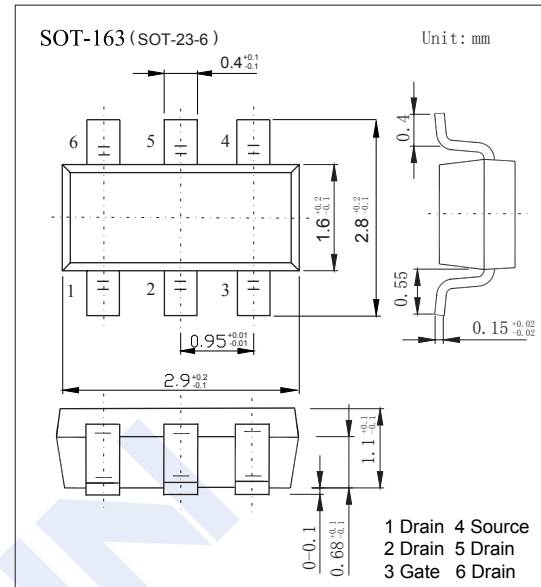
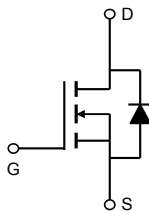


N-Channel MOSFET

AO6402 (KO6402)

■ Features

- $V_{DS} = 30V$
- $I_D = 5 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 31m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 43m\Omega$ ($V_{GS} = 4.5V$)

■ 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
Pulsed Drain Current	I_{DM}	20	A
Power Dissipation	P_D	$T_A = 25^\circ C$	1.25
		$T_A = 70^\circ C$	0.8
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	100
		Steady-State	130
Thermal Resistance.Junction- to-Lead	R_{thJL}	70	$^\circ C/W$
Junction Temperature	T_J	150	
Storage Temperature Range	T_{stg}	-55 to 150	$^\circ C$

N-Channel MOSFET

AO6402 (KO6402)

■ 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	1.2		2.4	V
Static Drain-Source On-Resistance	R _{Ds(on)}	V _{GS} =10V, I _D =5A			31	mΩ
		V _{GS} =10V, I _D =5A, T _J =125°C			50	
		V _{GS} =4.5V, I _D =4A			43	
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	25			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =5A		15		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		255	310	pF
Output Capacitance	C _{oss}			45		
Reverse Transfer Capacitance	C _{rss}			35	50	
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz	1.6		4.9	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =5A		5.2	6.3	nC
Total Gate Charge (4.5V)				2.55	3.2	
Gate Source Charge	Q _{gs}			0.85		
Gate Drain Charge	Q _{gd}			1.3		
Turn-On DelayTime	t _{d(on)}		V _{GS} =10V, V _{DS} =15V, R _L =3 Ω, R _G =3 Ω		4.5	
Turn-On Rise Time	t _r			2.5		
Turn-Off DelayTime	t _{d(off)}			14.5		
Turn-Off Fall Time	t _f			3.5		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 5A, di/dt= 100A/us		8.5		nC
Body Diode Reverse Recovery Charge	Q _{rr}			2.2		
Maximum Body-Diode Continuous Current	I _S				1.5	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	D2**
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N-Channel MOSFET AO6402 (KO6402)

■ Typical Characteristics

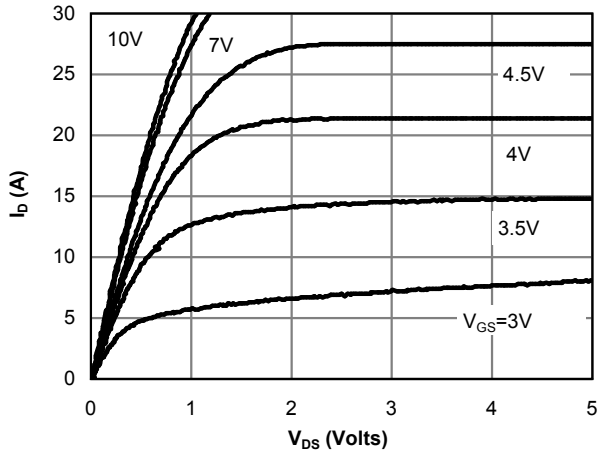


Fig 1: On-Region Characteristics (Note E)

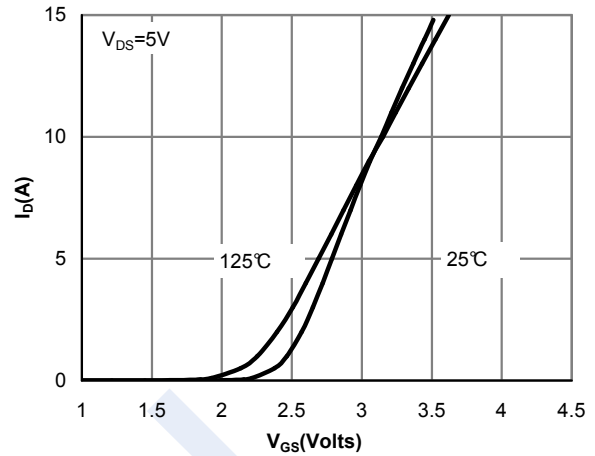


Figure 2: Transfer Characteristics (Note E)

