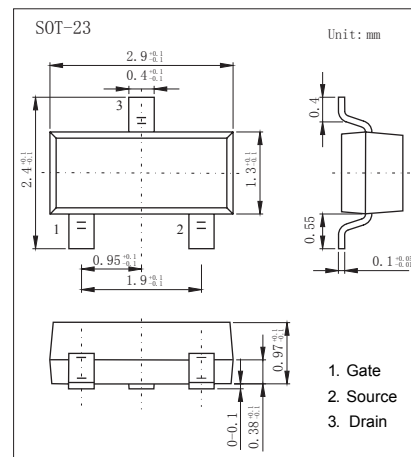
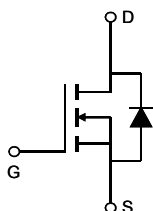


N-Channel MOSFET

AO3400A

Features

- $V_{DS} (V) = 30V$
- $I_D = 5.7 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 26.5m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 32m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 48m\Omega (V_{GS} = 2.5V)$



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	5.7	A
	$T_A = 70^\circ C$		4.7	
Pulsed Drain Current		I_{DM}	30	
Power Dissipation	$T_A = 25^\circ C$	P_D	1.4	W
	$T_A = 70^\circ C$		0.9	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	90	$^\circ C/W$
	Steady-State		125	
Thermal Resistance.Junction- to-Lead		R_{thJL}	80	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO3400A

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 μA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	μA
		V _{DS} =30V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±12V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.65		1.45	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =5.7A			26.5	mΩ
		V _{GS} =10V, I _D =5.7A T _J =125°C			38	
		V _{GS} =4.5V, I _D =5A			32	
		V _{GS} =2.5V, I _D =3A			38	
On State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	30			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5.7A		33		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		630		pF
Output Capacitance	C _{oss}			75		
Reverse Transfer Capacitance	C _{rss}			50		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	1.5		4.5	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =5.7A		6	7	nC
Gate Source Charge	Q _{gs}			1.3		
Gate Drain Charge	Q _{gd}			1.8		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =2.6 Ω, R _G =3 Ω		3		ns
Turn-On Rise Time	t _r			2.5		
Turn-Off DelayTime	t _{d(off)}			25		
Turn-Off Fall Time	t _f			4		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 5.7A, dI/dt= 100A/us		8.5		nC
Body Diode Reverse Recovery Charge	Q _{rr}			2.6		
Maximum Body-Diode Continuous Current	I _S				2	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			1	V

* The static characteristics in Figures 1 to 6 are obtained using <300us pulses, duty cycle 0.5% max.

■ Marking

Marking	X0**
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N-Channel MOSFET

AO3400A

■ Typical Characteristics

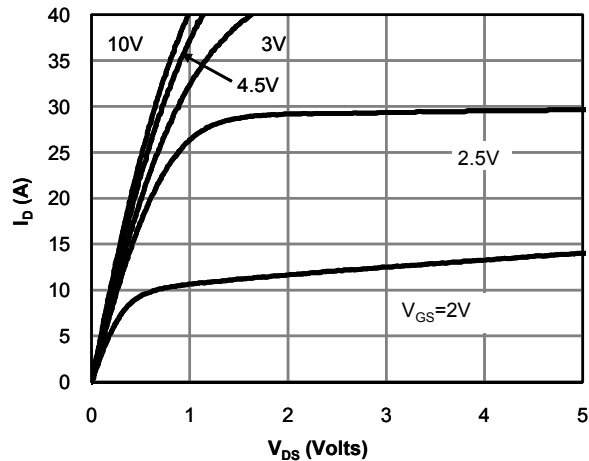


Fig 1: On-Region Characteristics (Note E)

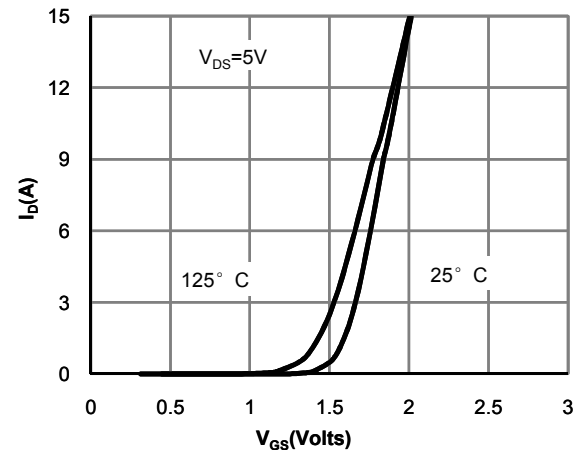


Figure 2: Transfer Characteristics (Note E)

