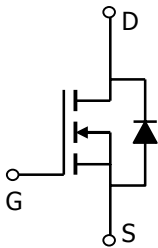
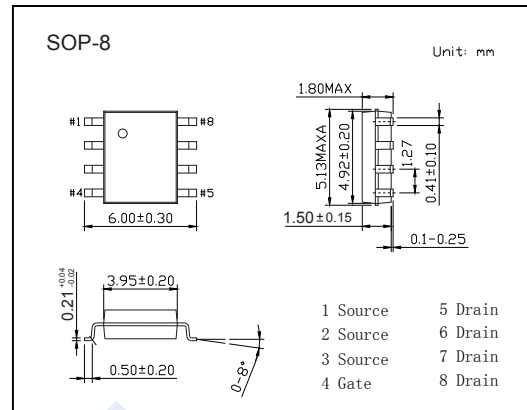


N-Channel MOSFET

AO4404-HF (KO4404-HF)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 8.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 24m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 30m\Omega (V_{GS} = 4.5V)$
- $R_{DS(ON)} < 48m\Omega (V_{GS} = 2.5V)$
- 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	$T_A=25^\circ C$	A	
		$T_A=70^\circ C$		
Pulsed Drain Current	I_{DM}	60	A	
Avalanche Current	I_{AS}	15		
Avalanche energy	$L=0.1mH$	E_{AS}	34	mJ
Power Dissipation	P_D	$T_A=25^\circ C$	3	W
		$T_A=70^\circ C$	2.1	
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	40	$^\circ C/W$
		Steady-State	75	
Thermal Resistance.Junction- to-Lead	R_{thJL}	24	$^\circ C$	
Junction Temperature	T_J	150		
Storage Temperature Range	T_{stg}	-55 to 150		

N-Channel MOSFET

AO4404-HF (KO4404-HF)

■ 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 =250μA	0.7		1.4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8.5A			24	mΩ
		V _{GS} =10V, I _D =8.5A T _J =125°C			36	
		V _{GS} =4.5V, I _D =8.5A			30	
		V _{GS} =2.5V, I _D =5A			48	
On State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	40			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		857	1050	pF
Output Capacitance	C _{oss}			97		
Reverse Transfer Capacitance	C _{rss}			71	100	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.7		2	Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =15V, I _D =8.5A		9.7	12	nC
Gate Source Charge	Q _{gs}			1.63		
Gate Drain Charge	Q _{gd}			3.1		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =15V, R _L =1.8Ω, R _{GEN} =6Ω		3.3	5	ns
Turn-On Rise Time	t _r			4.7	7	
Turn-Off DelayTime	t _{d(off)}			26	39	
Turn-Off Fall Time	t _f			4.1	6.2	
Body Diode Reverse Recovery Time	t _{rr}	I _F = 5A, di/dt= 100A/us		15	20	nC
Body Diode Reverse Recovery Charge	Q _{rr}			8.6	12	
Maximum Body-Diode Continuous Current	I _S				4.3	A
Diode Forward Voltage	V _{SD}	I _S =1A, V _{GS} =0V			1	V

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

■ Marking

Marking	4404 KC**** F
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N-Channel MOSFET AO4404-HF (KO4404-HF)

