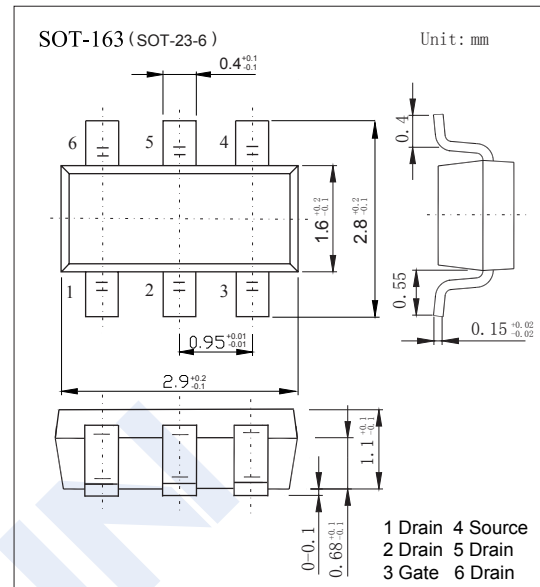
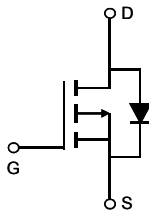


P-Channel MOSFET

AO6405 (KO6405)

■ Features

- $V_{DS} = -30V$
- $I_D = -5 A$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 52m\Omega$ ($V_{GS} = -10V$)
- $R_{DS(ON)} < 87m\Omega$ ($V_{GS} = -4.5V$)

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	± 20	
Continuous Drain Current	I_D	$T_A = 25^\circ C$	-5
		$T_A = 70^\circ C$	-4.2
Pulsed Drain Current	I_{DM}	-20	A
Power Dissipation	P_D	$T_A = 25^\circ C$	2
		$T_A = 70^\circ C$	1.3
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	62.5
		Steady-State	110
Thermal Resistance.Junction- to-Lead	R_{thJL}	50	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Junction Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel MOSFET

AO6405 (KO6405)

■ 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} =±20V			±100	nA	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250 μA	-1.4		-2.4	V	
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-5A			52	mΩ	
		V _{GS} =-10V, I _D =-5A T _J =125°C			70		
		V _{GS} =-4.5V, I _D =-4A			87		
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-20			A	
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-5A		10		S	
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		520		pF	
Output Capacitance	C _{oss}			100			
Reverse Transfer Capacitance	C _{rss}			65			
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	3.5		11.5	Ω	
Total Gate Charge (10V)	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-5A		9.2	11	nC	
Total Gate Charge (4.5V)				4.6	6		
Gate Source Charge			Q _{gs}		1.6		
Gate Drain Charge			Q _{gd}		2.2		
Turn-On DelayTime	t _{d(on)}	V _{GS} =-10V, V _{DS} =-15V, R _L =3Ω, R _{GEN} =3Ω		7.5		ns	
Turn-On Rise Time	t _r			5.5			
Turn-Off DelayTime	t _{d(off)}			19			
Turn-Off Fall Time	t _f			7			
Body Diode Reverse Recovery Time	t _{rr}	I _F =-5A, di/dt=100A/μs		11		nC	
Body Diode Reverse Recovery Charge	Q _{rr}			5.3			
Maximum Body-Diode Continuous Current	I _S				-2.5	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	D5**
---------	------

P-Channel MOSFET AO6405 (KO6405)

■ Typical Characteristics

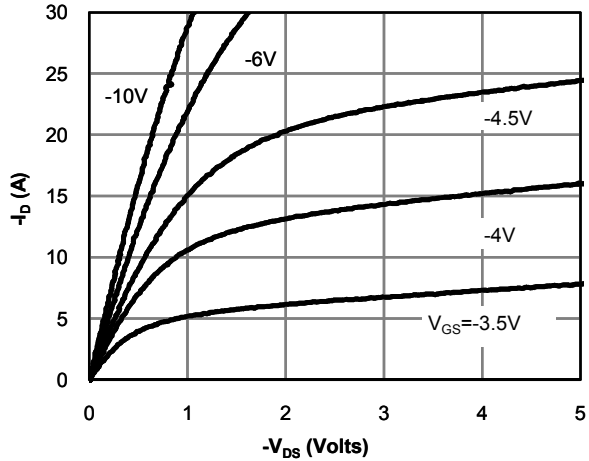


Figure 1: On-Region Characteristics (Note E)

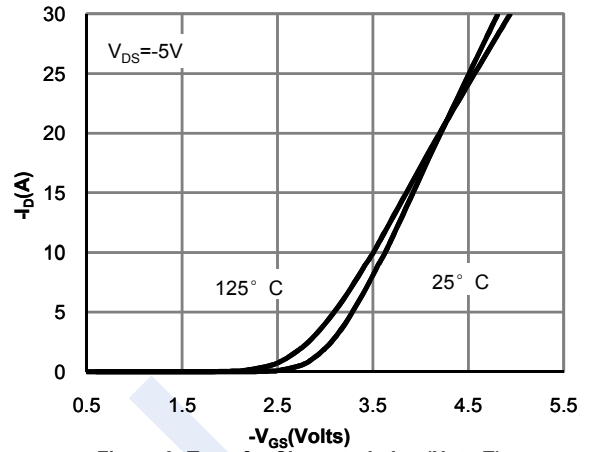


Figure 2: Transfer Characteristics (Note E)