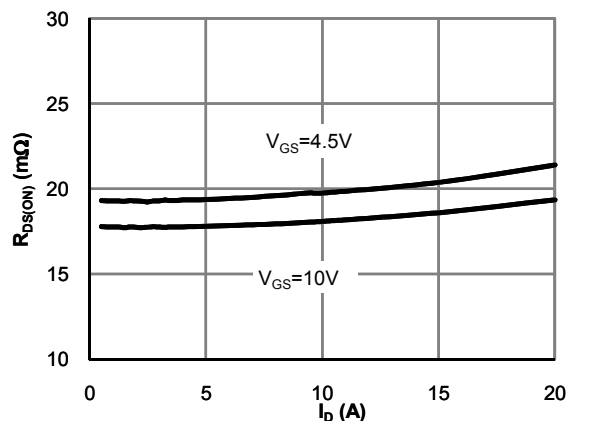


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

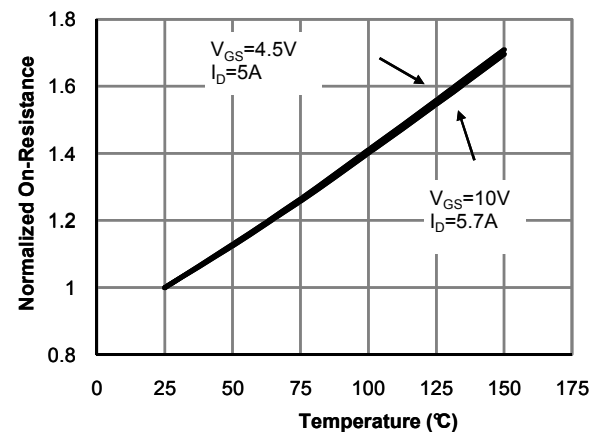


Figure 4: On-Resistance vs. Junction Temperature (Note E)

