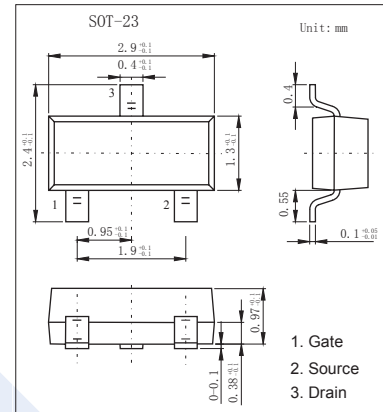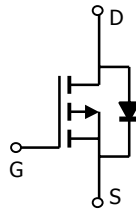# P-Channel Enhancement MOSFET

AO3407 (KO3407)

■ Features

- $V_{DS\,(V)}$ = -30V

- I_D = -4.1 A

- $R_{DS(ON)} <$ 52mΩ (V_{GS} = -10V)

- $R_{DS(ON)} <$ 87mΩ (V_{GS} = -4.5V)

SOT-23   Unit: mm

1. Gate
2. Source
3. Drain

■ Absolute Maximum Ratings Ta = 25℃

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	$\pm$20	
Continuous Drain Current Ta = 25℃	I_D	-4.1	A
Ta = 70℃		-3.5	
Pulsed Drain Current	I_{DM}	-20	
Power Dissipation Ta = 25℃	P_D	1.4	W
Ta = 70℃		1	
Thermal Resistance.Junction- to-Ambient t ≤10s	R_{thJA}	90	℃/W
Steady State		125	
Thermal Resistance.Junction- to-Lead	R_{thJL}	60	
Junction Temperature	T_J	150	℃
Storage Temperature Range	T_{stg}	-55 to 150	

P-Channel Enhancement MOSFET
AO3407 (KO3407)

■ Electrical Characteristics Ta = 25℃

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Drain-Source Breakdown Voltage	V$_{DSS}$	I$_D$=-250μA, V$_{GS}$=0V	-30			V
Zero Gate Voltage Drain Current	I$_{DSS}$	V$_{DS}$=-24V, V$_{GS}$=0V			-1	μA
		V$_{DS}$=-24V, V$_{GS}$=0V, T$_J$=55℃			-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$_D$=-250μA	-1	-1.8	-3	V
Static Drain-Source On-Resistance	R$_{DS(ON)}$	V$_{GS}$=-10V, I$_D$=-4.1A		40.5	52	mΩ
		V$_{GS}$=-10V, I$_D$=-4.A T$_J$=125℃		57	73	
		V$_{GS}$=-4.5V, I$_D$=-3A		64	87	
On state drain current	I$_{D(ON)}$	V$_{GS}$=-4.5V, V$_{DS}$=-5V	-10			A
Forward Transconductance	g$_{FS}$	V$_{DS}$=-5V, I$_D$=-4A	5.5	8.2		S
Input Capacitance	C$_{iss}$	V$_{GS}$=0V, V$_{DS}$=-15V, f=1MHz		700		pF
Output Capacitance	C$_{oss}$			120		
Reverse Transfer Capacitance	C$_{rss}$			75		
Gate resistance	R$_g$	V$_{GS}$=0V, V$_{DS}$=0V, f=1MHz		10		Ω
Total Gate Charge	Q$_g$	V$_{GS}$=-4.5V, V$_{DS}$=-15V, I$_D$=-4A		14.3		nC
Gate Source Charge	Q$_{gs}$			7		
Gate Drain Charge	Q$_{gd}$			3.1		
Turn-On DelayTime	t$_{d(on)}$	V$_{GS}$=-10V, V$_{DS}$=-15V, R$_L$=3.6Ω, R$_{GEN}$=3Ω		8.6		ns
Turn-On Rise Time	t$_r$			5		
Turn-Off DelayTime	t$_{d(off)}$			28.2		
Turn-Off Fall Time	t$_f$			13.5		
Body Diode Reverse Recovery Time	t$_{rr}$	I$_F$=-4A, dI/dt=100A/μs		27		
Body Diode Reverse Recovery Charge	Q$_{rr}$			15		nC
Maximum Body-Diode Continuous Current	I$_s$				-2.2	A
Diode Forward Voltage	V$_{SD}$	I$_s$=-1A, V$_{GS}$=0V		-0.77	-1	V

