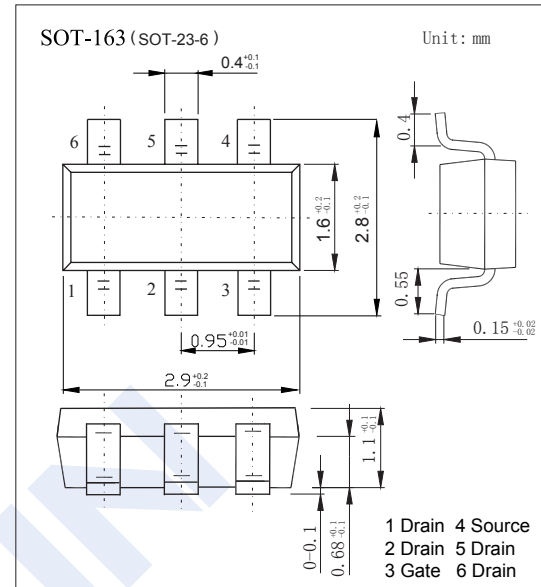
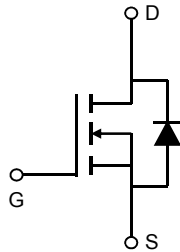


N-Channel MOSFET

AO6402A (KO6402A)

■ Features

- $V_{DS} (V) = 30V$
- $I_D = 7.5 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 24m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 35m\Omega (V_{GS} = 4.5V)$



■ 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	$T_A=25^\circ C$	7.5
		$T_A=70^\circ C$	6
Pulsed Drain Current	I_{DM}	64	A
Power Dissipation	P_D	$T_A=25^\circ C$	2
		$T_A=70^\circ C$	1.28
Thermal Resistance.Junction- to-Ambient	R_{thJA}	$t \leq 10s$	62.5
		Steady-State	110
Thermal Resistance.Junction- to-Lead	R_{thJL}	68	$^\circ C/W$
Junction Temperature	T_J	150	$^\circ C$
Storage Temperature Range	T_{stg}	-55 to 150	

N-Channel MOSFET

AO6402A (KO6402A)

■ 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	1.5		2.6	V		
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =7.5A			24	mΩ		
		V _{GS} =10V, I _D =7.5A, T _J =125°C			34			
		V _{GS} =4.5V, I _D =5.6A			35			
On State Drain Current	I _{D(ON)}	V _{GS} =10V, V _{DS} =5V	64			A		
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =7.5A		20		S		
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =15V, f=1MHz		373	448	pF		
Output Capacitance	C _{oss}			67				
Reverse Transfer Capacitance	C _{rss}			41				
Gate Resistance	R _g		V _{GS} =0V, V _{DS} =0V, f=1MHz		2		2.8	Ω
Total Gate Charge (10V)	Q _g	V _{GS} =10V, V _{DS} =15V, I _D =7.5A		7.2	11	nC		
Total Gate Charge (4.5V)				3.5	5			
Gate Source Charge	Q _{gs}			1.3				
Gate Drain Charge	Q _{gd}			1.7				
Turn-On DelayTime	t _{d(on)}		V _{GS} =10V, V _{DS} =15V, R _L =2 Ω, R _G =3 Ω		4.5		6.5	ns
Turn-On Rise Time	t _r				2.7		4.5	
Turn-Off DelayTime	t _{d(off)}			14.9	23			
Turn-Off Fall Time	t _f			2.9	5.5			
Body Diode Reverse Recovery Time	t _{rr}	I _F = 7.5A, di/dt= 100A/μs		10.5	12.6	ns		
Body Diode Reverse Recovery Charge	Q _{rr}			4.5	5.4		nC	
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	42**
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N-Channel MOSFET AO6402A (KO6402A)

