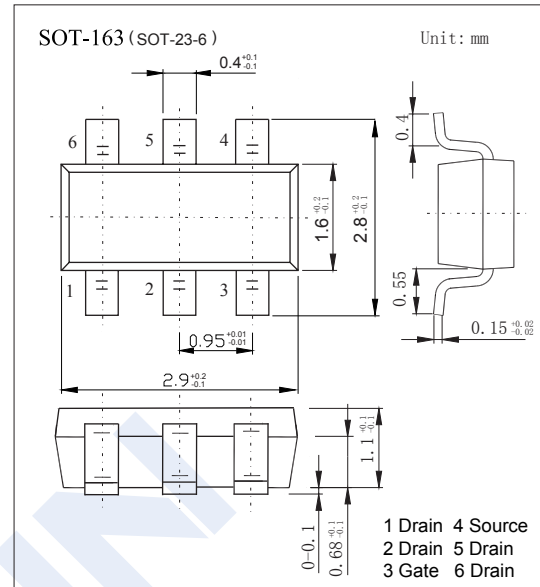
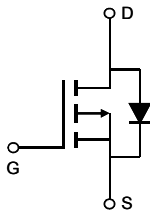


## P-Channel MOSFET

## AO6403 (KO6403)

## ■ Features

- $V_{DS} (V) = -30V$
- $I_D = -6 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 35m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 58m\Omega (V_{GS} = -4.5V)$

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

Parameter	Symbol	Rating	Unit	
Drain-Source Voltage	$V_{DS}$	-30	V	
Gate-Source Voltage	$V_{GS}$	$\pm 20$		
Continuous Drain Current	$I_D$	$T_A = 25^\circ C$	-6	A
		$T_A = 70^\circ C$	-5	
Pulsed Drain Current	$I_{DM}$	-30		
Power Dissipation	$P_D$	$T_A = 25^\circ C$	2	W
		$T_A = 70^\circ C$	1.3	
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	62.5	$^\circ C/W$
		Steady-State	110	
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	50		
Junction Temperature	$T_J$	150	$^\circ C$	
Junction Storage Temperature Range	$T_{stg}$	-55 to 150		

## P-Channel MOSFET

## AO6403 (KO6403)

## ■ 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 μ A, V <sub>GS</sub> =0V	-30			V
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V			-1	μA
		V <sub>DS</sub> =-30V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			-5	
Gate-Body leakage current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =-250 μ A	-1.3		-2.4	V
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A			35	mΩ
		V <sub>GS</sub> =-10V, I <sub>D</sub> =-6A T <sub>J</sub> =125°C			39	
		V <sub>GS</sub> =-4.5V, I <sub>D</sub> =-5A			58	
On state drain current	I <sub>D(ON)</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-5V	-30			A
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =-5V, I <sub>D</sub> =-6A		18		S
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =-15V, f=1MHz		760		pF
Output Capacitance	C <sub>oss</sub>			140		
Reverse Transfer Capacitance	C <sub>rss</sub>			95		
Gate resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz	1.5		5	Ω
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, I <sub>D</sub> =-6A		13.6	16	nC
Total Gate Charge (4.5V)				6.7	8	
Gate Source Charge	Q <sub>gs</sub>			2.5		
Gate Drain Charge	Q <sub>gd</sub>			3.2		
Turn-On DelayTime	t <sub>d(on)</sub>				8	
Turn-On Rise Time	t <sub>r</sub>	V <sub>GS</sub> =-10V, V <sub>DS</sub> =-15V, R <sub>L</sub> =2.7Ω, R <sub>GEN</sub> =3Ω		6		
Turn-Off DelayTime	t <sub>d(off)</sub>			17		
Turn-Off Fall Time	t <sub>f</sub>			5		
Body Diode Reverse Recovery Time	t <sub>rr</sub>			15		
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>	I <sub>F</sub> =-6A, di/dt=100A/μ s		9.7	nC	
Maximum Body-Diode Continuous Current	I <sub>s</sub>				-2.5	A
Diode Forward Voltage	V <sub>SD</sub>	I <sub>s</sub> =-1A, V <sub>GS</sub> =0V			-1	V

