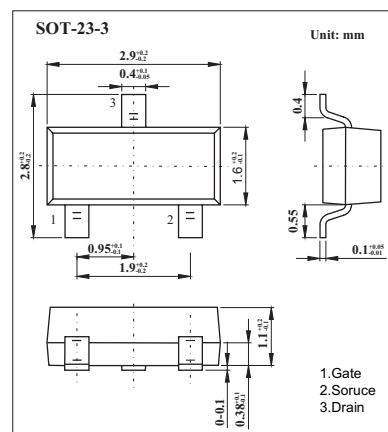
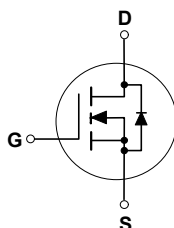


N-Channel Power MOSFET

AP2310GN

■ Features

- Simple Drive Requirement
- Small Package Outline
- Surface Mount Device

■ Absolute Maximum Ratings $T_a = 25^\circ\text{C}$

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	60	V
Gate-Source Voltage	V_{GS}	± 20	V
Continuous Drain Current $T_A = 25^\circ\text{C}$	I_D	3	A
$T_A = 70^\circ\text{C}$		2.3	
Pulsed Drain Current *	I_{DM}	10	
Power Dissipation $T_A = 25^\circ\text{C}$	P_D	1.38	W
Linear Derating Factor		0.01	W/ $^\circ\text{C}$
Thermal Resistance Junction-to-ambient	R_{thJA}	90	$^\circ\text{C}/\text{W}$
Junction and Storage Temperature Range	T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

* 2. Pulse width $\leq 300\mu\text{s}$, duty cycle $\leq 2\%$.

AP2310GN

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Testconditons	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60V, V _{GS} =0V			10	μA
		V _{DS} =48, V _{GS} =0V, T _J =70°C			25	
Gate-Body leakage current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} I _D =-250μA	1		3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =3A			90	mΩ
		V _{GS} =4.5V, I _D =2A			120	
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =3A		5		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V, f=1MHz		490	780	pF
Output Capacitance	C _{oss}			55		
Reverse Transfer Capacitance	C _{rss}			40		
Total Gate Charge	Q _g	V _{DS} =48V, I _D =3A, V _{GS} =4.5V		6	10	nC
Gate Source Charge	Q _{gs}			1.6		
Gate Drain Charge	Q _{gd}			3		
Turn-On DelayTime	t _{D(on)}	V _{GS} =10V, V _{DS} =30V, I _D =1A R _D =30Ω, R _{GEN} =3.3Ω		6		ns
Turn-On Rise Time	t _r			5		
Turn-Off DelayTime	t _{D(off)}			16		
Turn-Off Fall Time	t _f			3		
Body Diode Reverse Recovery Time	t _{rr}	I _S =3A, dI/dt=100A/μs		25		nC
Body Diode Reverse Recovery Charge	Q _{rr}	I _S =3A, dI/dt=100A/μs		26		
Diode Forward Voltage	V _{SD}	I _S =1.2A, V _{GS} =0V			1.2	V

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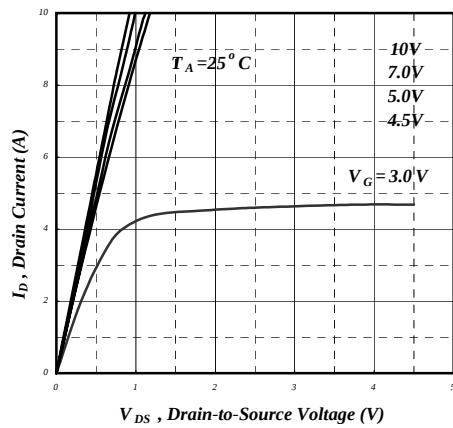


