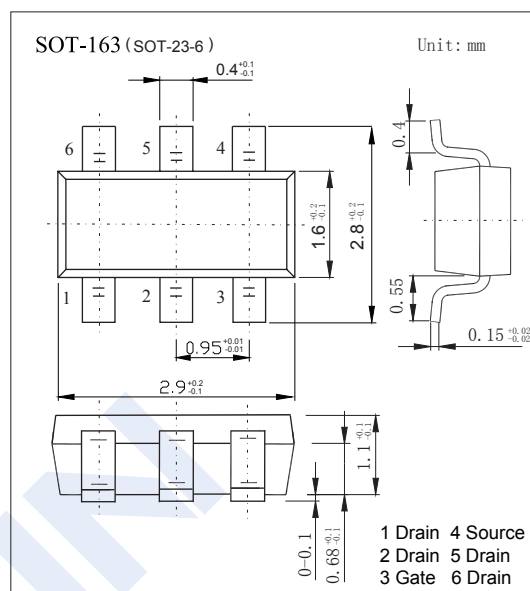
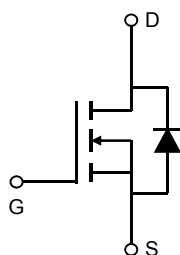


N-Channel MOSFET

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	$T_A = 25^\circ C$	I_D	7.5	A
	$T_A = 70^\circ C$		6	
Pulsed Drain Current		I_{DM}	64	
Power Dissipation	$T_A = 25^\circ C$	P_D	2	W
	$T_A = 70^\circ C$		1.28	
Thermal Resistance.Junction- to-Ambient	$t \leq 10s$	R_{thJA}	62.5	$^\circ C/W$
	Steady-State		110	
Thermal Resistance.Junction- to-Lead		R_{thJL}	68	
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)}			4.5	6.5	
Turn-On Rise Time	t _r	V _{GS} =10V, V _{DS} =15V, R _L =2 Ω, R _G =3 Ω		2.7	4.5	ns
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}			10.5	12.6	
Body Diode Reverse Recovery Charge	Q _{rr}	I _F =7.5A, dI/dt=100A/μs		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 <300μs pulses, duty cycle 0.5% max.

■ Marking

Marking	42**
---------	------

N-Channel MOSFET

AO6402A (KO6402A)