■ Marking

Marking	A7*

P-Channel Enhancement MOSFET

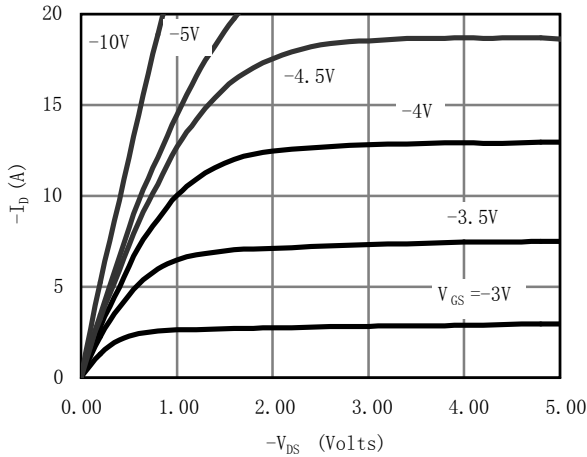## AO3407 (KO3407)

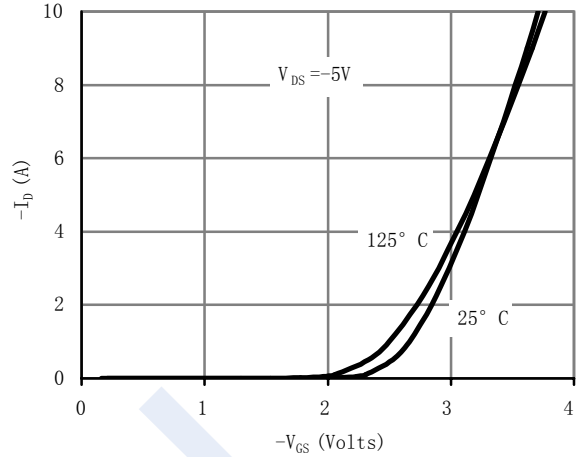■ Typical Characterisitics

Figure 1: On-Region Characteristics

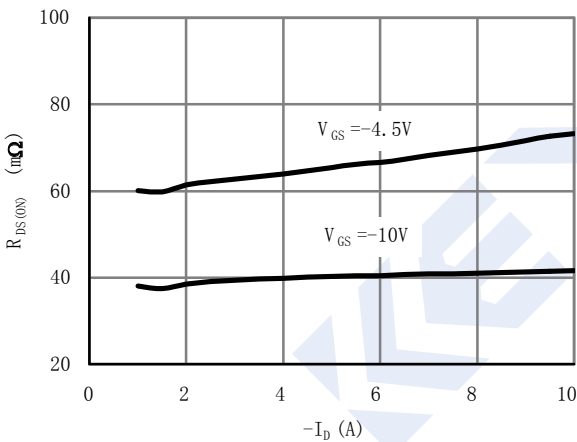Figure 2: Transfer Characteristics

Figure 3: On-Resistance vs. Drain Current and Gate Voltage
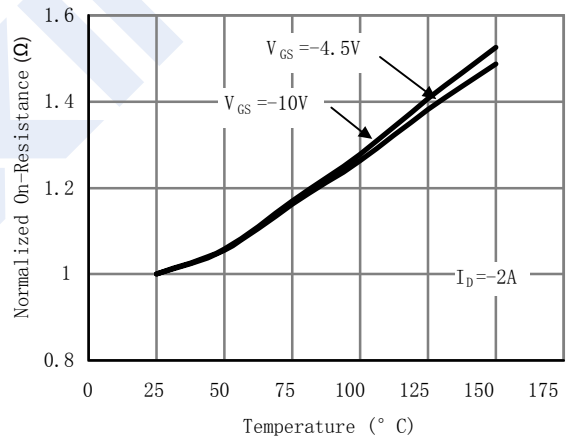
Figure 4: On-Resistance vs. Junction Temperature