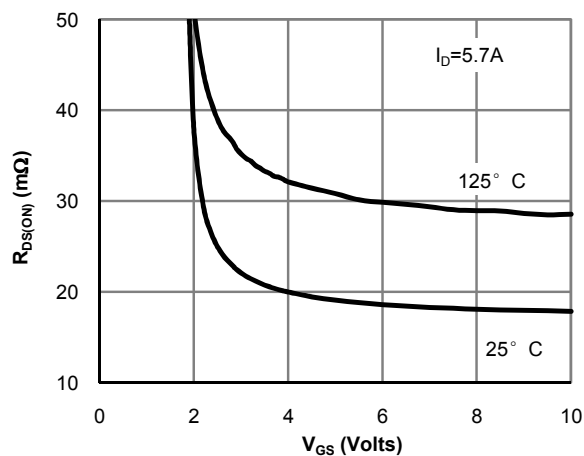


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

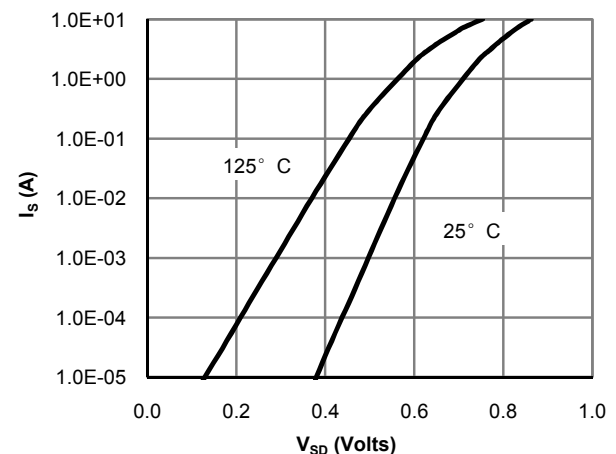


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET

AO3400A

■ Typical Characteristics

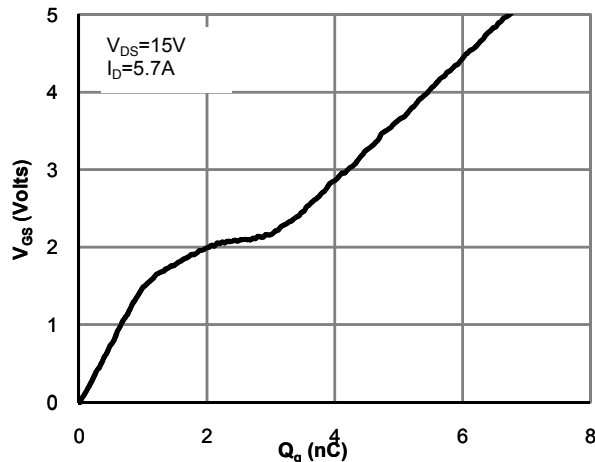


Figure 7: Gate-Charge Characteristics

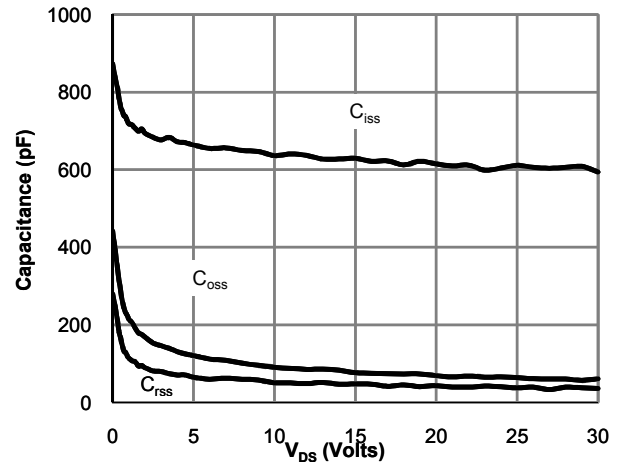


Figure 8: Capacitance Characteristics

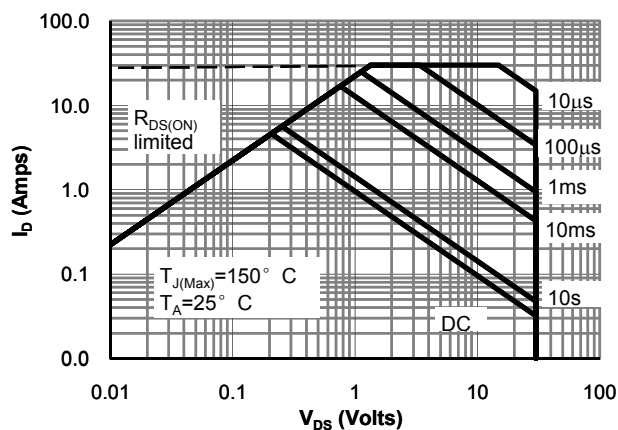


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

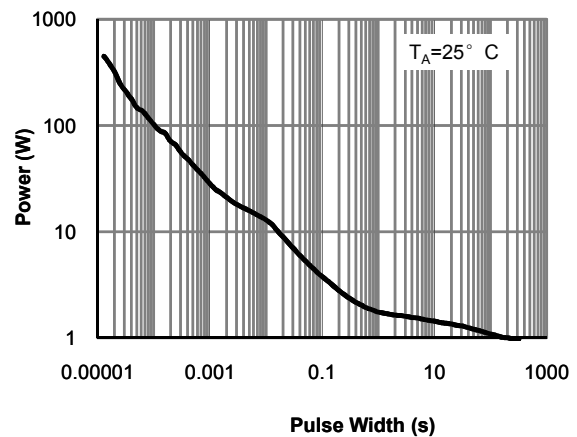


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

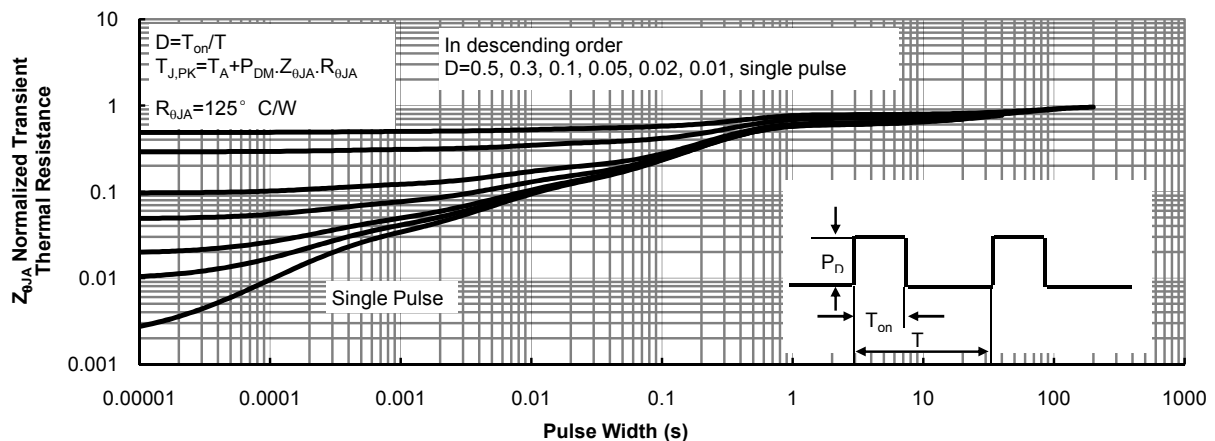


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)