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

## ■ Marking

Marking	D3**
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## P-Channel MOSFET AO6403 (KO6403)

■ Typical Characteristics

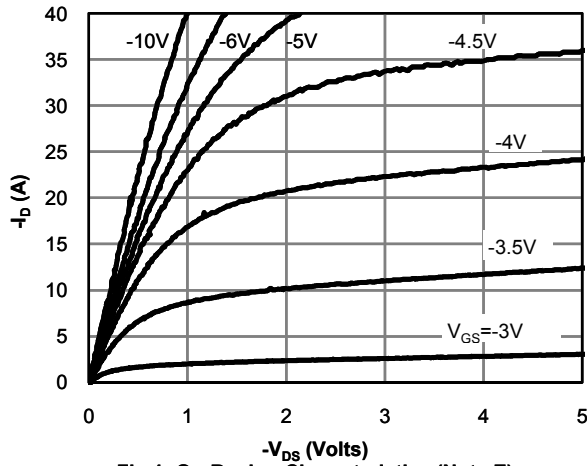


Fig 1: On-Region Characteristics (Note E)

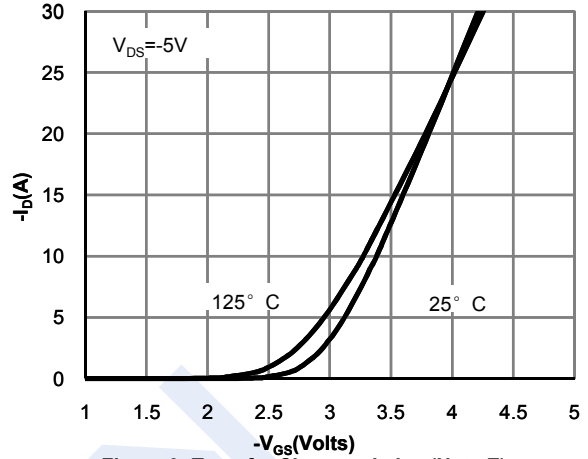


Figure 2: Transfer Characteristics (Note E)

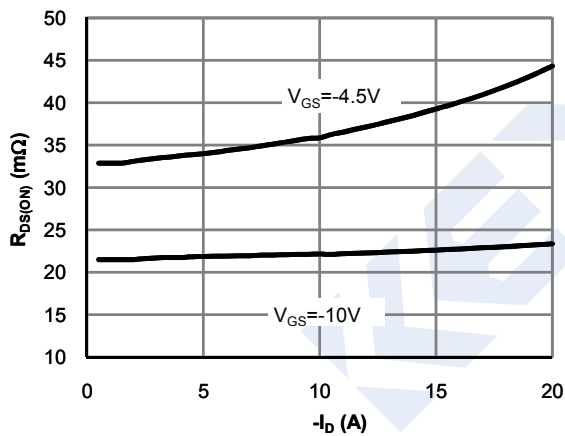


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

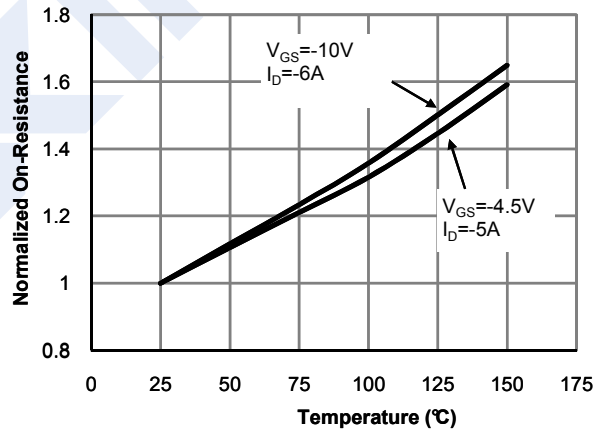


Figure 4: On-Resistance vs. Junction Temperature (Note E)

