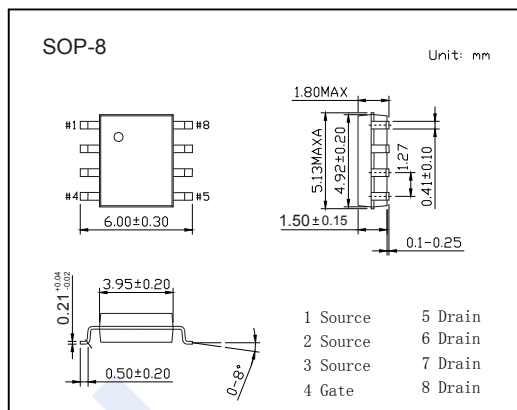
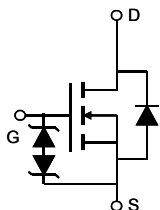


N-Channel MOSFET

AO4302-HF (KO4302-HF)

■ Features

- V_{DS} (V) = 30V
- I_D = 23 A (V_{GS} = 10V)
- $R_{DS(ON)}$ < 4m Ω (V_{GS} = 10V)
- $R_{DS(ON)}$ < 5m Ω (V_{GS} = 4.5V)
- ESD Rating: 2000V HBM
- Pb-Free Package May be Available. The G-Suffix Denotes a Pb-Free Lead Finish



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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	30	V
Gate-Source Voltage		V_{GS}	± 20	
Continuous Drain Current	$T_A = 25^\circ\text{C}$	I_D	23	A
	$T_A = 70^\circ\text{C}$		18	
Pulsed Drain Current		I_{DM}	316	
Avalanche Current		I_{AS}, I_{AR}	49	mJ
Avalanche energy	$L = 0.1\text{mH}$	E_{AS}, E_{AR}	120	
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	3.6	W
	$T_A = 70^\circ\text{C}$		2.3	
Thermal Resistance.Junction- to-Ambient	$t \leq 10\text{s}$	R_{thJA}	35	$^\circ\text{C/W}$
	Steady-State		65	
Thermal Resistance.Junction- to-Lead		R_{thJL}	15	
Junction Temperature		T_J	150	$^\circ\text{C}$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO4302-HF (KO4302-HF)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250 uA, V _{GS} =0V	30			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =30V, V _{GS} =0V			1	uA
		V _{DS} =30V, V _{GS} =0V, T _J =55°C			5	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±20V			±10	uA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250uA	1.3		2.3	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =20A			4	mΩ
		V _{GS} =10V, I _D =20A T _J =125°C			6	
		V _{GS} =4.5V, I _D =18A			5	
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	316			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =20A		120		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz	2310		3470	pF
Output Capacitance	C _{oss}		330		620	
Reverse Transfer Capacitance	C _{rss}		150		360	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.7		2.4	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =20A	41		63	nC
Total Gate Charge (4.5V)			19		30	
Gate Source Charge	Q _{gs}			7.5		
Gate Drain Charge	Q _{gd}			10.9		
Turn-On DelayTime	t _{d(on)}			7		
Turn-On Rise Time	t _r	V _{GS} =10V, V _{DS} =15V, R _L =0.75Ω, R _{GEN} =3Ω		4.8		ns
Turn-Off DelayTime	t _{d(off)}			41.5		
Turn-Off Fall Time	t _f			8.8		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 20A, di/dt= 500A/us	11		17	nC
Body Diode Reverse Recovery Charge	Q _{rr}		24		37	
Maximum Body-Diode Continuous Current	I _S				5	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	4302 KC**** F
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N-Channel MOSFET

AO4302-HF (KO4302-HF)

■ Typical Characteristics

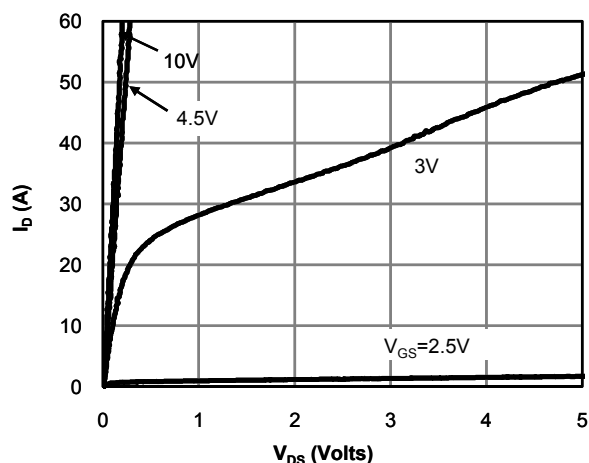


Fig 1: On-Region Characteristics (Note E)