■ Typical Characteristics

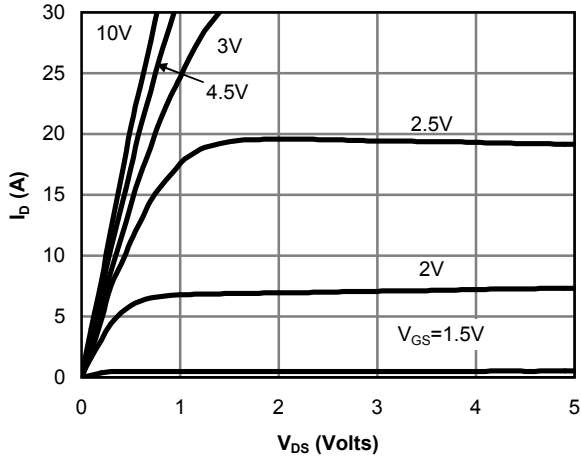


Fig 1: On-Region Characteristics

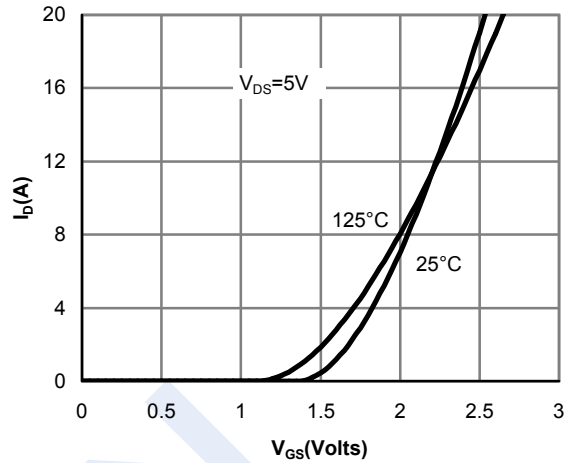


Figure 2: Transfer Characteristics

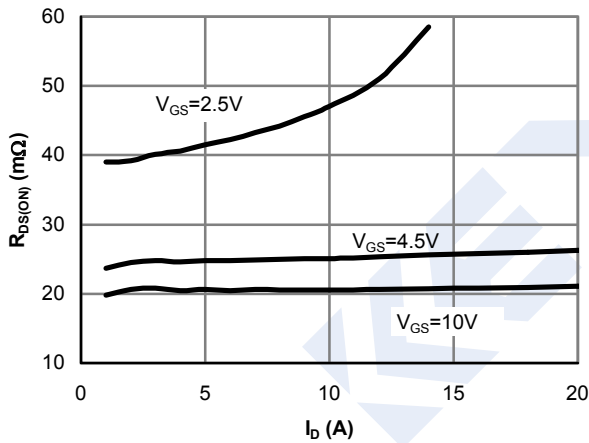


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

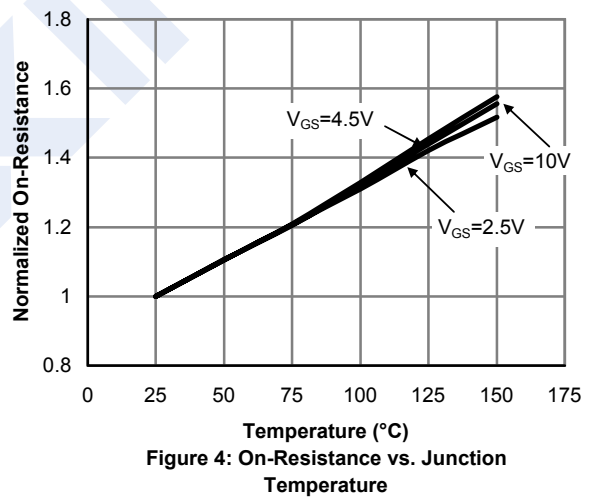


Figure 4: On-Resistance vs. Junction Temperature

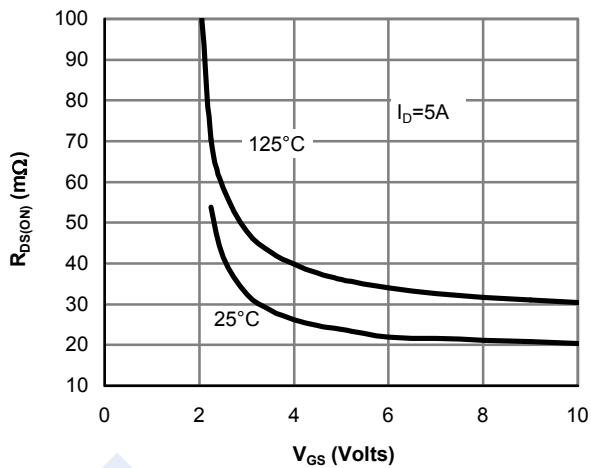


Figure 5: On-Resistance vs. Gate-Source Voltage

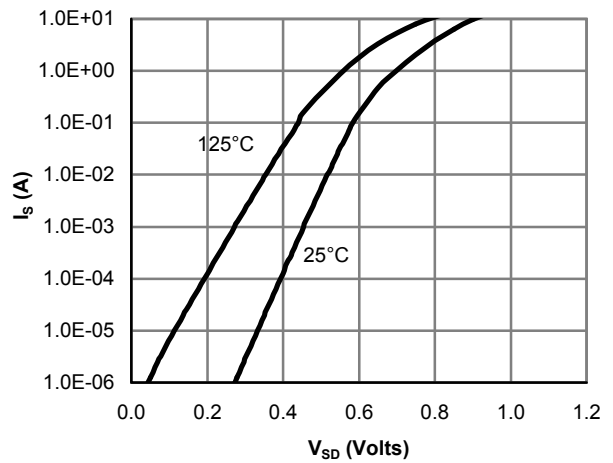


Figure 6: Body-Diode Characteristics

