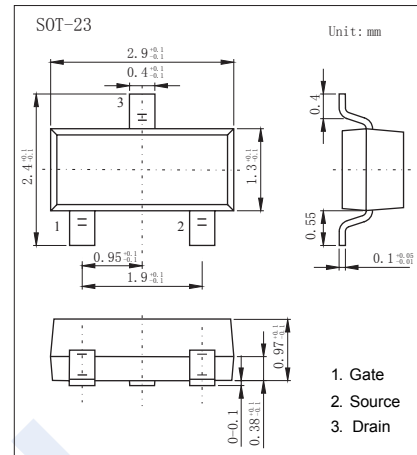
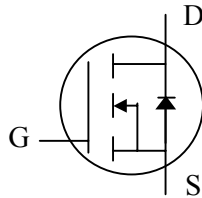


## N-Channel MOSFET

### AP2322GN (KP2322GN)

#### ■ Features

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



#### ■ Absolute Maximum Ratings $T_a = 25^\circ C$

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

## N-Channel MOSFET

### AP2322GN (KP2322GN)

■ Electrical Characteristics Ta = 25°C

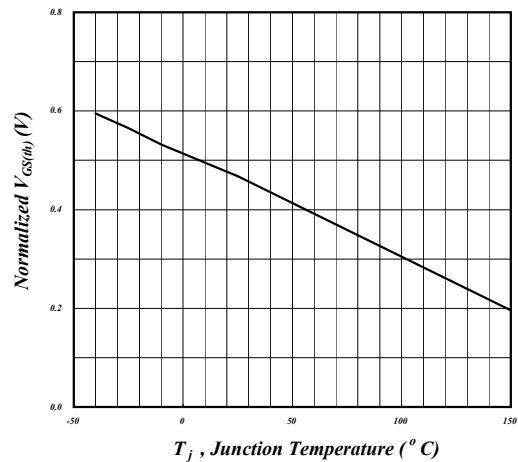
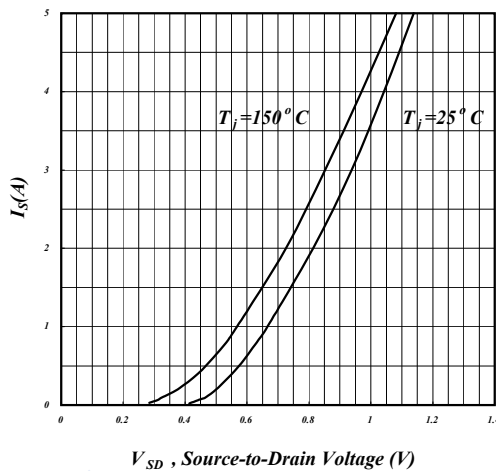
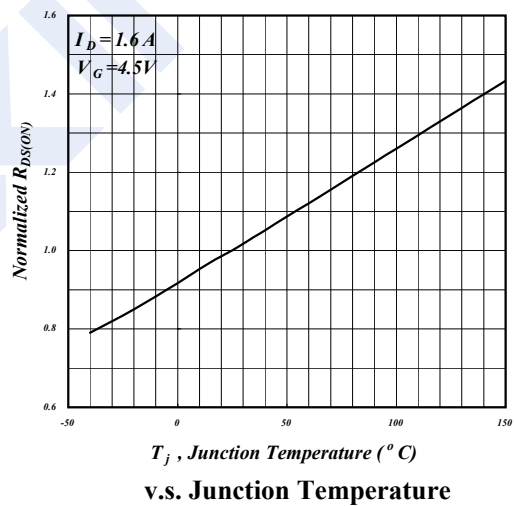
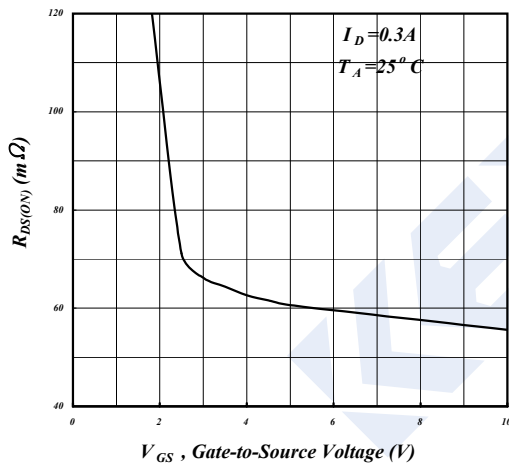
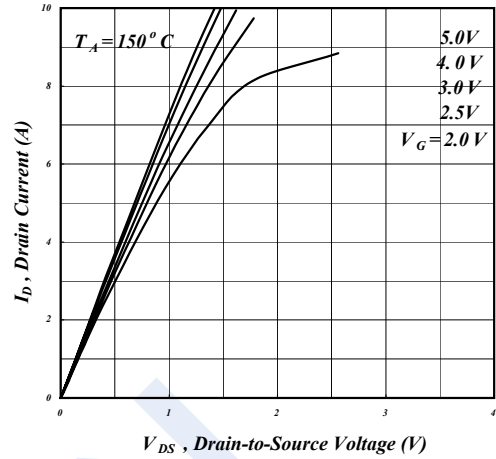
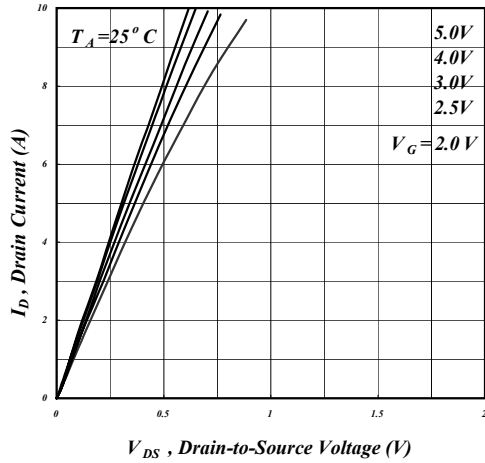
Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μA, V <sub>GS</sub> =0V	20			V
Zero Gate Voltage Drain Current	I <sub>BSS</sub>	V <sub>DS</sub> =20V, V <sub>GS</sub> =0V			1	μA
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±8V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =1 mA	0.3		1	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =4.5V, I <sub>D</sub> =1.6A			90	mΩ
		V <sub>GS</sub> =2.5V, I <sub>D</sub> =1A			120	