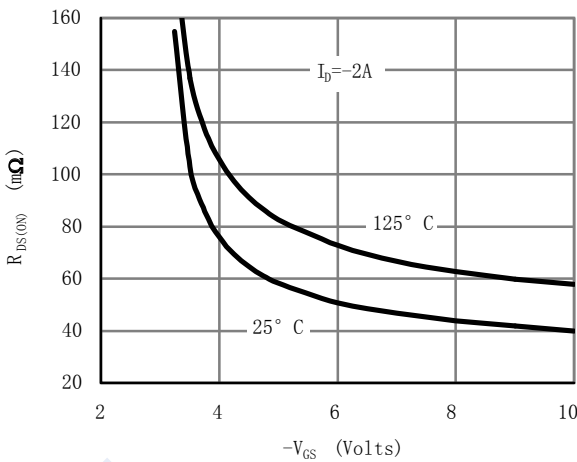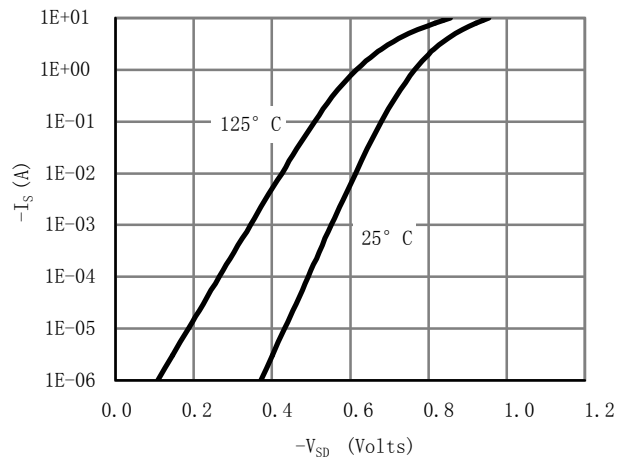Figure 5: On-Resistance vs. Gate-Source Voltage

Figure 6: Body-Diode Characteristics

P-Channel Enhancement MOSFET
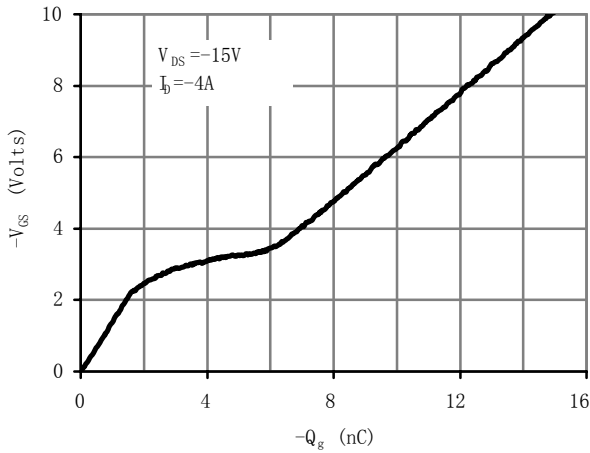## AO3407 (KO3407)