Fig 1. Typical Output Characteristics

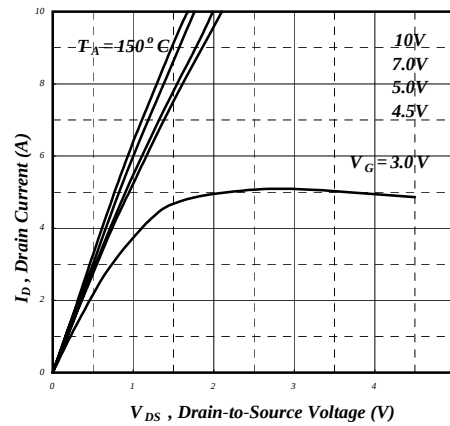


Fig 2. Typical Output Characteristics

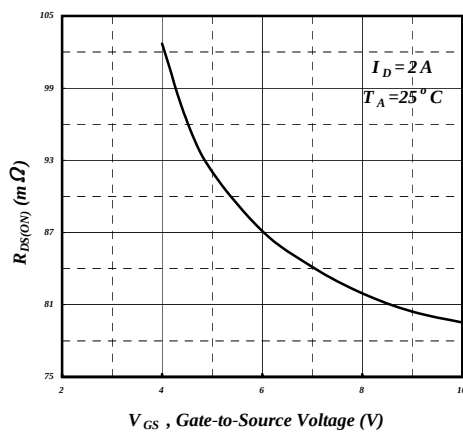


Fig 3. On-Resistance v.s. Gate Voltage

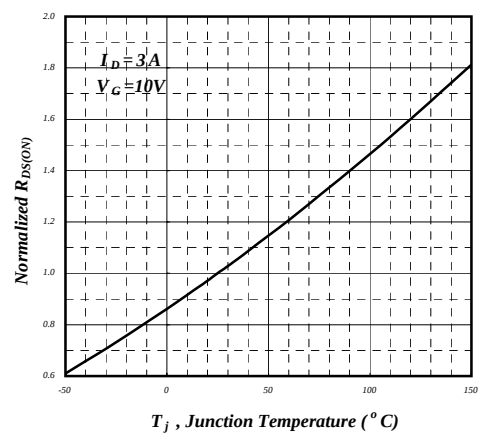


Fig 4. Normalized On-Resistance v.s. Junction Temperature

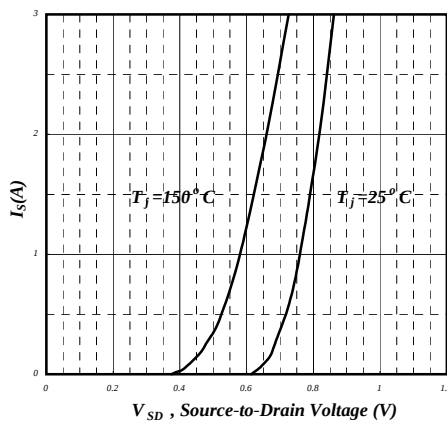


Fig 5. Forward Characteristic of Reverse Diode

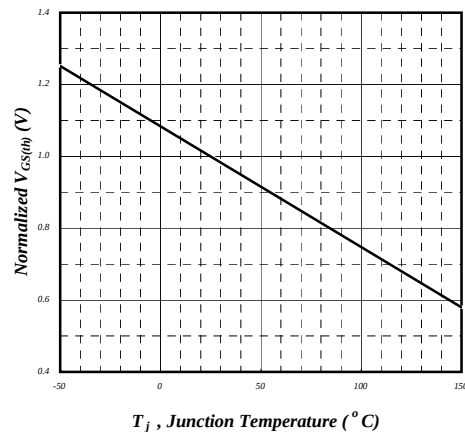


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

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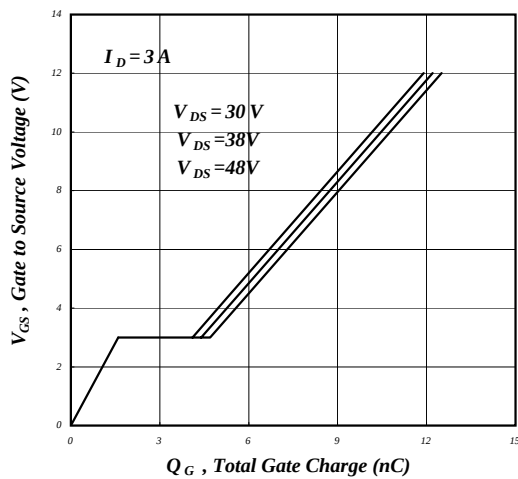


Fig 7. Gate Charge Characteristics

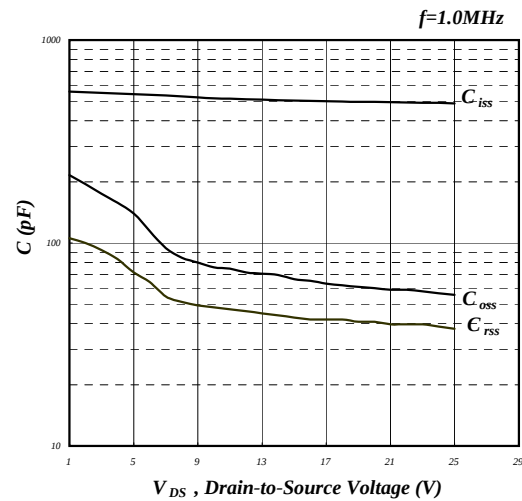


Fig 8. Typical Capacitance Characteristics

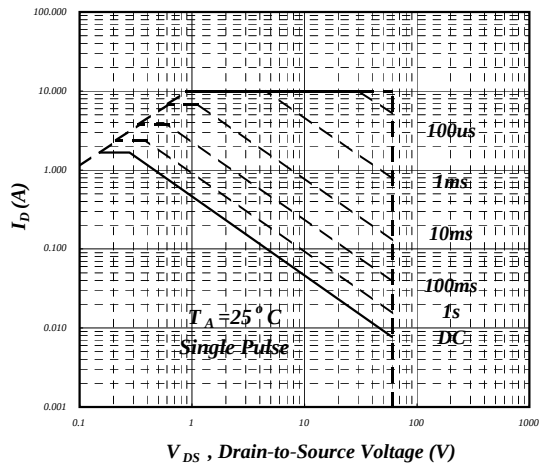


Fig 9. Maximum Safe Operating Area

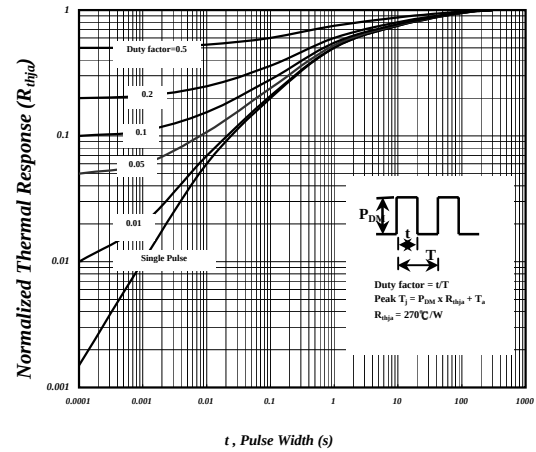


Fig 10. Effective Transient Thermal Impedance