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■ Typical Characteristics

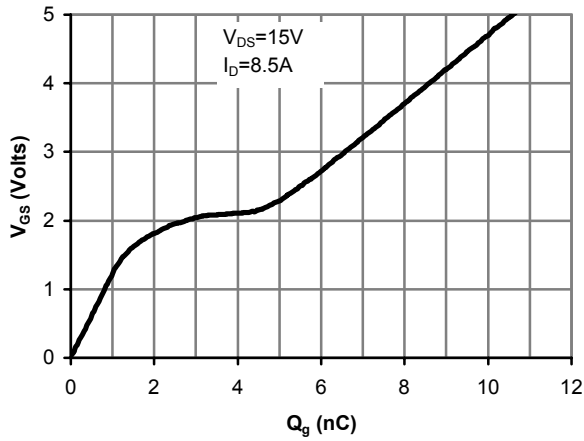


Figure 7: Gate-Charge Characteristics

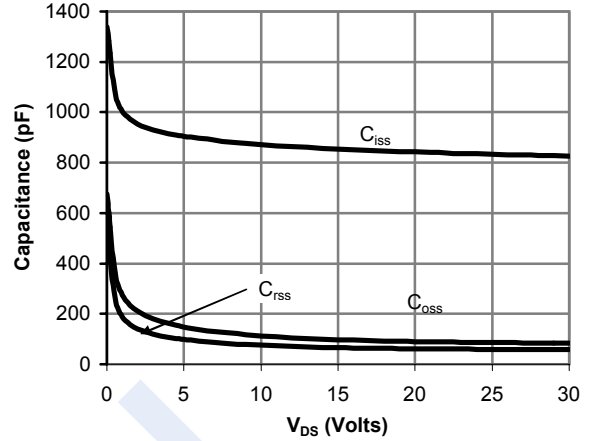


Figure 8: Capacitance Characteristics

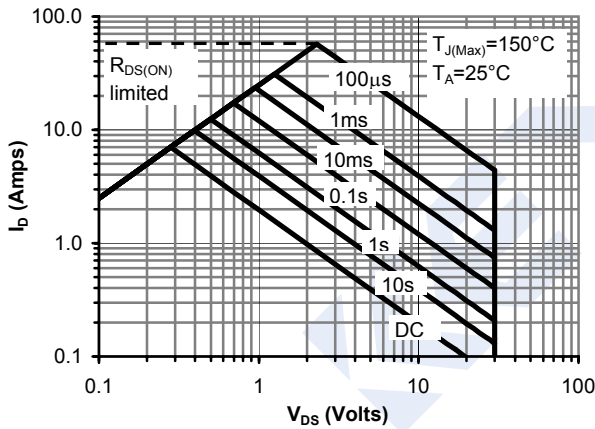


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

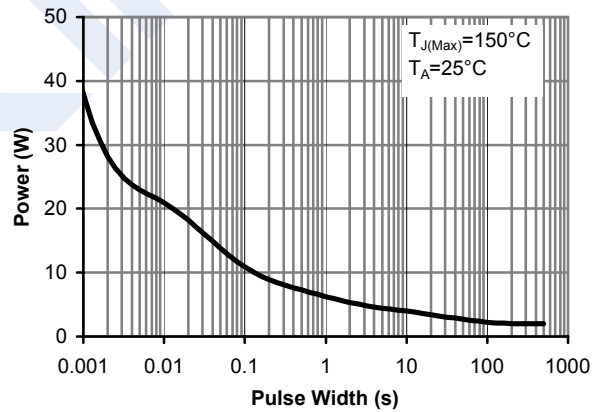


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

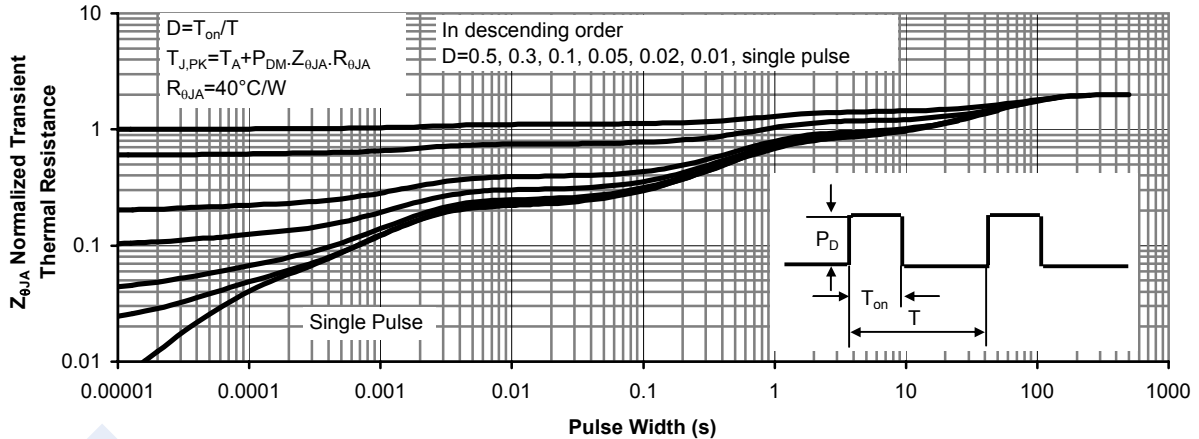


Figure 11: Normalized Maximum Transient Thermal Impedance