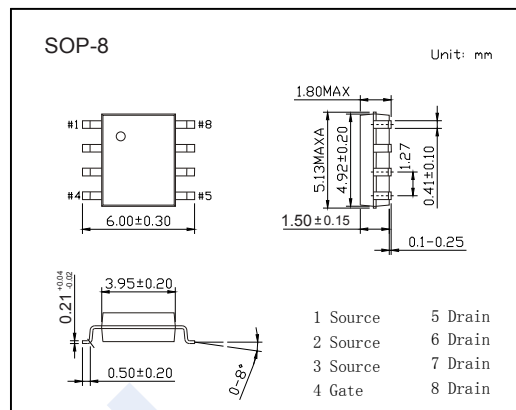
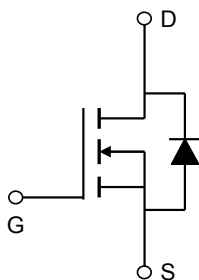


N-Channel MOSFET

AO4454 (KO4454)

■ Features

- $V_{DS} (V) = 100V$
- $I_D = 6.5 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 36m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 43m\Omega$ ($V_{GS} = 7V$)

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	100	V
Gate-Source Voltage		V_{GS}	± 25	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	6.5	A
	$T_A = 70^\circ C$		5.3	
Pulsed Drain Current		I_{DM}	46	
Avalanche Current		I_{AS}, I_{AR}	28	
Avalanche Energy	$L = 0.1mH$	E_{AS}, E_{AR}	39	mJ
Power Dissipation	$T_A = 25^\circ C$	P_D	3.1	W
	$T_A = 70^\circ C$		2	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	40	$^\circ C/W$
	Steady-State		75	
Thermal Resistance.Junction- to-Lead		R_{thJL}	24	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO4454 (KO4454)

■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V _{DSS}	I _D =250μA, V _{GS} =0V	100			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =100V, V _{GS} =0V			10	μA
		V _{DS} =100V, V _{GS} =0V, T _J =55°C			50	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±25V			±100	nA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	2.8		4	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =6.5A			36	mΩ
		V _{GS} =10V, I _D =6.5A, T _J =125°C			67	
		V _{GS} =7V, I _D =6A			43	
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	46			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =6.5A		20		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =50V, f=1MHz	950		1450	pF
Output Capacitance	C _{oss}		77		145	
Reverse Transfer Capacitance	C _{rss}		21		50	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	0.35		1.05	Ω
Total Gate Charge	Q _g	V _{GS} =10V, V _{DS} =50V, I _D =6.5A	15		23	nC
Gate Source Charge	Q _{gs}		5.5		8.5	
Gate Drain Charge	Q _{gd}		3.5		9	
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =50V, R _L =6.7Ω, R _{GEN} =3Ω		10		ns
Turn-On Rise Time	t _r			7.2		
Turn-Off DelayTime	t _{d(off)}			15		
Turn-Off Fall Time	t _f			7		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 6.5A, dI/dt= 500A/μs	11		21	nC
Body Diode Reverse Recovery Charge	Q _{rr}		35		65	
Maximum Body-Diode Continuous Current	I _S				4	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 <300us pulses, duty cycle 0.5% max.

■ Marking

Marking	4454 KC****
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N-Channel MOSFET

AO4454 (KO4454)

■ Typical Characteristics

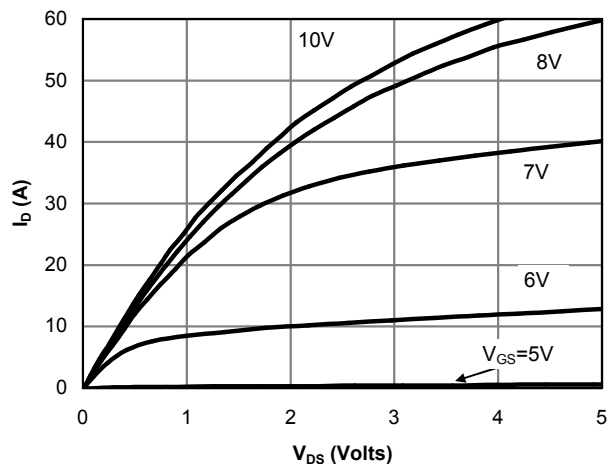


Fig 1: On-Region Characteristics (Note E)

