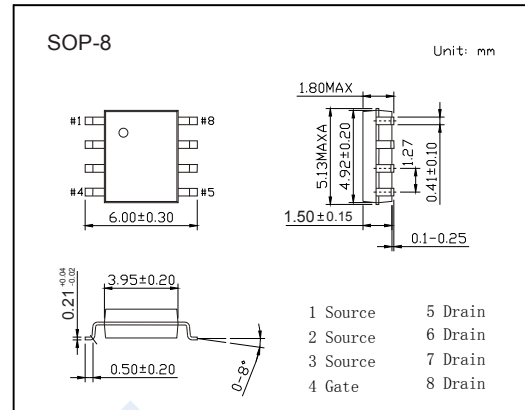
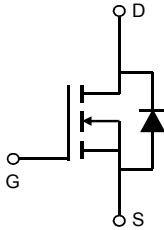


## N-Channel MOSFET

## AO4286 (KO4286)

## ■ Features

- $V_{DS} (V) = 100V$
- $I_D = 4 A (V_{GS} = 10V)$
- $R_{DS(ON)} < 68m\Omega (V_{GS} = 10V)$
- $R_{DS(ON)} < 92m\Omega (V_{GS} = 4.5V)$

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

Parameter	Symbol	Rating	Unit
Drain-Source Voltage	$V_{DS}$	100	V
Gate-Source Voltage	$V_{GS}$	$\pm 20$	V
Continuous Drain Current	$I_D$	$T_A=25^\circ C$	4
		$T_A=70^\circ C$	3
Pulsed Drain Current	$I_{DM}$	25	A
Avalanche Current	$I_{AS}$	4	A
Avalanche energy	$E_{AS}$	0.8	mJ
Power Dissipation	$P_D$	$T_A=25^\circ C$	2.5
		$T_A=70^\circ C$	1.6
Thermal Resistance.Junction- to-Ambient	$R_{thJA}$	$t \leq 10s$	50
		Steady-State	85
Thermal Resistance.Junction- to-Lead	$R_{thJL}$	30	$^\circ C/W$
Junction Temperature	$T_J$	150	$^\circ C$
Storage Temperature Range	$T_{stg}$	-55 to 150	$^\circ C$

## N-Channel MOSFET

### AO4286 (KO4286)

#### ■ Electrical Characteristics Ta = 25°C

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit	
Drain-Source Breakdown Voltage	V <sub>DSS</sub>	I <sub>D</sub> =250 μA, V <sub>GS</sub> =0V	100			V	
Zero Gate Voltage Drain Current	I <sub>DSS</sub>	V <sub>DS</sub> =100V, V <sub>GS</sub> =0V			1	μA	
		V <sub>DS</sub> =100V, V <sub>GS</sub> =0V, T <sub>J</sub> =55°C			5		
Gate-Body Leakage Current	I <sub>GSS</sub>	V <sub>DS</sub> =0V, V <sub>GS</sub> =±20V			±100	nA	
Gate Threshold Voltage	V <sub>GS(th)</sub>	V <sub>DS</sub> =V <sub>GS</sub> , I <sub>D</sub> =250μA	1.7		2.9	V	
Static Drain-Source On-Resistance	R <sub>DS(on)</sub>	V <sub>GS</sub> =10V, I <sub>D</sub> =4A			68	mΩ	
		V <sub>GS</sub> =10V, I <sub>D</sub> =4A T <sub>J</sub> =125°C			127		
		V <sub>GS</sub> =4.5V, I <sub>D</sub> =3A			92		
On State Drain Current	I <sub>D(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =5V	25			A	
Forward Transconductance	g <sub>FS</sub>	V <sub>DS</sub> =5V, I <sub>D</sub> =4A		13		S	
Input Capacitance	C <sub>iss</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =50V, f=1MHz		390		pF	
Output Capacitance	C <sub>oss</sub>			30			
Reverse Transfer Capacitance	C <sub>rss</sub>			3			
Gate Resistance	R <sub>g</sub>	V <sub>GS</sub> =0V, V <sub>DS</sub> =0V, f=1MHz		7		Ω	
Total Gate Charge (10V)	Q <sub>g</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, I <sub>D</sub> =4A		5.8	10	nC	
Total Gate Charge (4.5V)				2.8	5		
Gate Source Charge			Q <sub>gs</sub>		1.1		
Gate Drain Charge			Q <sub>gd</sub>		1.2		
Turn-On DelayTime	t <sub>d(on)</sub>	V <sub>GS</sub> =10V, V <sub>DS</sub> =50V, R <sub>L</sub> =12.5Ω, R <sub>GEN</sub> =3Ω		6		ns	
Turn-On Rise Time	t <sub>r</sub>			2.5			
Turn-Off DelayTime	t <sub>d(off)</sub>			18			
Turn-Off Fall Time	t <sub>f</sub>			2.5			
Body Diode Reverse Recovery Time	t <sub>rr</sub>	I <sub>F</sub> = 4A, di/dt= 500A/us		15		nA	
Body Diode Reverse Recovery Charge	Q <sub>rr</sub>			53			
Maximum Body-Diode Continuous Current	I <sub>S</sub>				3	A	
Diode Forward Voltage	V <sub>SD</sub>	I <sub>S</sub> =1A, V <sub>GS</sub> =0V			1	V	