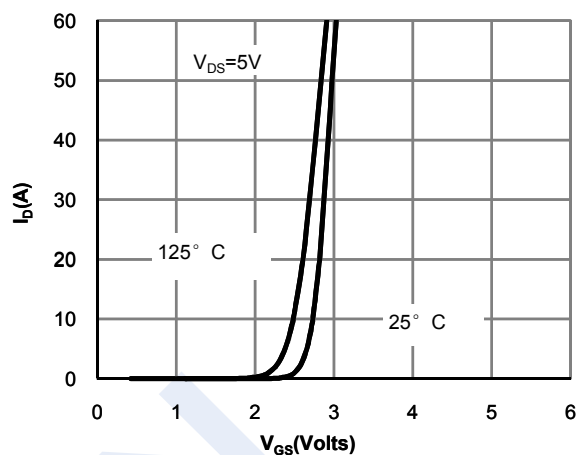


Figure 2: Transfer Characteristics (Note E)

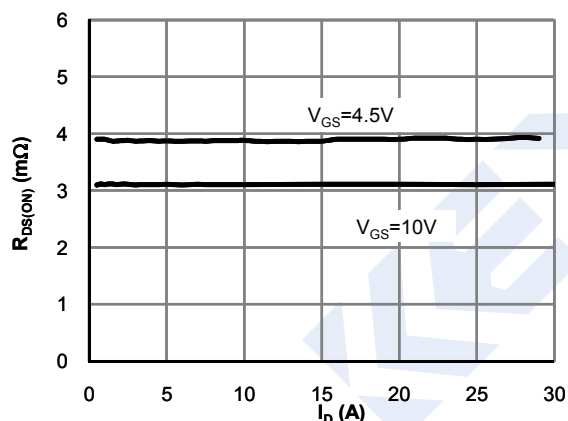


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

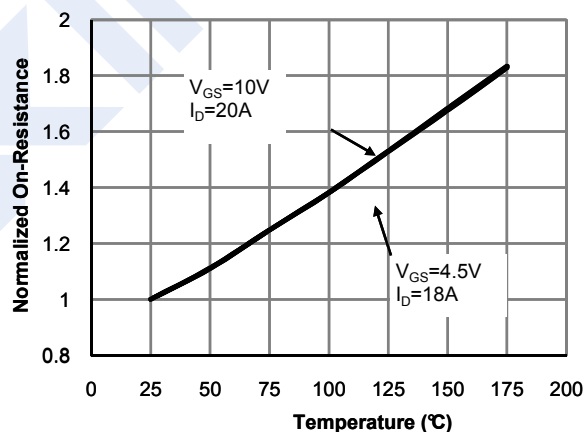


Figure 4: On-Resistance vs. Junction Temperature (Note E)