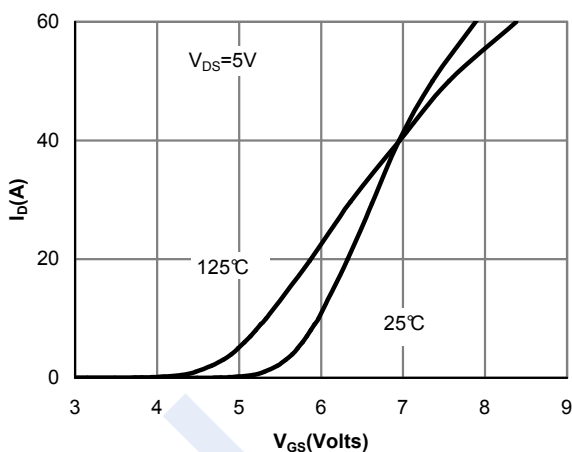


Figure 2: Transfer Characteristics (Note E)

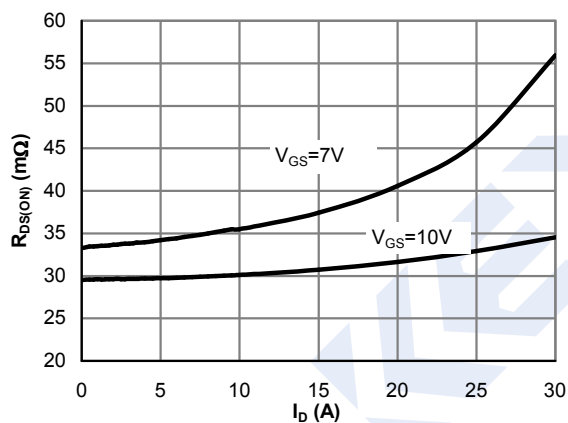


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

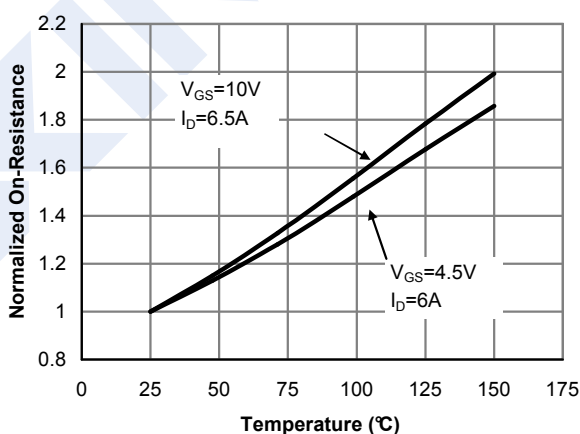


Figure 4: On-Resistance vs. Junction Temperature (Note E)

