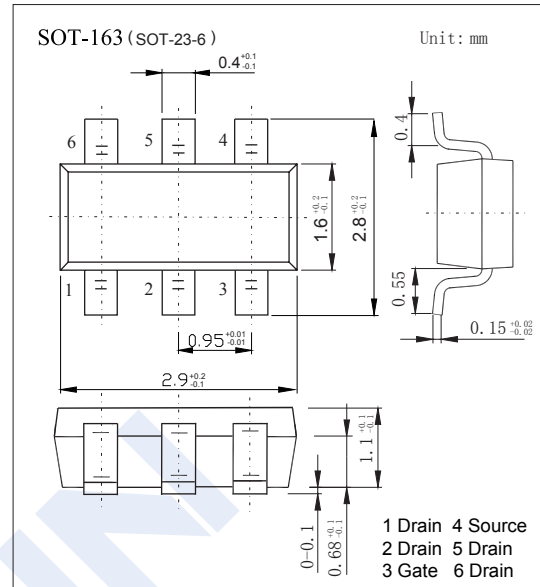
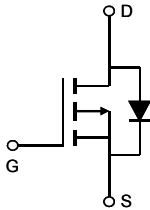


P-Channel MOSFET

AO6401-HF (KO6401-HF)

■ Features

- $V_{DS} (V) = -30V$
- $I_D = -5 A (V_{GS} = -10V)$
- $R_{DS(ON)} < 47m\Omega (V_{GS} = -10V)$
- $R_{DS(ON)} < 64m\Omega (V_{GS} = -4.5V)$
- $R_{DS(ON)} < 85m\Omega (V_{GS} = -2.5V)$
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



■ 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	I_D	$T_A = 25^\circ C$	-5	A
		$T_A = 70^\circ C$	-4	
Pulsed Drain Current	I_{DM}	-28		
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

AO6401-HF (K06401-HF)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =-250 μ A, 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 μ A	-0.5		-1.3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =-10V, I _D =-5A			47	mΩ
		V _{GS} =-10V, I _D =-5A T _J =125°C			74	
		V _{GS} =-4.5V, I _D =-4A			64	
		V _{GS} =-2.5V, I _D =-1A			85	
On state drain current	I _{D(ON)}	V _{GS} =-10V, V _{DS} =-5V	-28			A
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-5A		18		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =-15V, f=1MHz		645	780	pF
Output Capacitance	C _{oss}			80		
Reverse Transfer Capacitance	C _{rss}			55	80	
Gate resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	4		12	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =-10V, V _{DS} =-15V, I _D =-5A		14	17	nC
Total Gate Charge (4.5V)				7	8.5	
Gate Source Charge	Q _{gs}			1.5		
Gate Drain Charge	Q _{gd}			2.5		
Turn-On DelayTime	t _{d(on)}		V _{GS} =-10V, V _{DS} =-15V, R _L =3Ω, R _{GEN} =3Ω		6.5	
Turn-On Rise Time	t _r			3.5		
Turn-Off DelayTime	t _{d(off)}			41		
Turn-Off Fall Time	t _f			9		
Body Diode Reverse Recovery Time	t _{rr}	I _F =-5A, di/dt=100A/μ s		11	13.5	nC
Body Diode Reverse Recovery Charge	Q _{rr}			3.5		
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	D1** _F
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P-Channel MOSFET AO6401-HF (K06401-HF)

■ Typical Characteristics

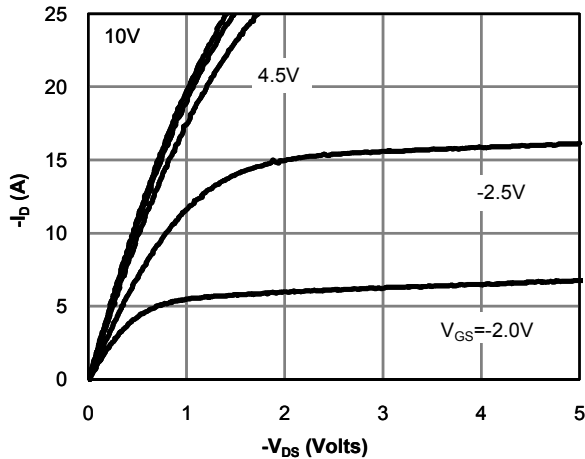


Fig 1: On-Region Characteristics (Note E)

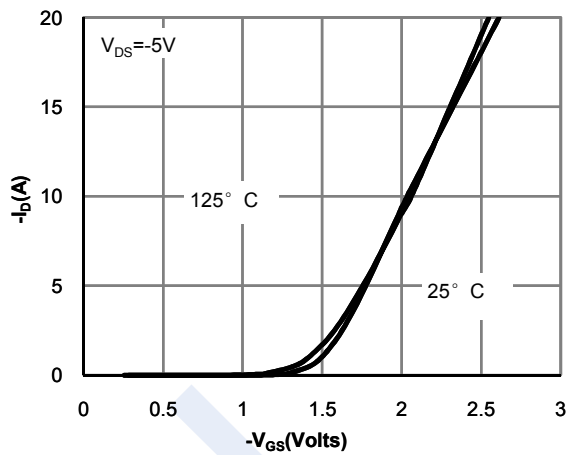


Figure 2: Transfer Characteristics (Note E)