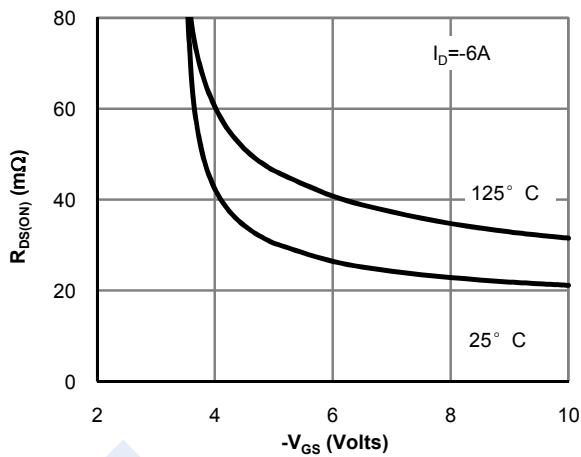


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

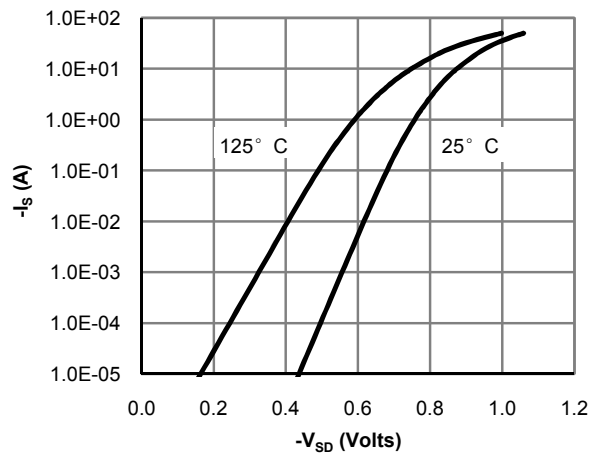


Figure 6: Body-Diode Characteristics (Note E)