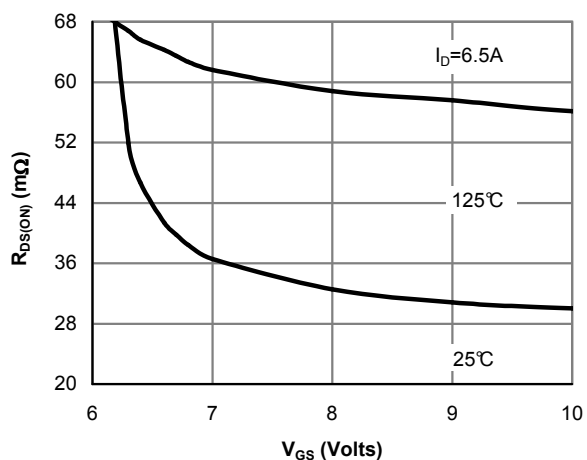


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

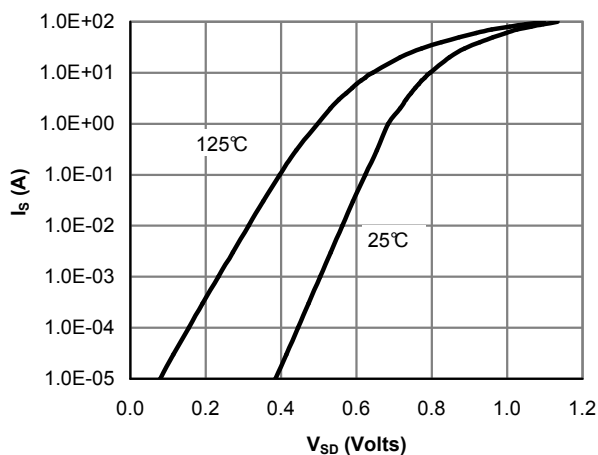


Figure 6: Body-Diode Characteristics (Note E)

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■ Typical Characteristics

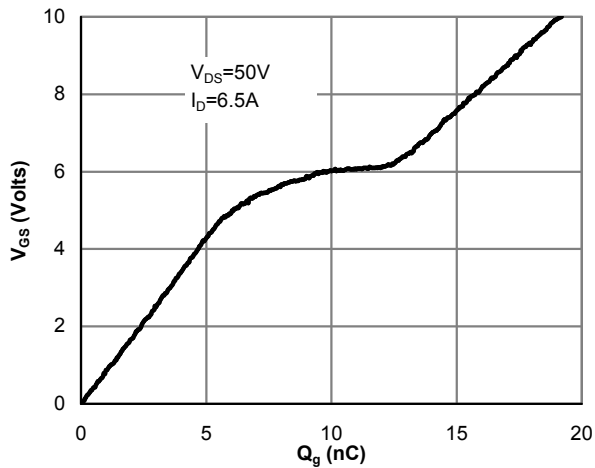


Figure 7: Gate-Charge Characteristics

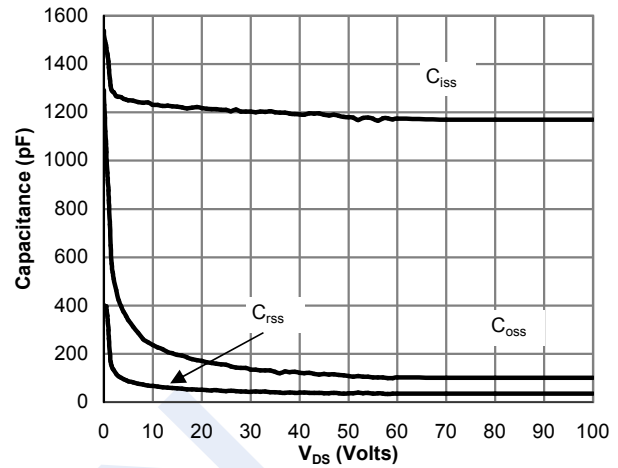


Figure 8: Capacitance Characteristics

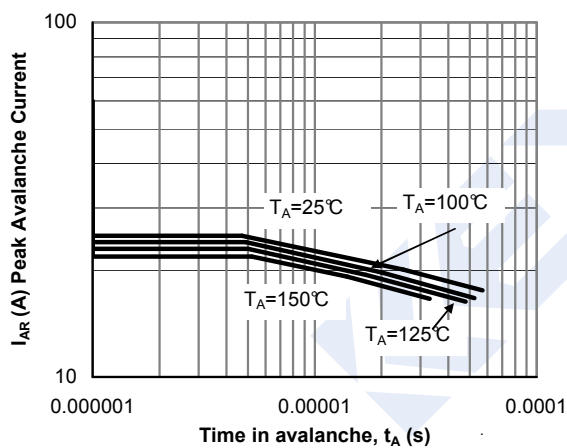


Figure 9: Single Pulse Avalanche capability (Note C)