Note : The static characteristics in Figures 1 to 6 are obtained using <300 μs pulses, duty cycle 0.5% max.

#### ■ Marking

Marking	4286
	KC****

## N-Channel MOSFET AO4286 (KO4286)

■ Typical Characteristics

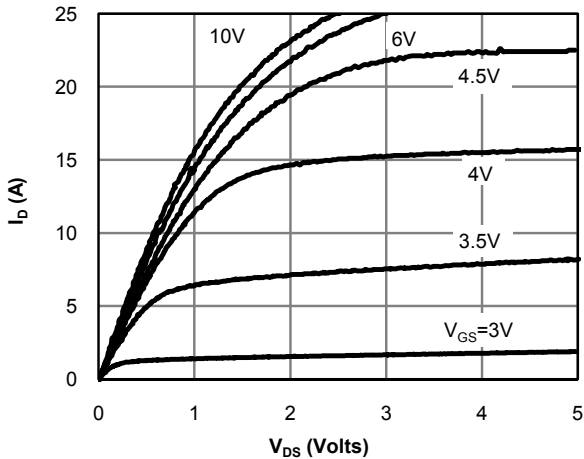


Figure 1: On-Region Characteristics (Note E)

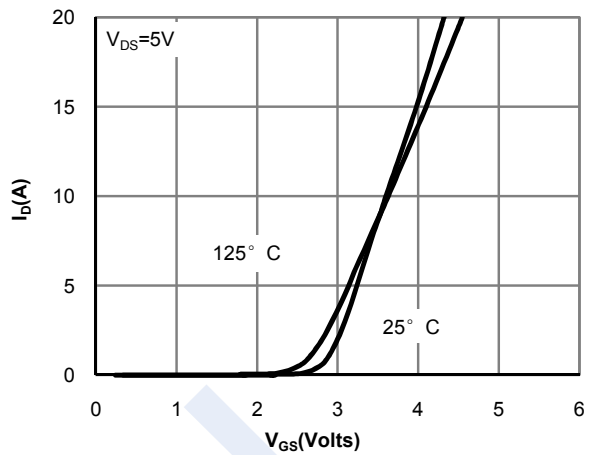


Figure 2: Transfer Characteristics (Note E)

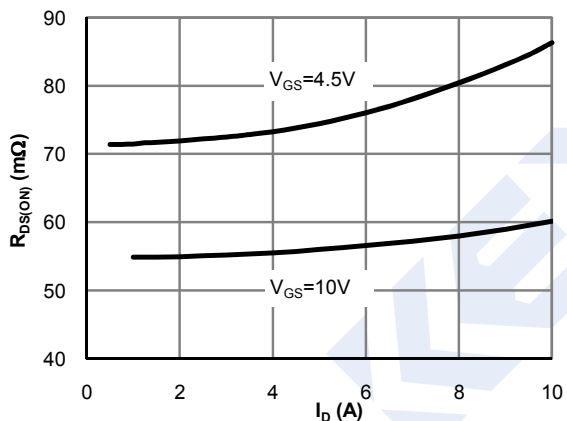


Figure 3: On-Resistance vs. Drain Current and Gate Voltage (Note E)