		V <sub>GS</sub> =1.8V, I <sub>D</sub> =0.3A			150	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =2A		2		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =20V, f=1MHz		350	560	pF
Output Capacitance	C <sub>oss</sub>			55		
Reverse Transfer Capacitance	C <sub>rss</sub>			48		
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz			4.8	Ω
Total Gate Charge	Q <sub>g</sub>	V <sub>GS</sub> =4.5V, V <sub>DS</sub> =16V, I <sub>D</sub> =2.2A		7	11	nC
Gate Source Charge	Q <sub>gs</sub>			0.7		
Gate Drain Charge	Q <sub>gd</sub>			2.5		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =5V, V <sub>DS</sub> =10V, R <sub>L</sub> =10Ω, R <sub>G</sub> =3.3Ω I <sub>D</sub> =1A		6		ns
Turn-On Rise Time	t <sub>r</sub>			12		
Turn-Off DelayTime	t <sub>d(off)</sub>			16		
Turn-Off Fall Time	t <sub>f</sub>			4		
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 2A, V <sub>GS</sub> =0, di/dt= 100A/μs		20		nC
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			13		
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =0.7A, V <sub>GS</sub> =0V			1.2	V

■ Marking

Marking	X0**
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## N-Channel MOSFET AP2322GN (KP2322GN)