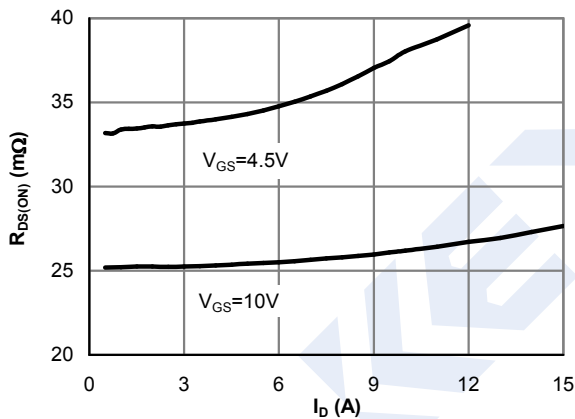


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

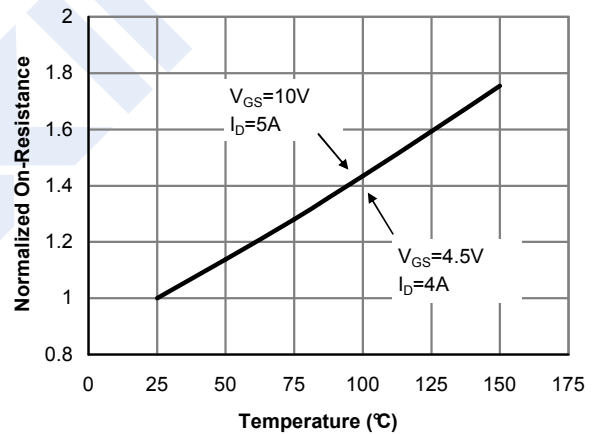


Figure 4: On-Resistance vs. Junction Temperature (Note E)

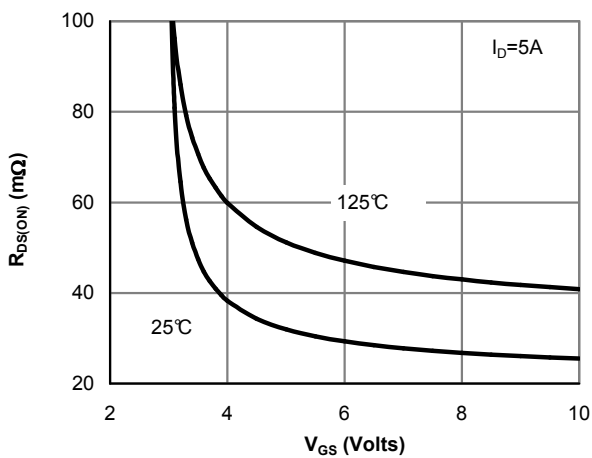


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

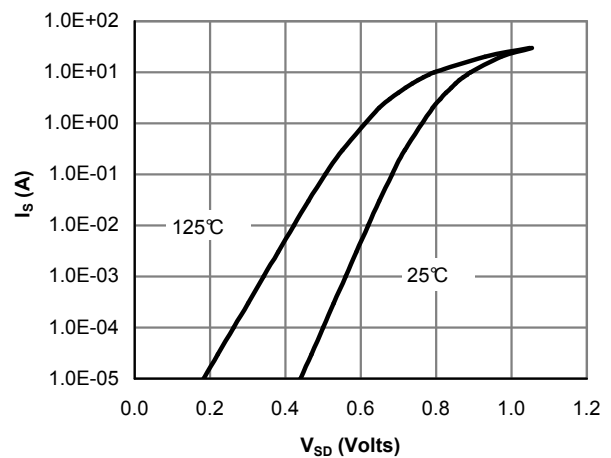


Figure 6: Body-Diode Characteristics (Note E)

N-Channel MOSFET AO6402 (KO6402)