■ Typical Characteristics

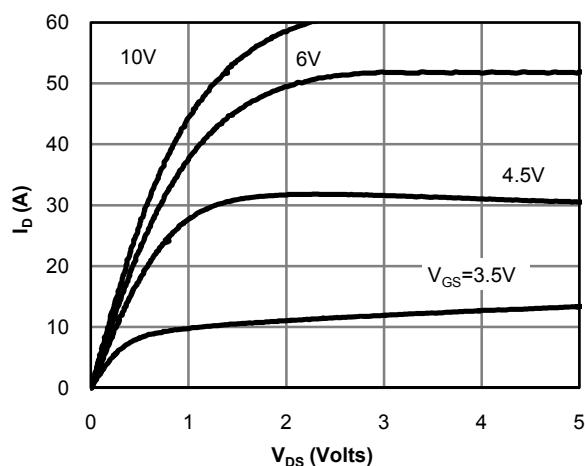


Fig 1: On-Region Characteristics

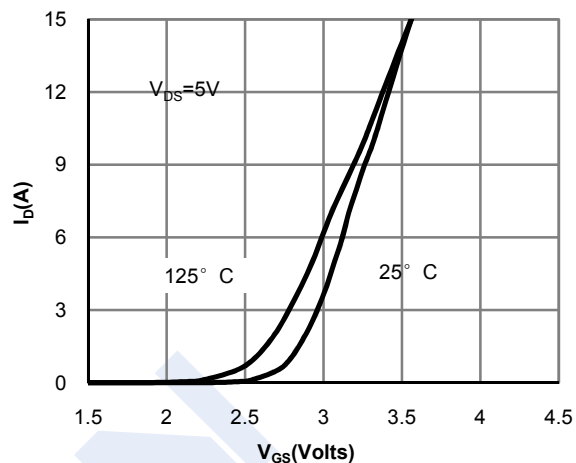


Figure 2: Transfer Characteristics

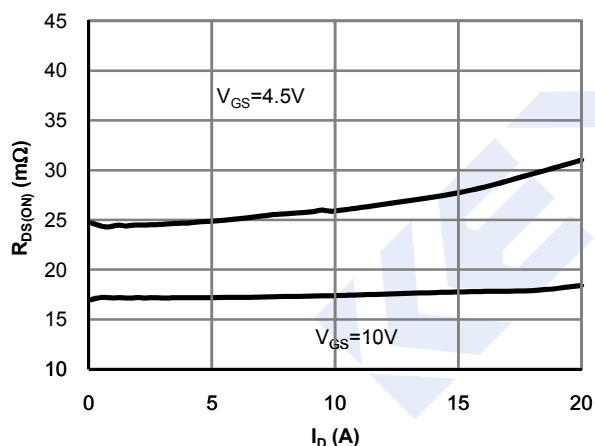


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

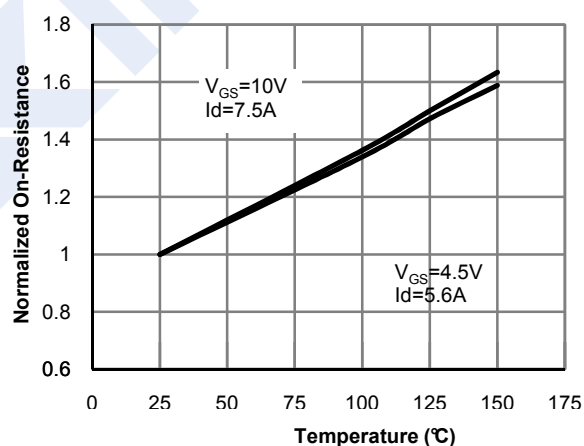


Figure 4: On-Resistance vs. Junction Temperature

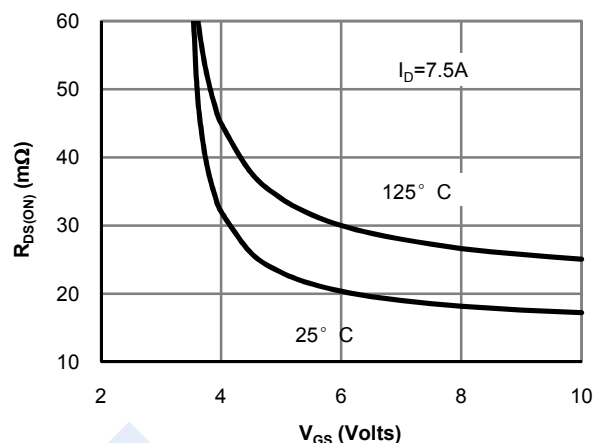


Figure 5: On-Resistance vs. Gate-Source Voltage

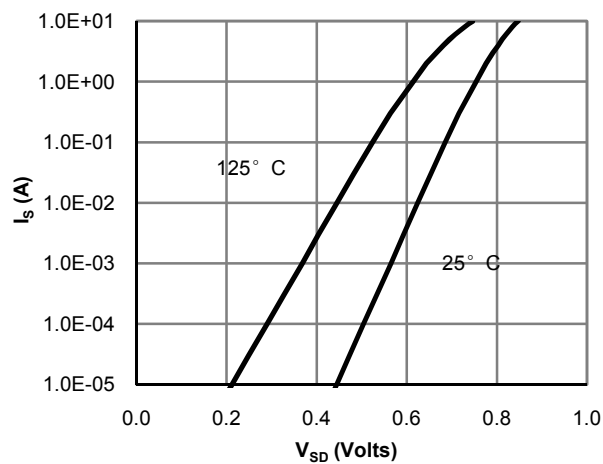


Figure 6: Body-Diode Characteristics

N-Channel MOSFET

AO6402A (KO6402A)