## P-Channel MOSFET AO6403 (KO6403)

■ Typical Characteristics

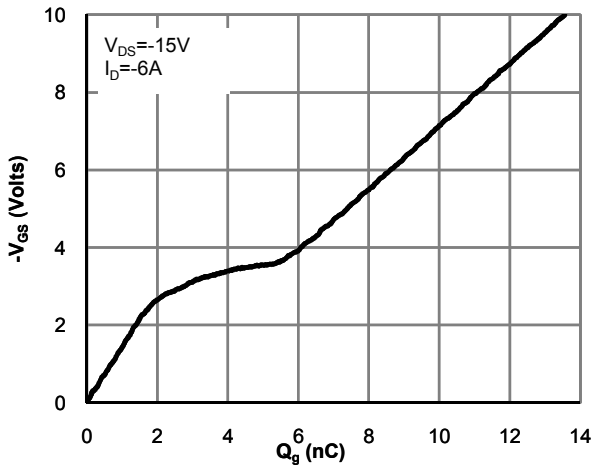


Figure 7: Gate-Charge Characteristics

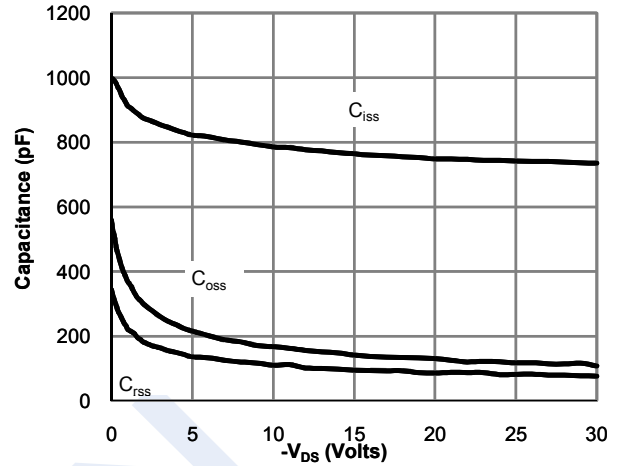


Figure 8: Capacitance Characteristics

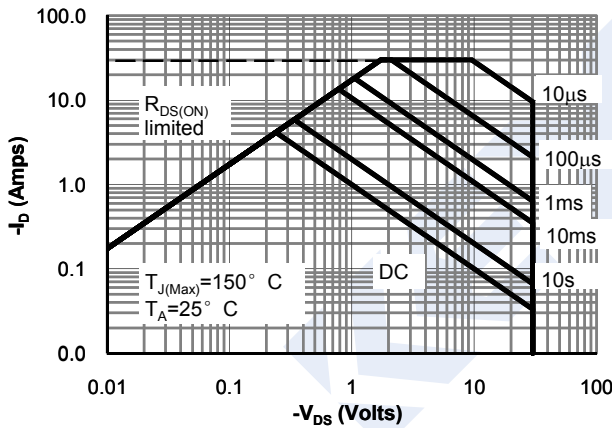


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

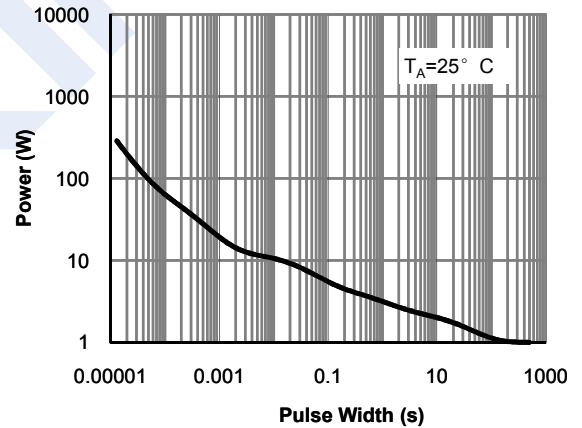


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

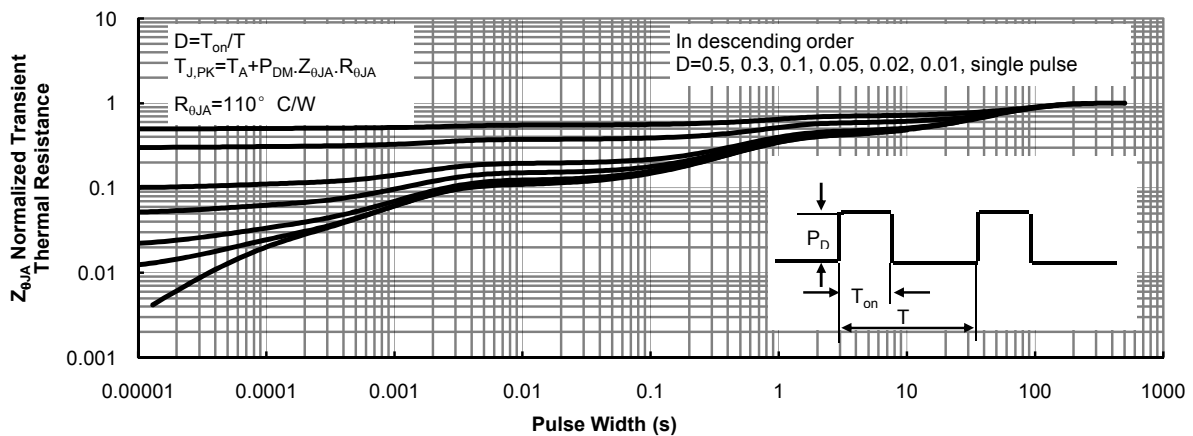


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)