■ Typical Characteristics

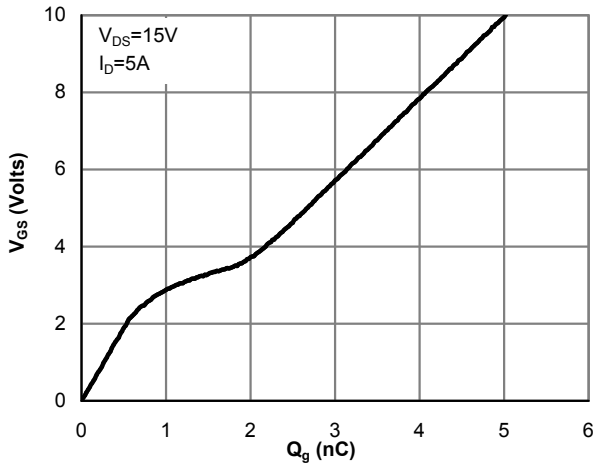


Figure 7: Gate-Charge Characteristics

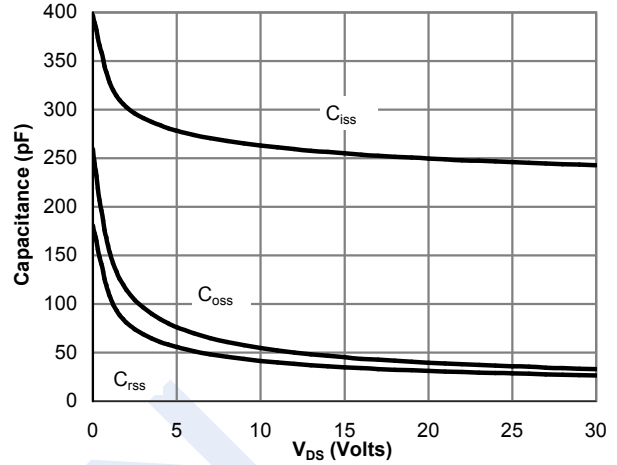


Figure 8: Capacitance Characteristics

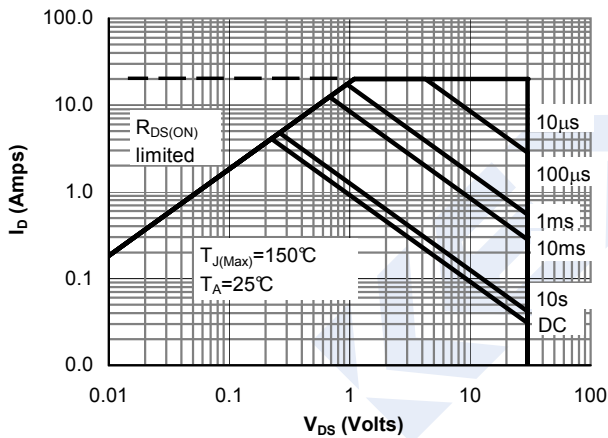


Figure 10: Maximum Forward Biased Safe Operating Area (Note F)

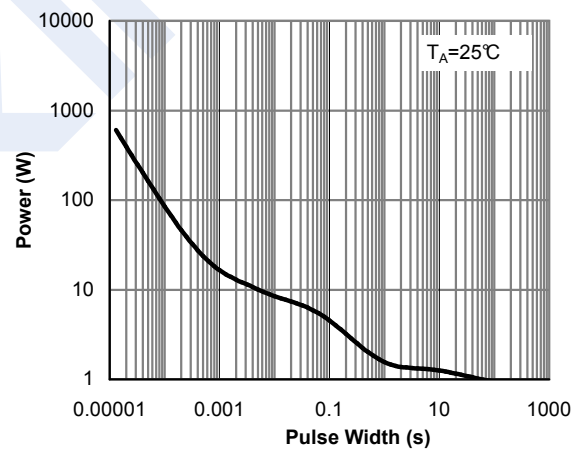


Figure 11: Single Pulse Power Rating Junction-to-Ambient (Note F)

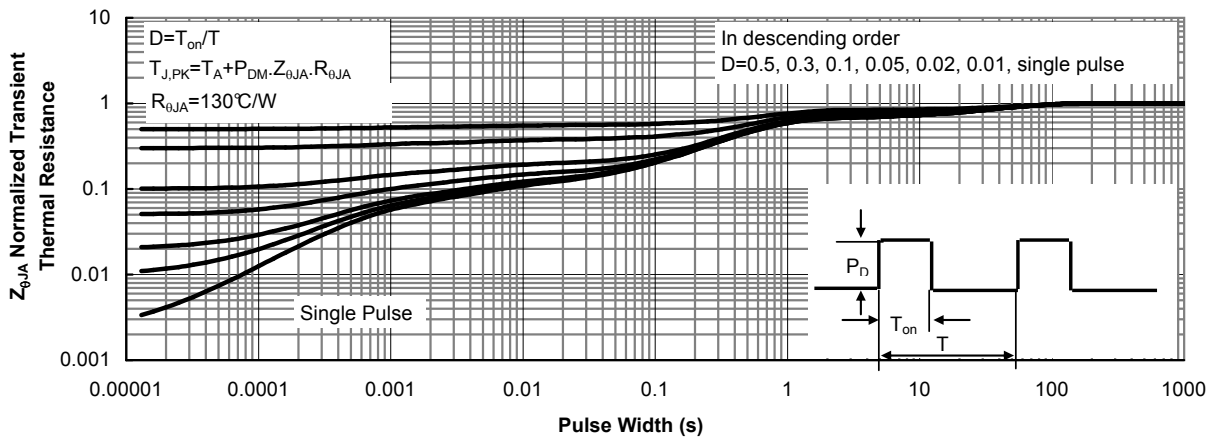


Figure 12: Normalized Maximum Transient Thermal Impedance (Note F)