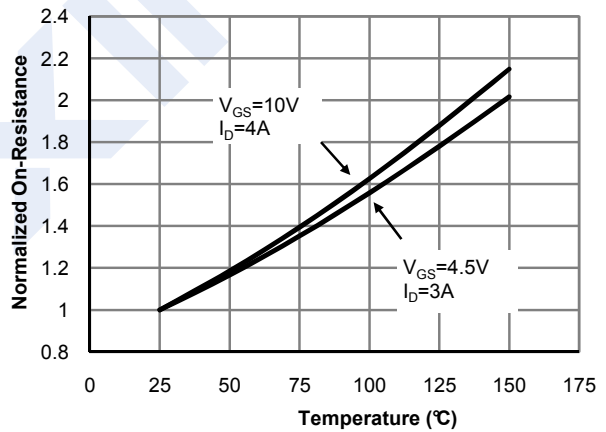


Figure 4: On-Resistance vs. Junction Temperature

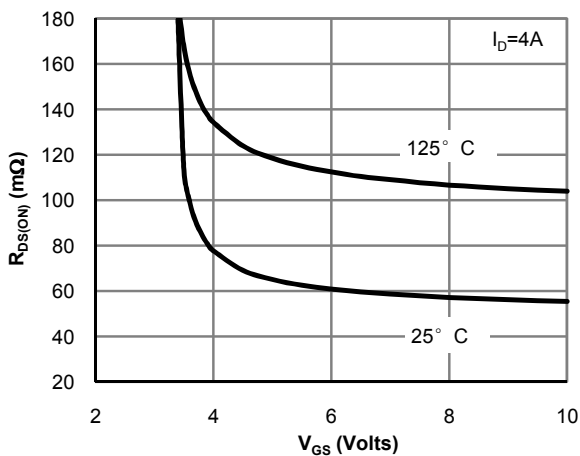


Figure 5: On-Resistance vs. Gate-Source Voltage (Note E)

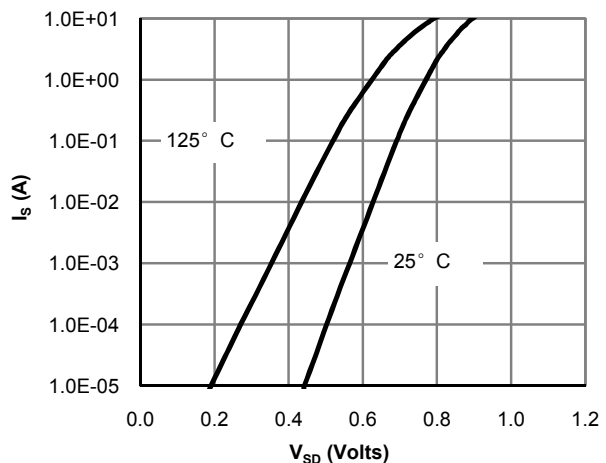


Figure 6: Body-Diode Characteristics (Note E)