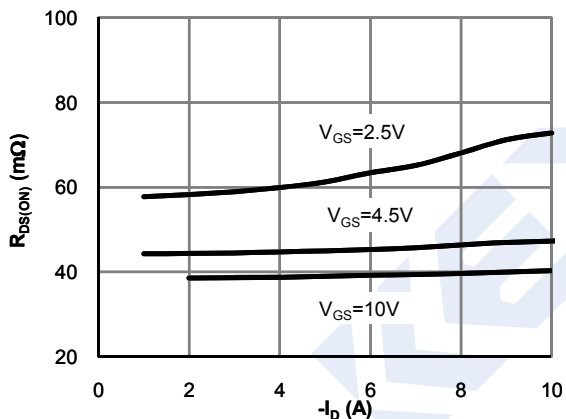


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

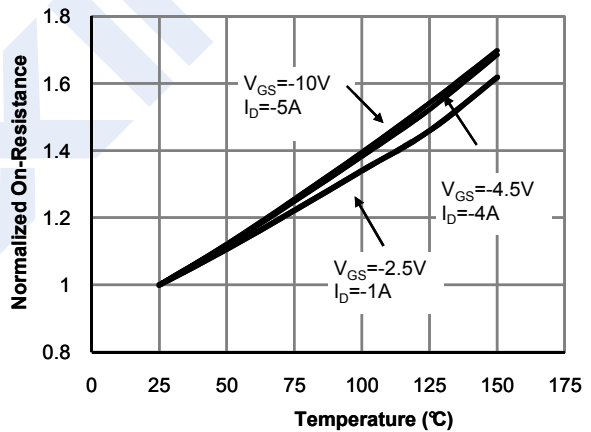


Figure 4: On-Resistance vs. Junction Temperature (Note E)

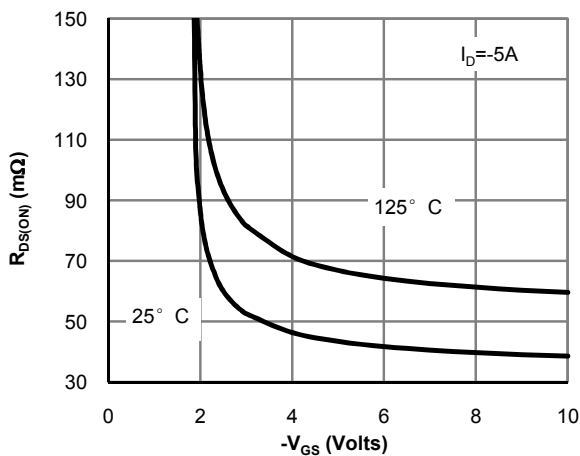


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

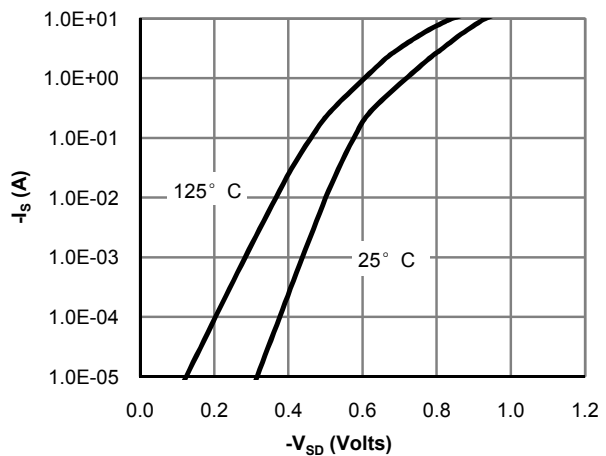


Figure 6: Body-Diode Characteristics (Note E)

P-Channel MOSFET AO6401-HF (K06401-HF)

