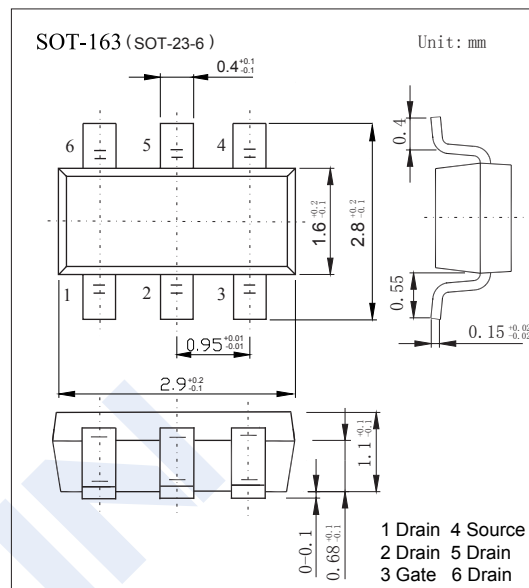
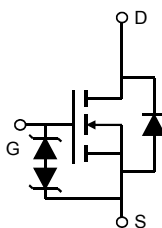


N-Channel MOSFET

AO6404 (KO6404)

■ Features

- $V_{DS} (V) = 20V$
- $I_D = 8.6 A$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 17m\Omega$ ($V_{GS} = 10V$)
- $R_{DS(ON)} < 18m\Omega$ ($V_{GS} = 4.5V$)
- $R_{DS(ON)} < 24m\Omega$ ($V_{GS} = 2.5V$)
- $R_{DS(ON)} < 33m\Omega$ ($V_{GS} = 1.8V$)
- ESD Rating: 2000V HBM

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

Parameter		Symbol	Rating	Unit
Drain-Source Voltage		V_{DS}	20	V
Gate-Source Voltage		V_{GS}	± 12	
Continuous Drain Current	$T_A = 25^\circ C$	I_D	8.6	A
	$T_A = 70^\circ C$		6.8	
Pulsed Drain Current		I_{DM}	30	
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}	50	
Junction Temperature		T_J	150	$^\circ C$
Storage Temperature Range		T_{stg}	-55 to 150	

N-Channel MOSFET

AO6404 (KO6404)

■ 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	20			V
Gate-Source Breakdown Voltage	BV _{GSO}	V _{DS} =0V, I _G =±250μA	±12			
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =16V, V _{GS} =0V			10	μA
		V _{DS} =16V, V _{GS} =0V, T _J =55°C			25	
Gate-Body Leakage Current	I _{GSS}	V _{DS} =0V, V _{GS} =±10V			±10	μA
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250 μA	0.5		1	V
Static Drain-Source On-Resistance	R _{DS(on)}	V _{GS} =10V, I _D =8.5A			17	mΩ
		V _{GS} =10V, I _D =8.5A T _J =125°C			20	
		V _{GS} =4.5V, I _D =5A			18	
		V _{GS} =2.5V, I _D =4A			24	
		V _{GS} =1.8V, I _D =3A			33	
On State Drain Current	I _{D(ON)}	V _{GS} =4.5V, V _{DS} =5V	30			A
Forward Transconductance	g _{FS}	V _{DS} =5V, I _D =8A		36		S
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =10V, f=1MHz		1810		pF
Output Capacitance	C _{oss}			232		
Reverse Transfer Capacitance	C _{rss}			200		
Gate Resistance	R _g	V _{GS} =0V, V _{DS} =0V, f=1MHz		1.6		Ω
Total Gate Charge	Q _g	V _{GS} =4.5V, V _{DS} =10V, I _D =8.5A		17.9		nC
Gate Source Charge	Q _{gs}			1.5		
Gate Drain Charge	Q _{gd}			4.7		
Turn-On DelayTime	t _{d(on)}	V _{GS} =10V, V _{DS} =10V, R _L =1.2Ω, R _G =3Ω		2.5		ns
Turn-On Rise Time	t _r			7.2		
Turn-Off DelayTime	t _{d(off)}			49		
Turn-Off Fall Time	t _f			10.8		
Body Diode Reverse Recovery Time	t _{rr}	I _F = 8.5A, di/dt= 100A/us		22		nC
Body Diode Reverse Recovery Charge	Q _{rr}			9.8		
Maximum Body-Diode Continuous Current	I _S				2.9	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	D4**
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N-Channel MOSFET

AO6404 (KO6404)