## N-Channel MOSFET AO4286 (KO4286)

■ Typical Characteristics

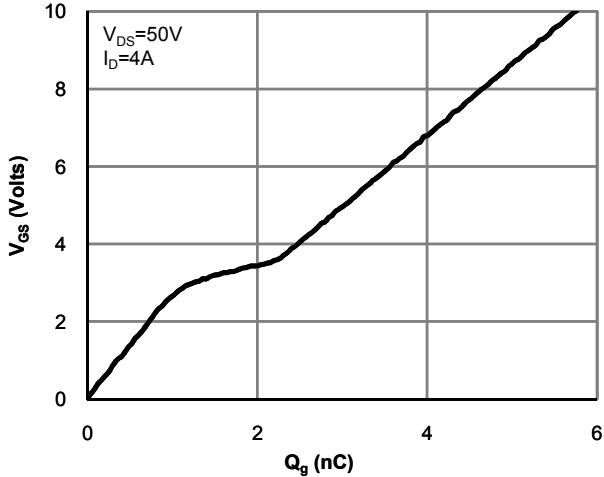


Figure 7: Gate-Charge Characteristics

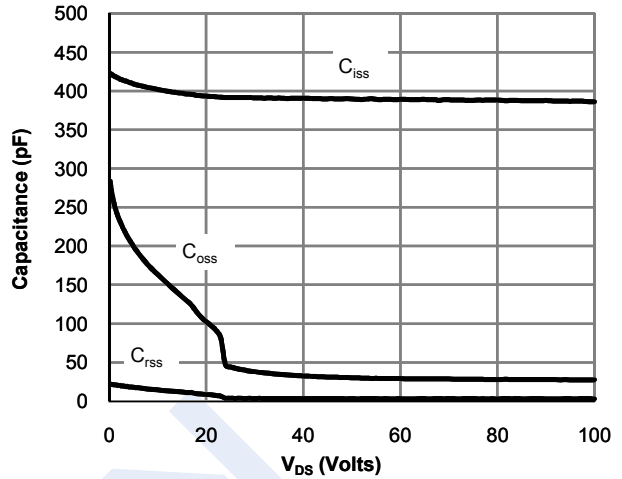


Figure 8: Capacitance Characteristics

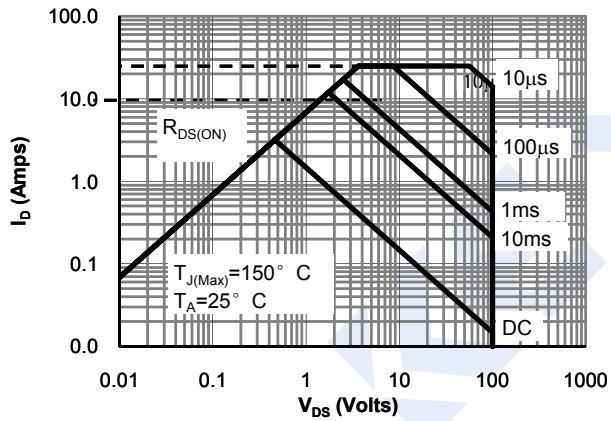


Figure 9: Maximum Forward Biased Safe Operating Area (Note F)

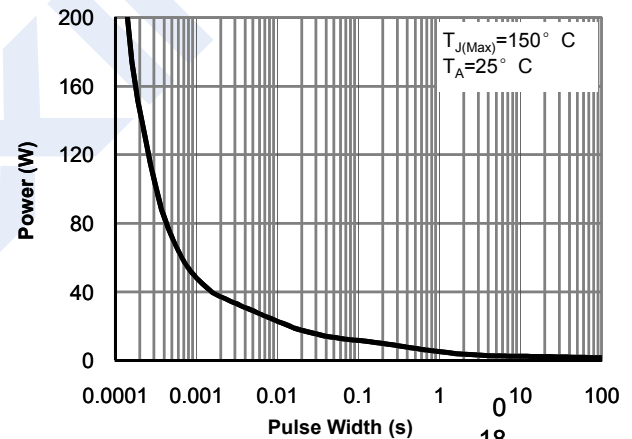


Figure 10: Single Pulse Power Rating Junction-to-Ambient (Note F)

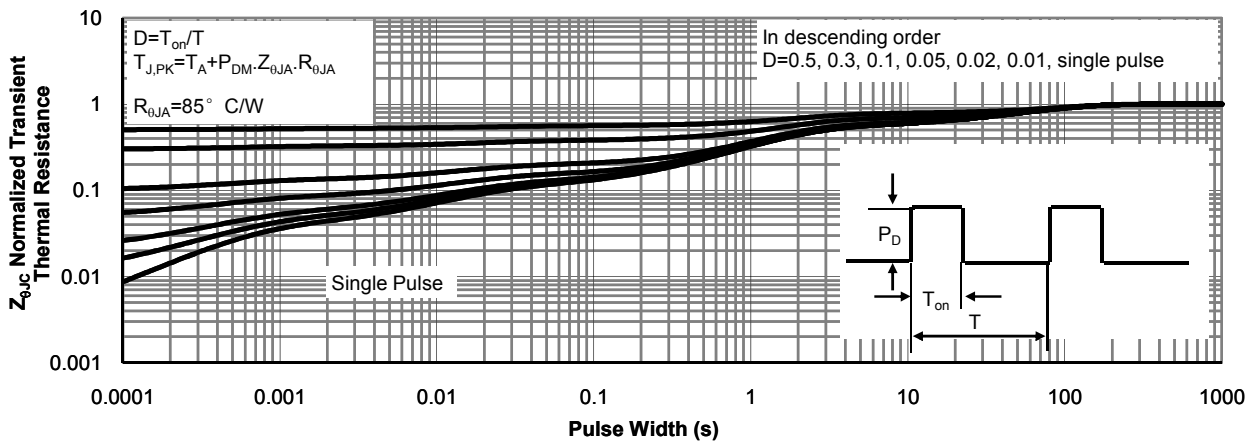


Figure 11: Normalized Maximum Transient Thermal Impedance (Note F)