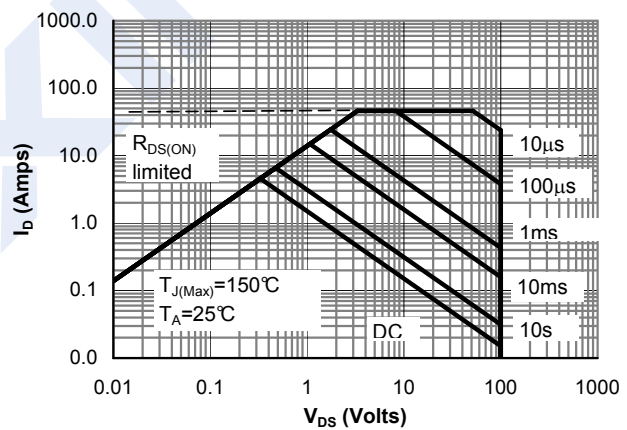


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

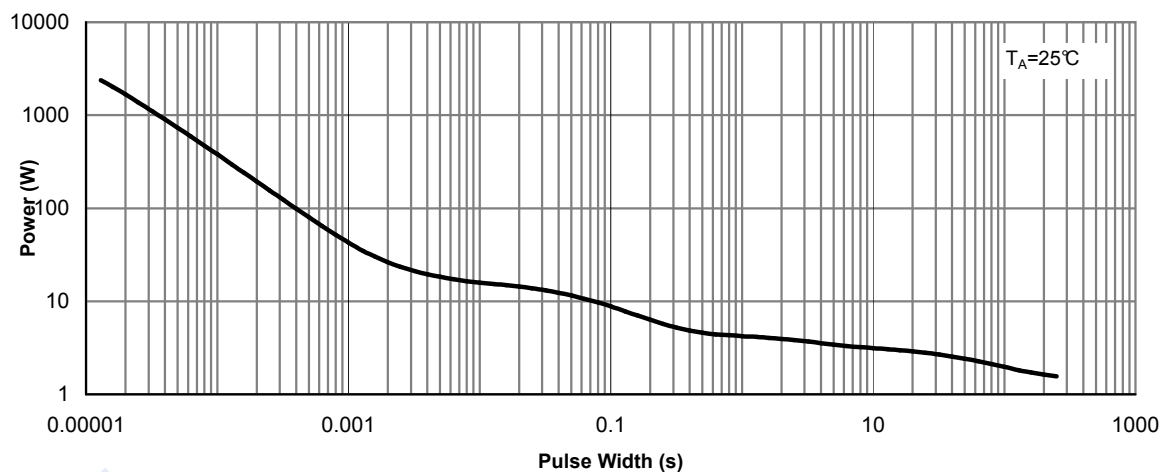


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

N-Channel MOSFET

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■ Typical Characteristics

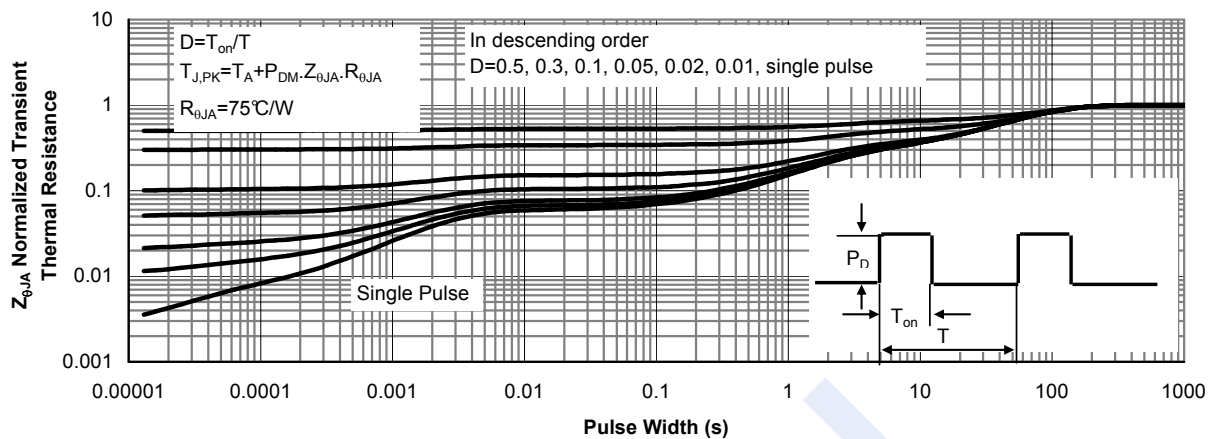


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)