■ Typical Characteristics

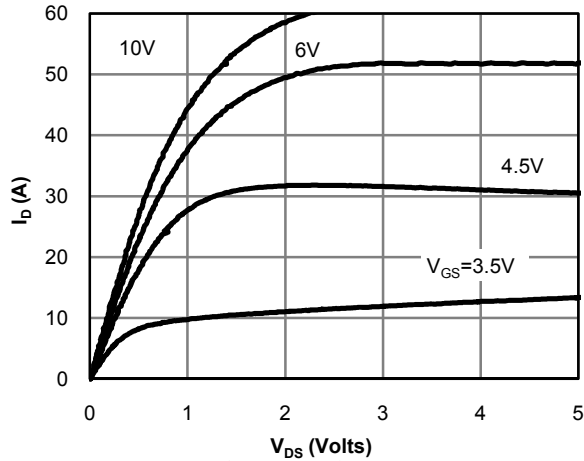


Fig 1: On-Region Characteristics

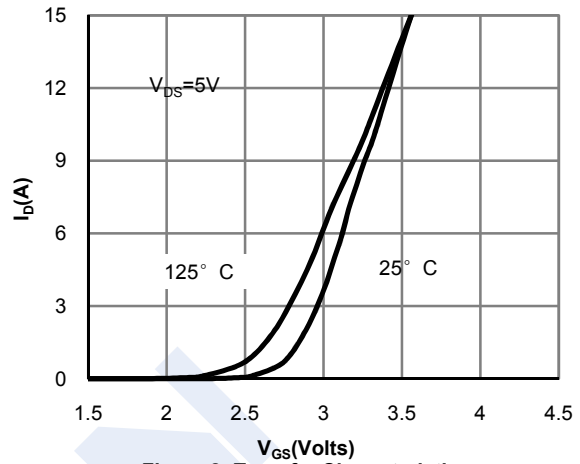


Figure 2: Transfer Characteristics

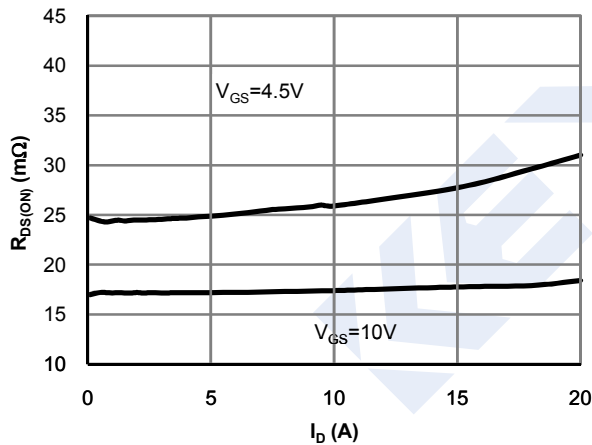


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

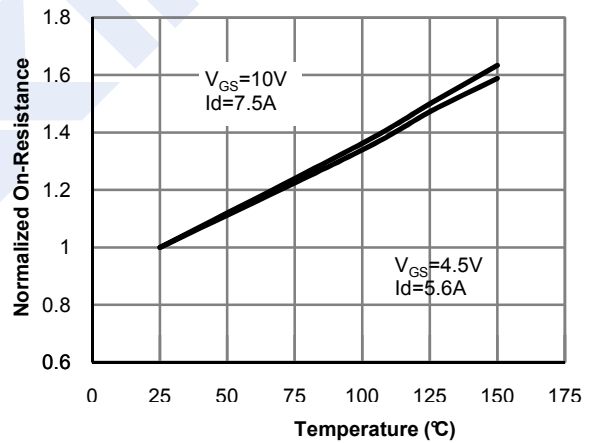


Figure 4: On-Resistance vs. Junction Temperature

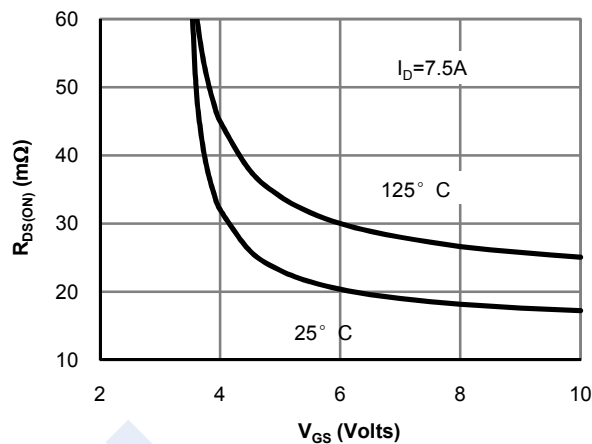


Figure 5: On-Resistance vs. Gate-Source Voltage

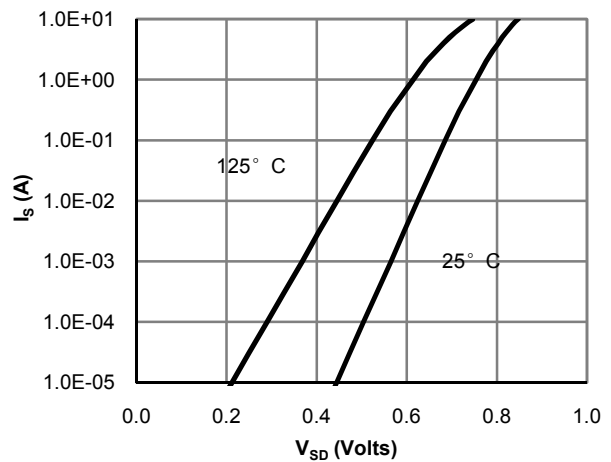


Figure 6: Body-Diode Characteristics

N-Channel MOSFET AO6402A (KO6402A)