■ Typical Characteristics

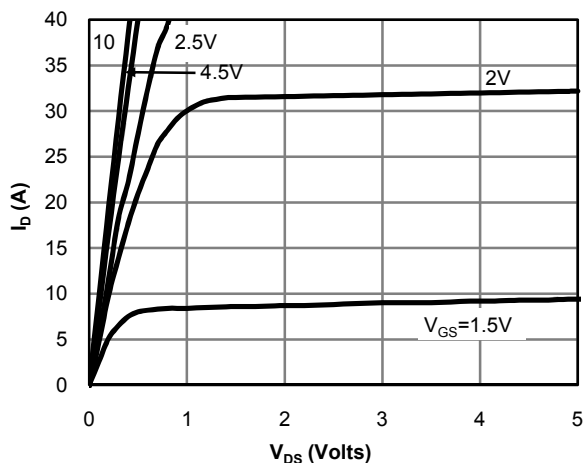


Fig 1: On-Region Characteristics

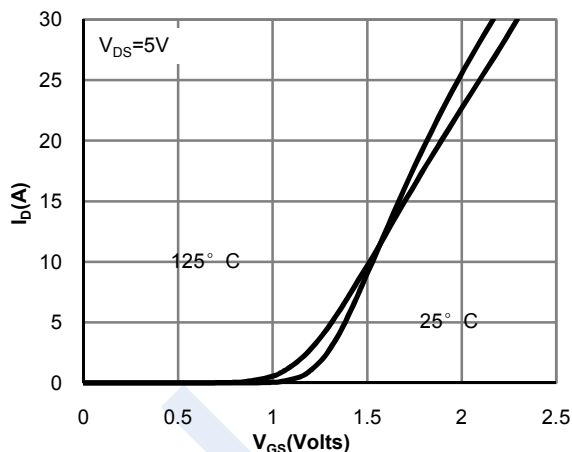


Figure 2: Transfer Characteristics

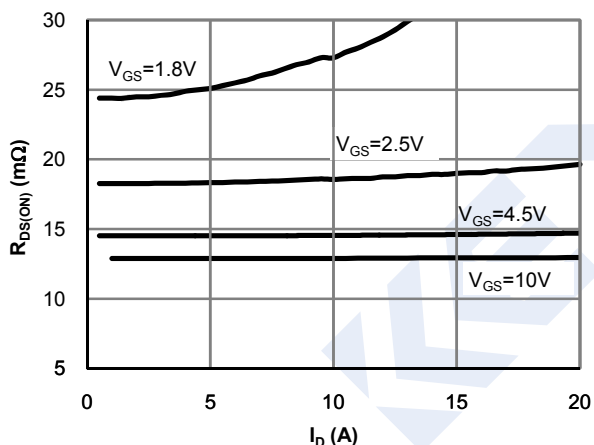


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

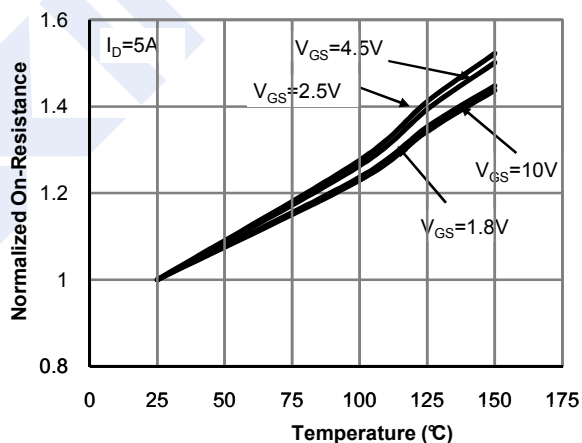


Figure 4: On-Resistance vs. Junction Temperature

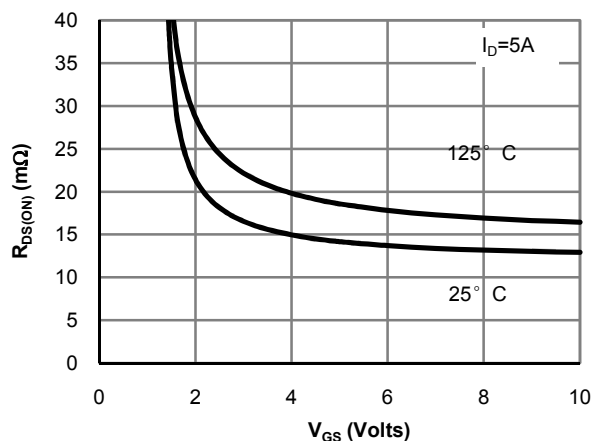


Figure 5: On-Resistance vs. Gate-Source Voltage

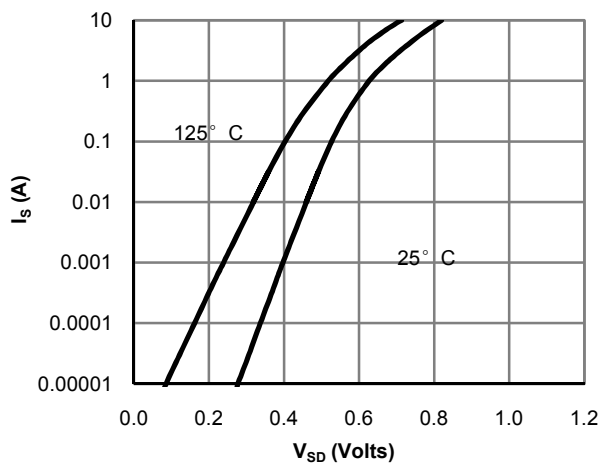


Figure 6: Body-Diode Characteristics

N-Channel MOSFET

AO6404 (KO6404)

■ Typical Characteristics