■ Typical Characteristics



**Fig 5. Forward Characteristic of Reverse Diode**

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

## N-Channel MOSFET AP2322GN (KP2322GN)

■ Typical Characteristics

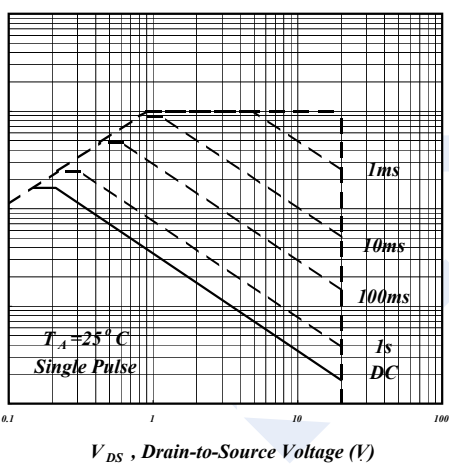
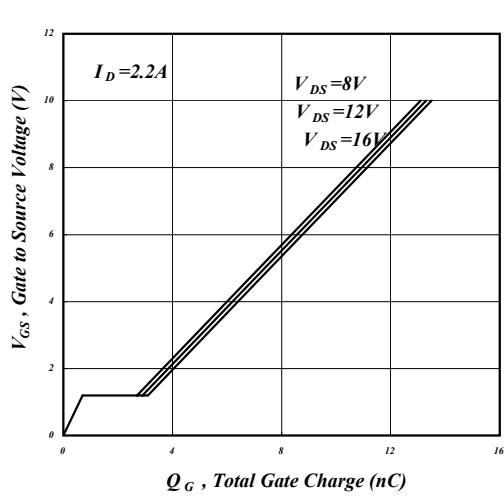


Fig 9. Maximum Safe Operating Area

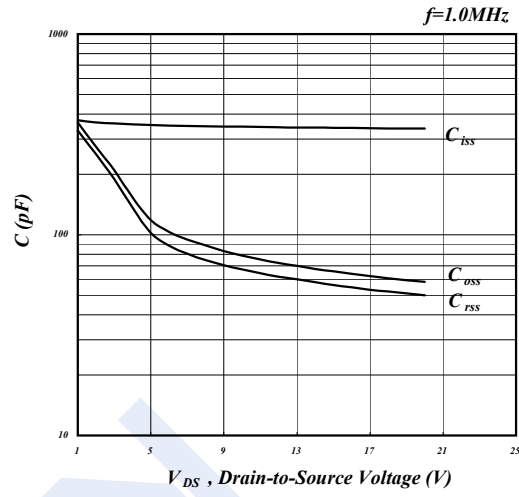


Fig 10. Effective Transient Thermal Impedance

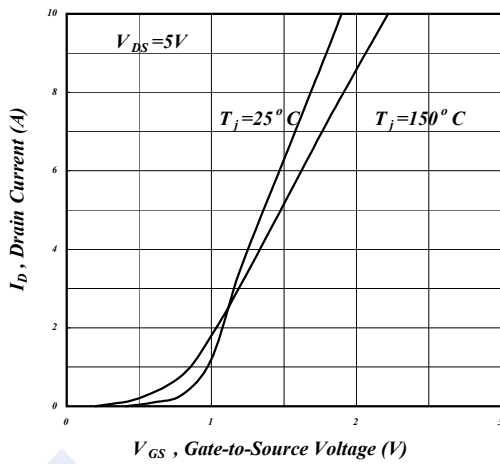


Fig 11. Transfer Characteristics

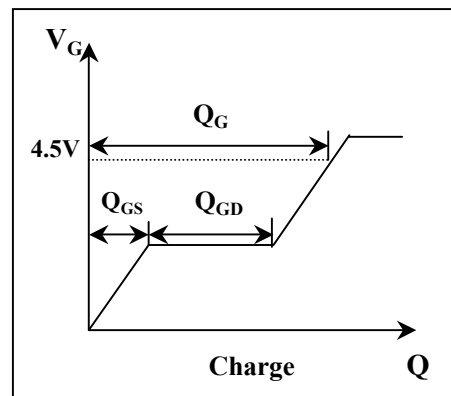


Fig 12. Gate Charge Circuit