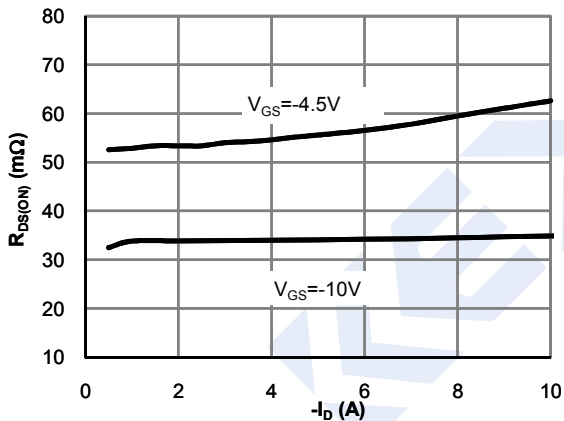


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

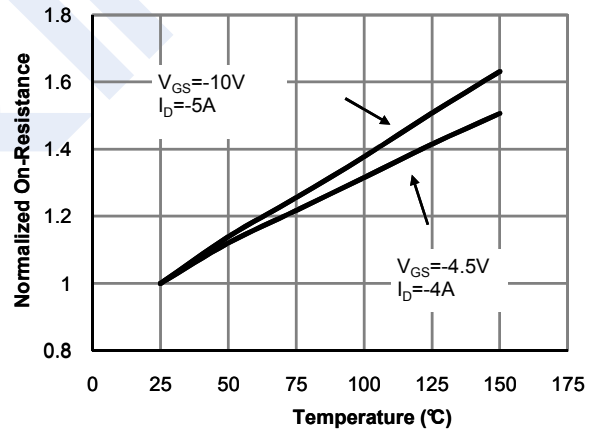


Figure 4: On-Resistance vs. Junction Temperature (Note E)

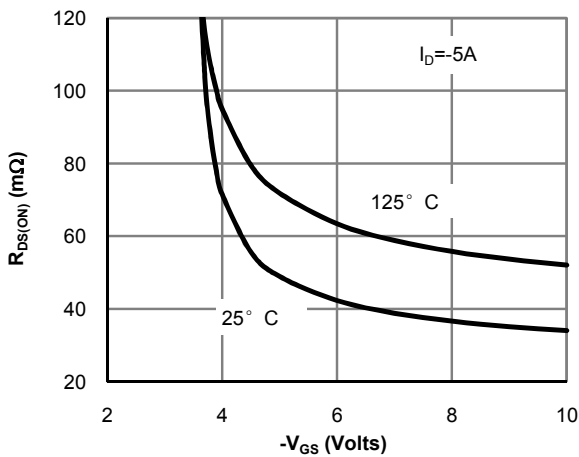


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

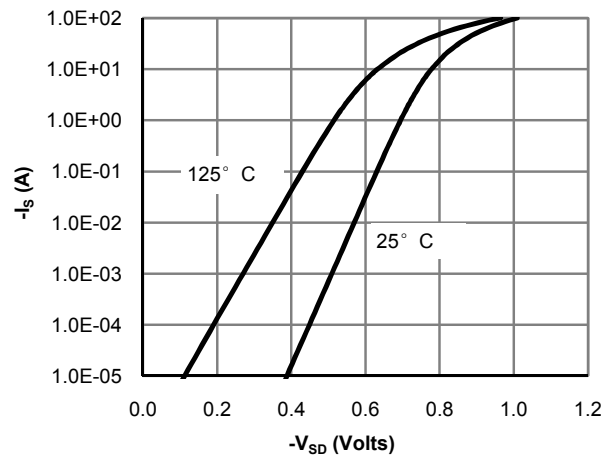


Figure 6: Body-Diode Characteristics (Note E)

P-Channel MOSFET AO6405 (KO6405)