■ Typical Characteristics

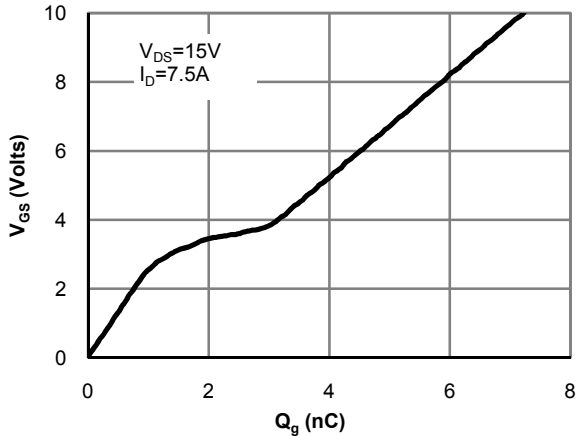


Figure 7: Gate-Charge Characteristics

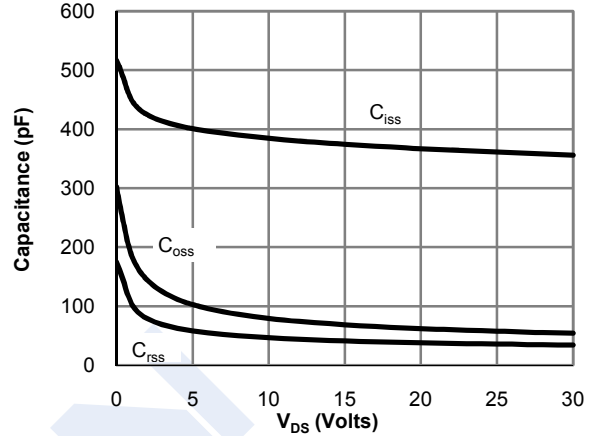


Figure 8: Capacitance Characteristics

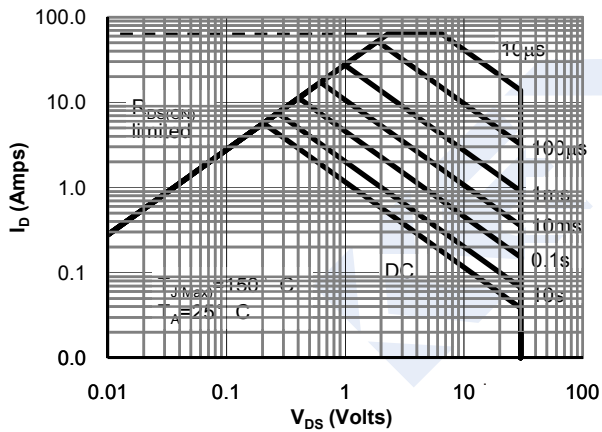


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

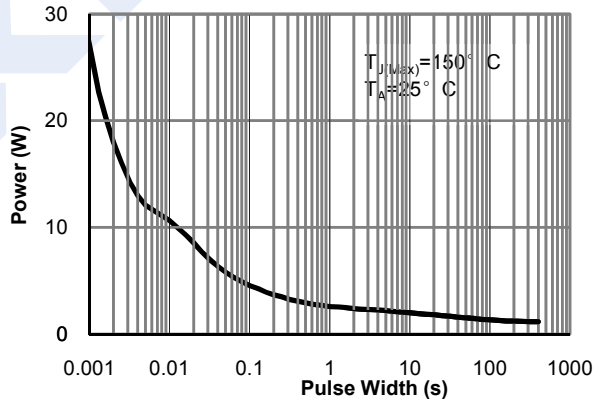


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

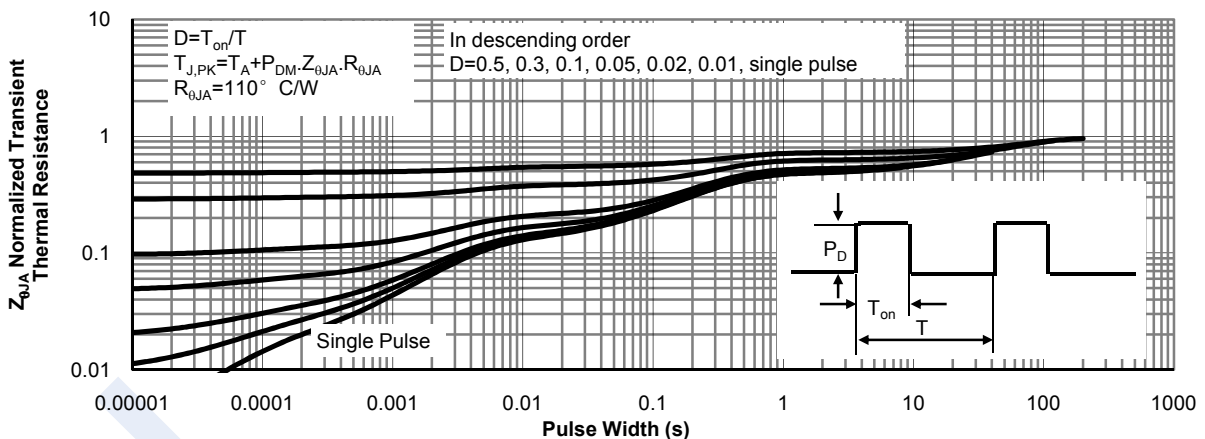


Figure 11: Normalized Maximum Transient Thermal Impedance