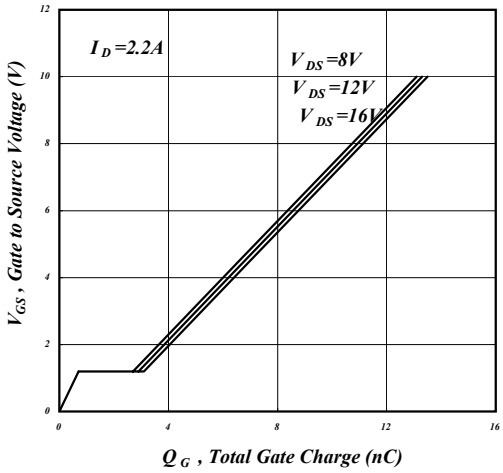


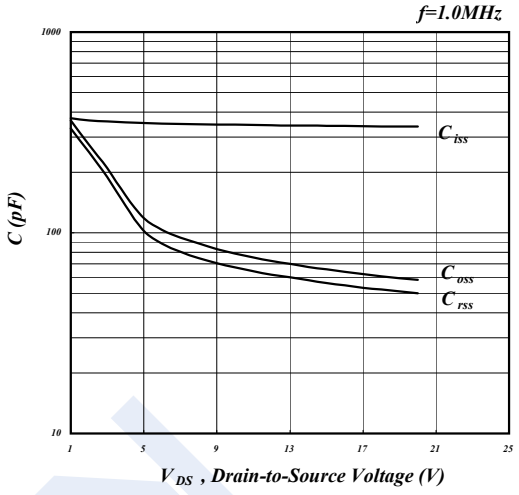
Fig 6. Gate Threshold Voltage v.s. Junction Temperature

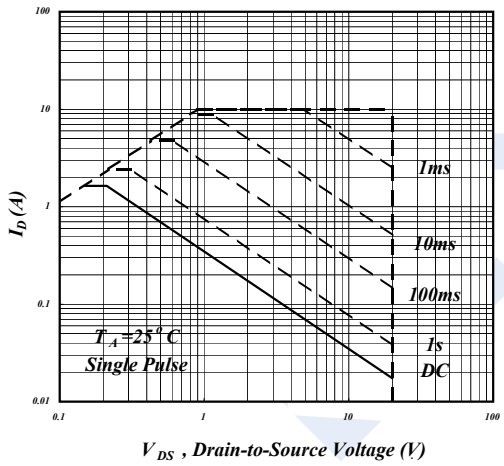
N-Channel MOSFET

AP2322GN (KP2322GN)

■ Typical Characterisitics







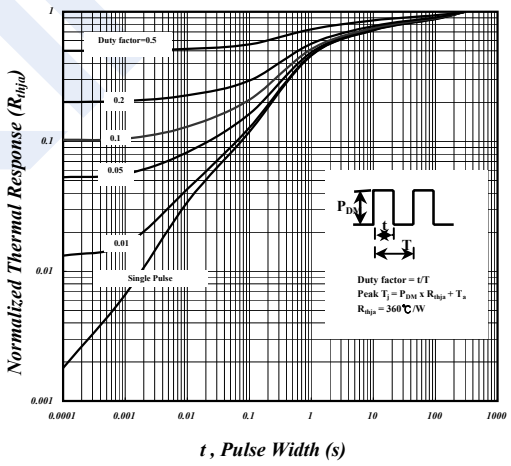
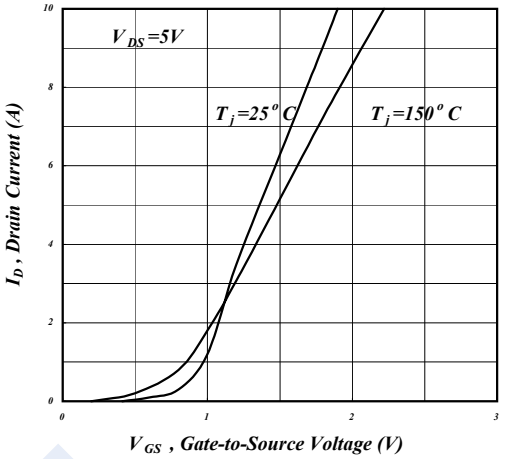


Fig 9. Maximum Safe Operating Area

Fig 10. Effective Transient Thermal Impedance



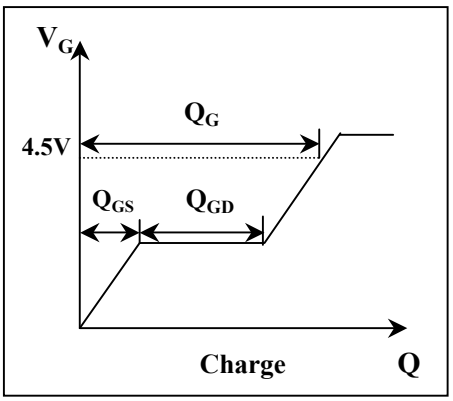


Fig 11. Transfer Characteristics

Fig 12. Gate Charge Circuit