■ Typical Characteristics

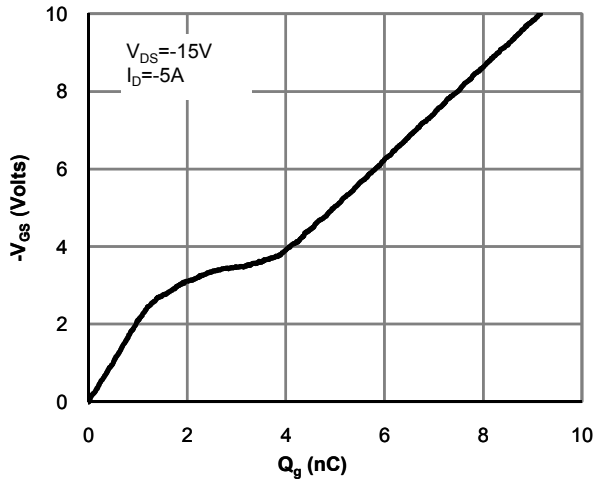


Figure 7: Gate-Charge Characteristics

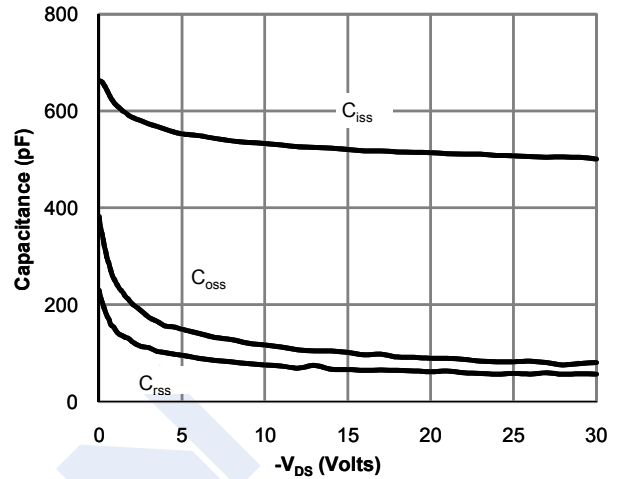


Figure 8: Capacitance Characteristics

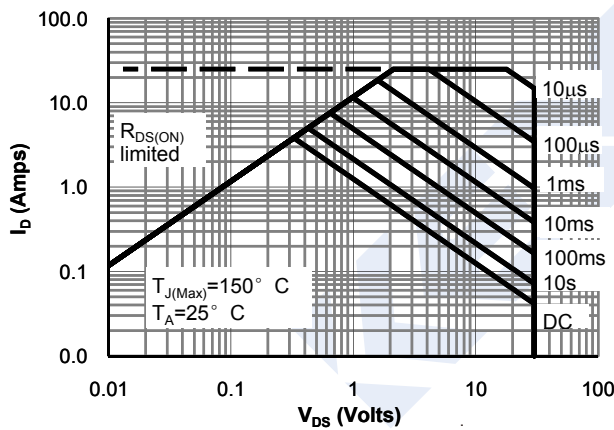


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

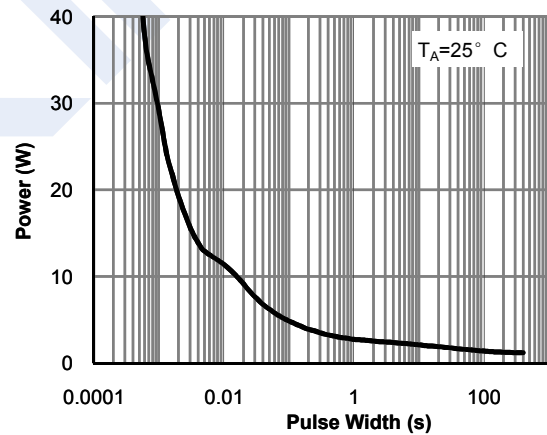


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

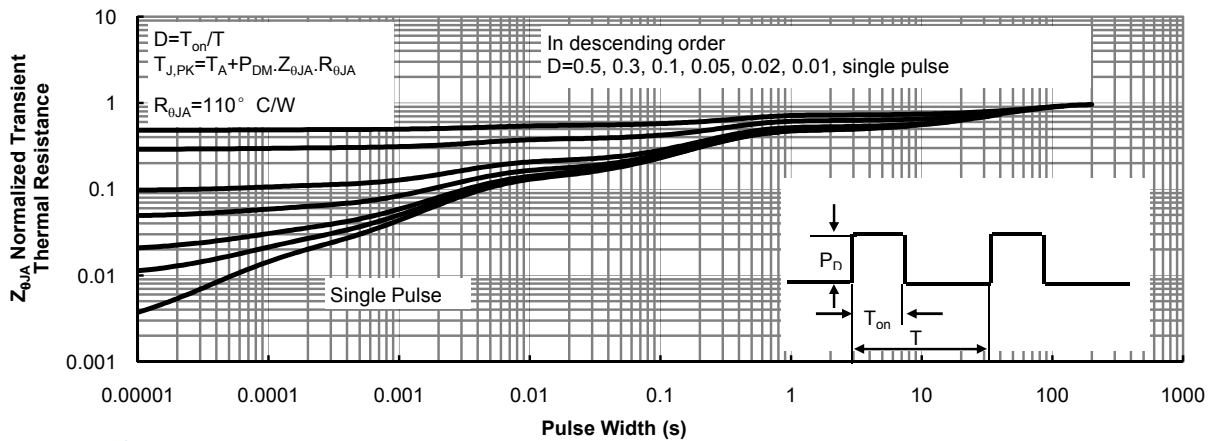


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)