■ Typical Characterisitics

Figure 7: Gate-Charge Characteristics
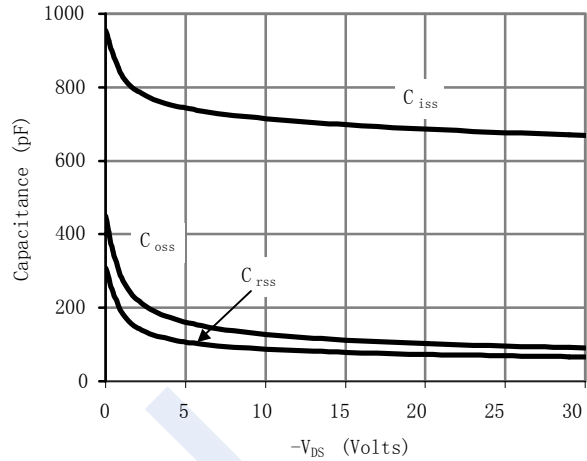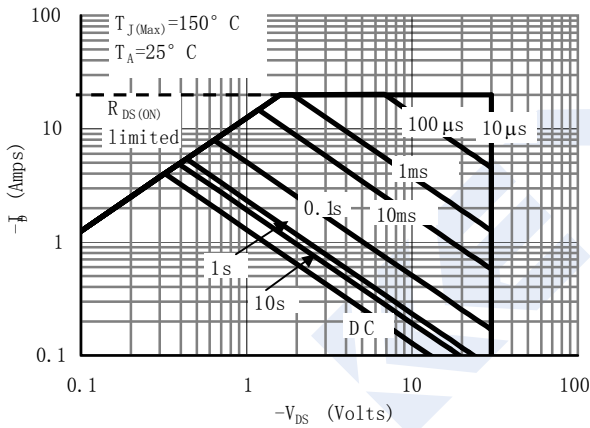

Figure 8: Capacitance Characteristics

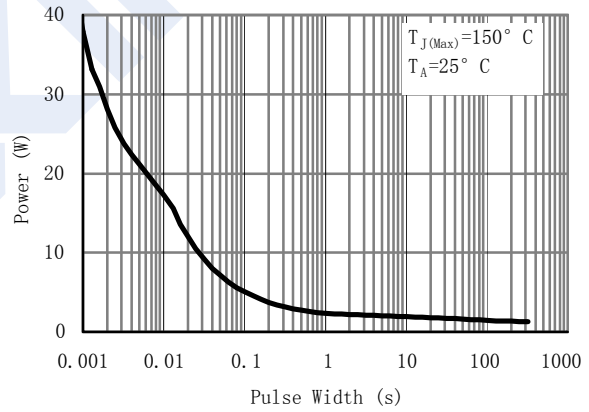Figure 9: Maximum Forward Biased Safe
Operating Area (Note E)

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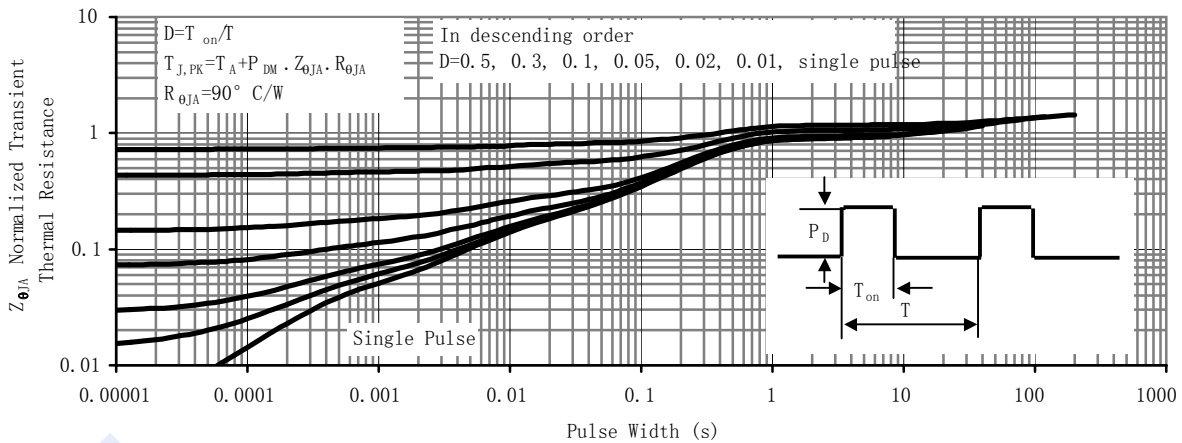Ambient (Note E)

Figure 11: Normalized Maximum Transient Thermal Impedance

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