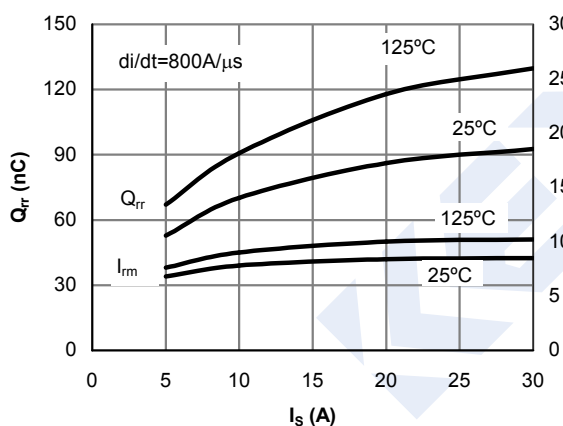


Figure 13: Diode Reverse Recovery Charge and Peak Current vs. Conduction Current

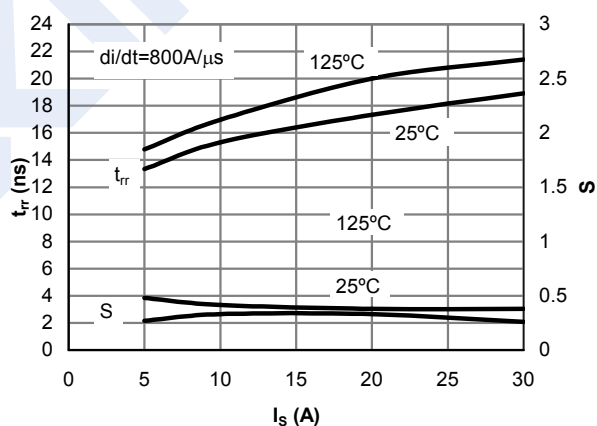


Figure 14: Diode Reverse Recovery Time and Softness Factor vs. Conduction Current

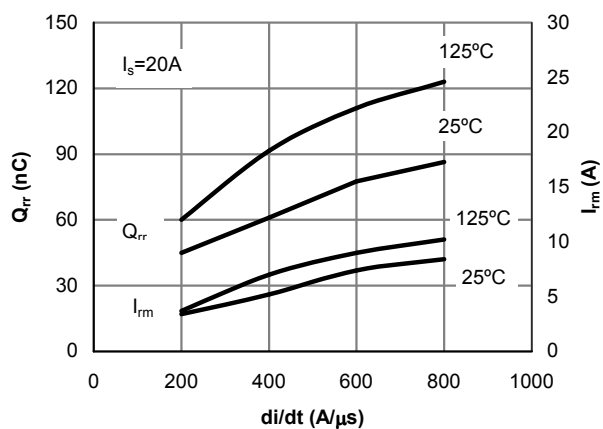


Figure 15: Diode Reverse Recovery Charge and Peak Current vs. di/dt

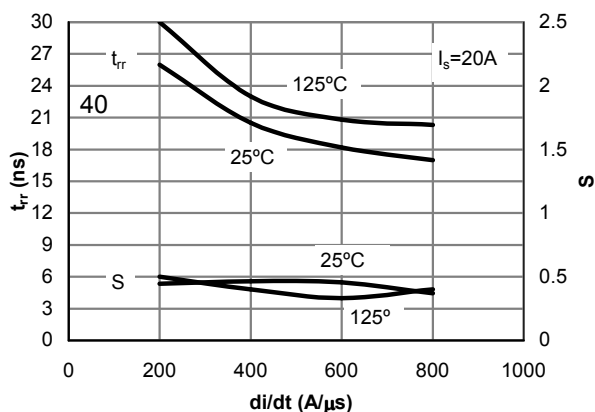


Figure 16: Diode Reverse Recovery Time and Softness Factor vs. di/dt