■ Typical Characteristics

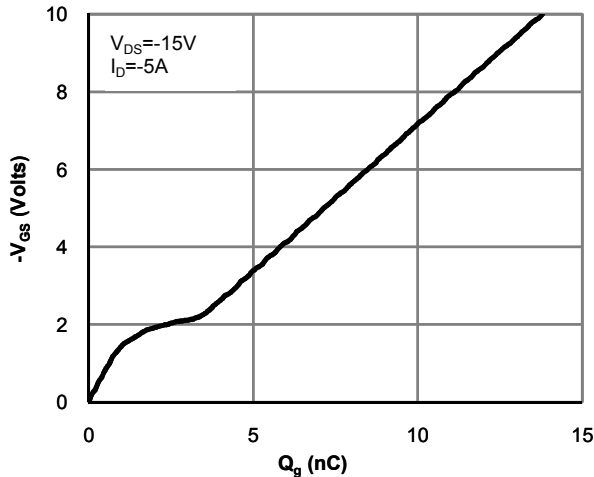


Figure 7: Gate-Charge Characteristics

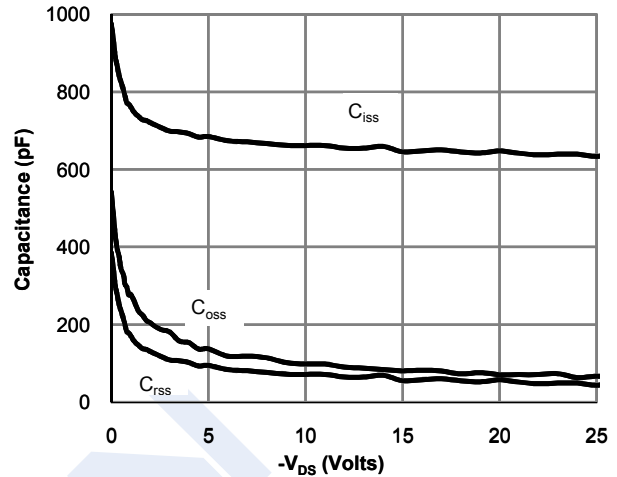


Figure 8: Capacitance Characteristics

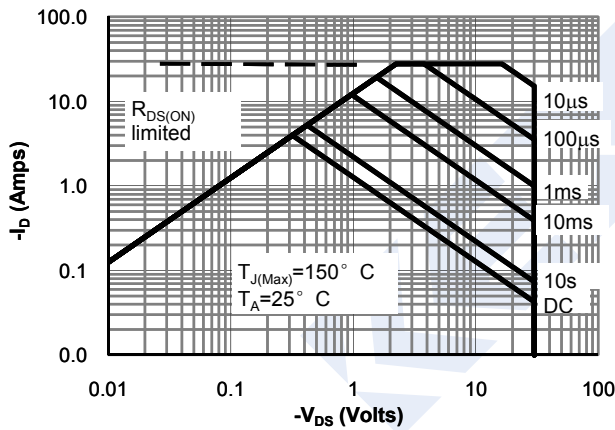


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

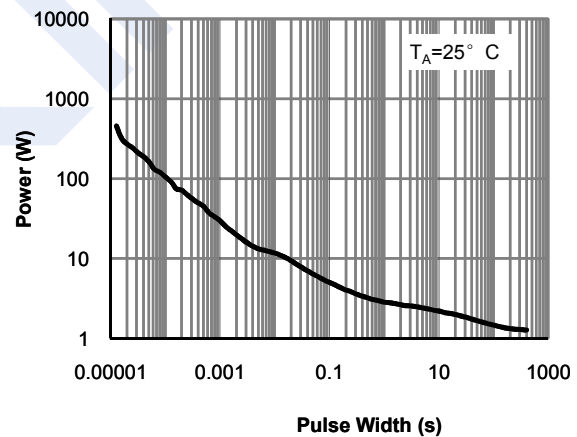


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

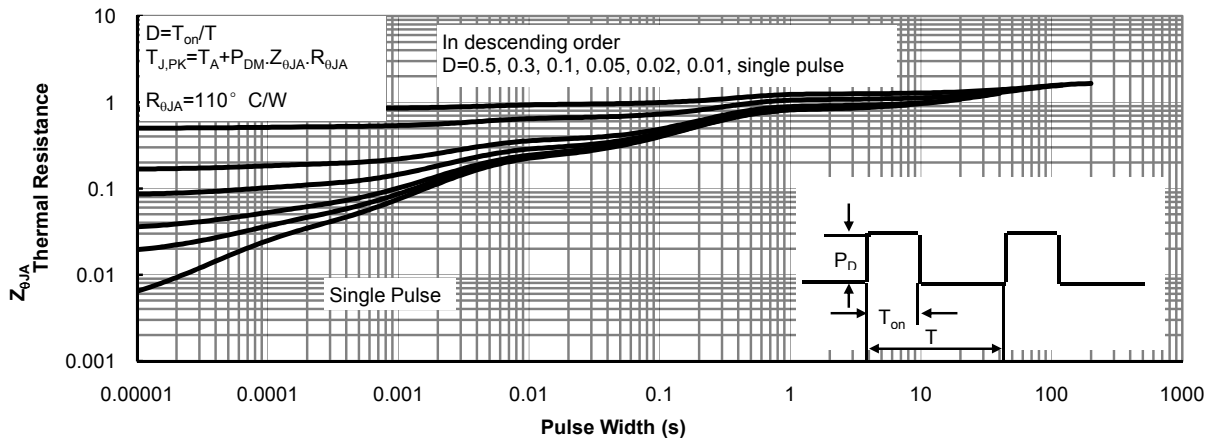


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)