■ Typical Characteristics

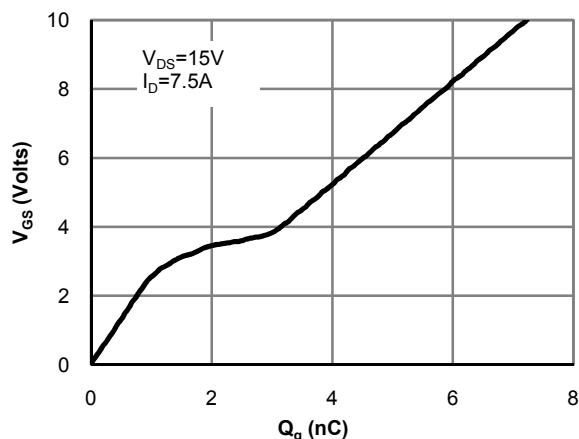


Figure 7: Gate-Charge Characteristics

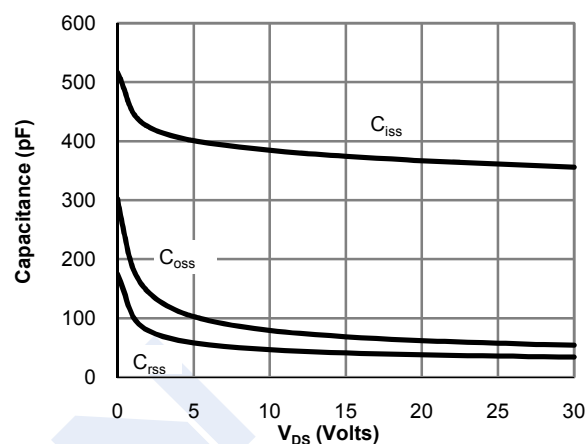


Figure 8: Capacitance Characteristics

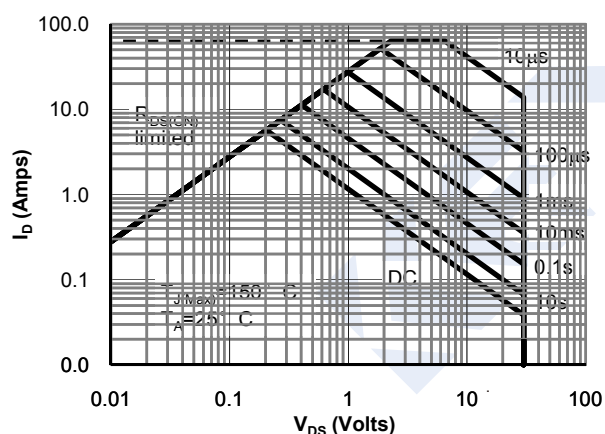


Figure 9: Maximum Forward Biased Safe Operating Area (Note E)

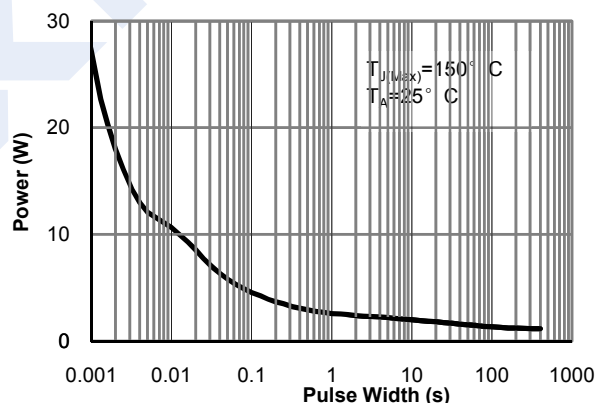


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note E)

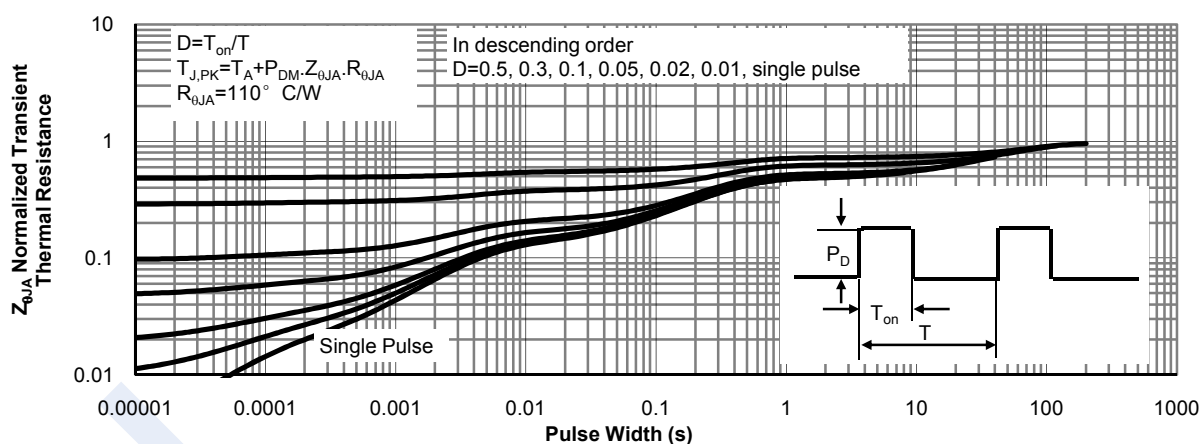


Figure 11: Normalized Maximum Transient Thermal Impedance