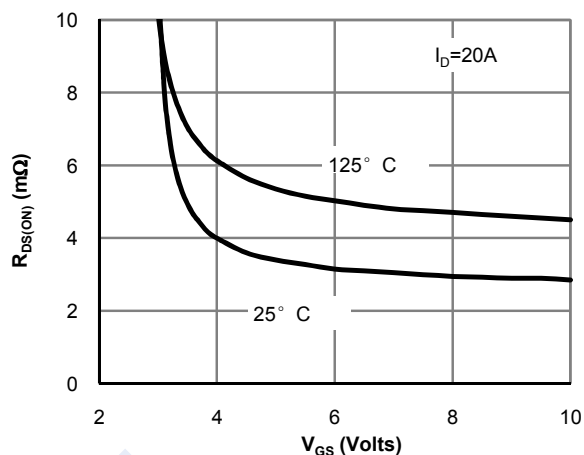


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

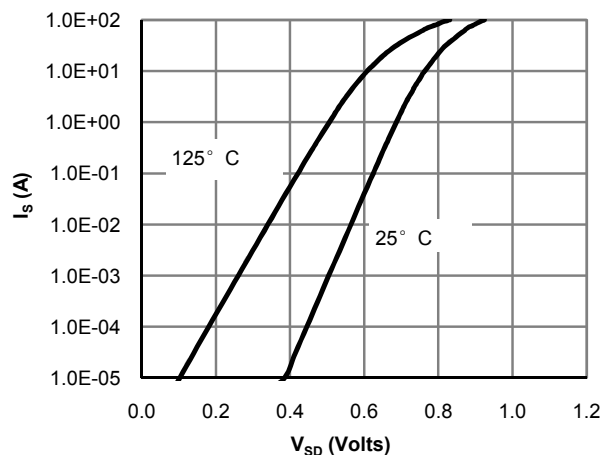
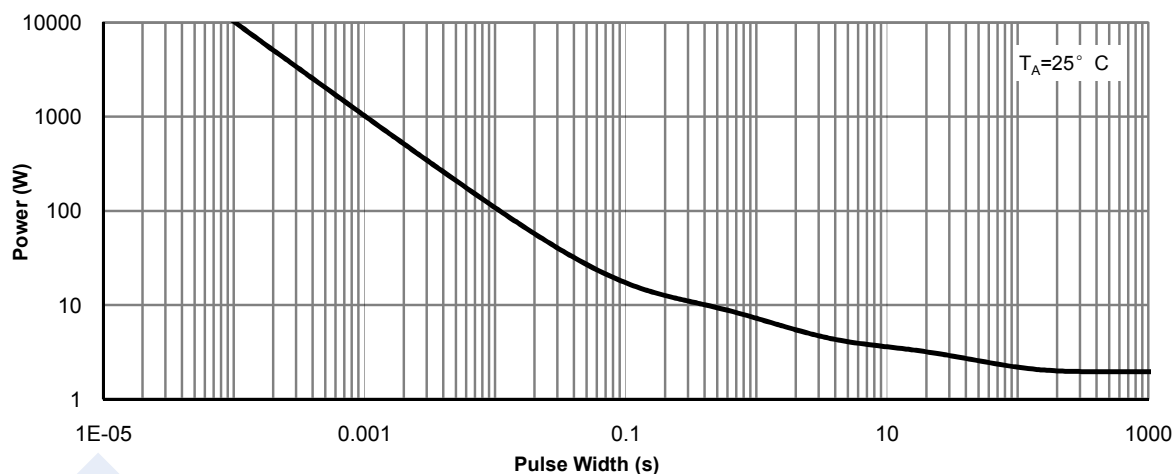
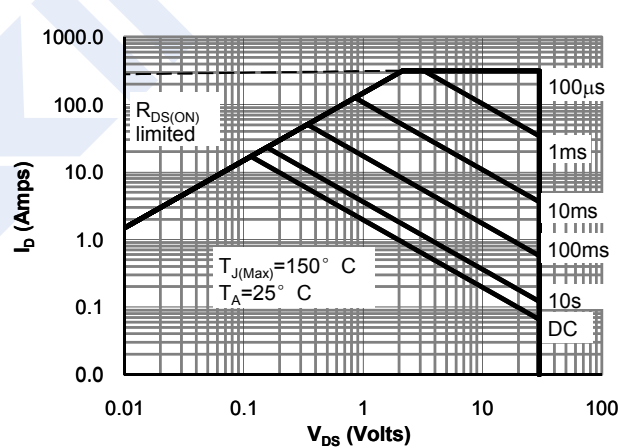
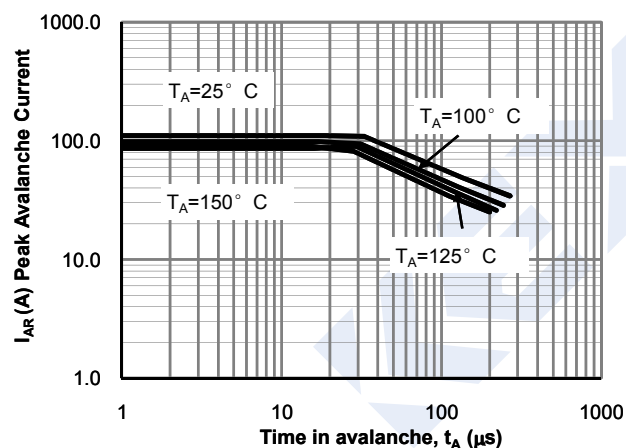
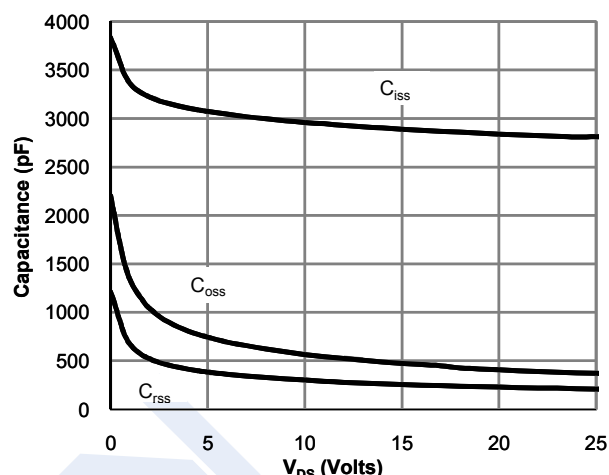
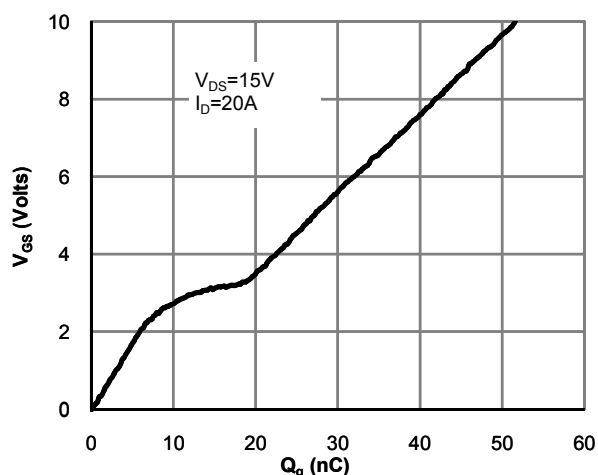


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET

AO4302-HF (KO4302-HF)

■ Typical Characteristics



N-Channel MOSFET

AO4302-HF (KO4302-HF)

■ Typical Characteristics

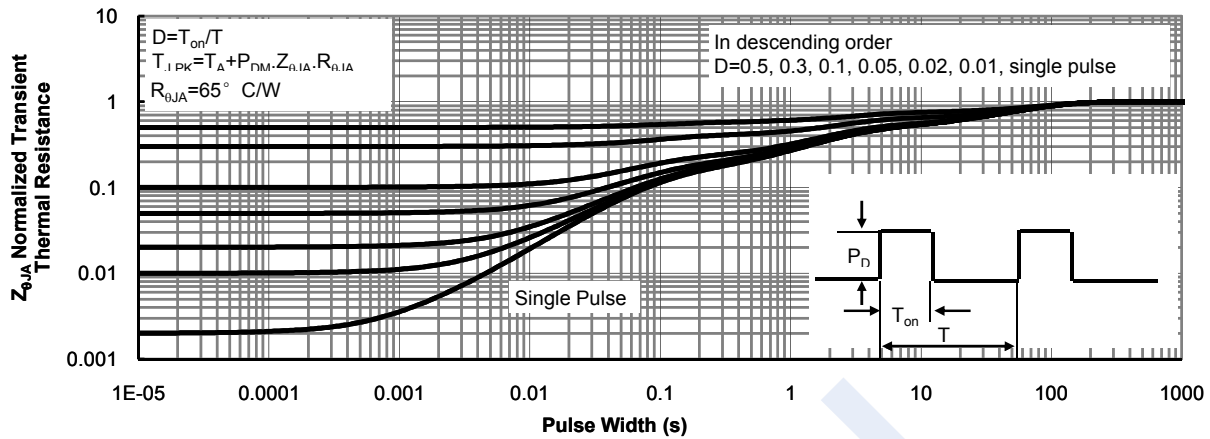


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)