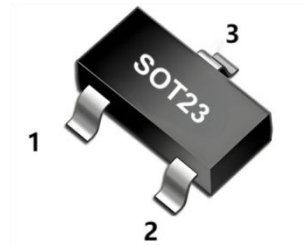


-4.8A, -20V P-CHANNEL ENHANCEMENT MODE POWER MOSFET

■ **DESCRIPTION**

The 3415 is a P-channel MOS Field Effect Transistor. It uses our advanced technology to provide the customers with high switching speed and a minimum on-state resistance. The AO3415 is suitable for high voltage switching applications.



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| 1. GATE |
| 2. SOURCE |
| 3. DRAIN |

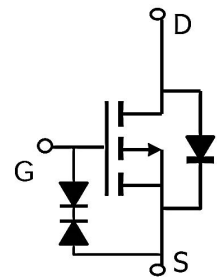
■ **FEATURE**

Excellent RDS(ON), low gate charge, low gate voltages

■ **APPLICATION**

Load switch and in PWM applications

Equivalent Circuit



■ **ABSOLUTE MAXIMUM RATINGS**(TA=25°C, unless otherwise specified.)

SYMBOL	PARAMETER	VALUE	UNIT
VDS	Drain-Source Voltage	-20	V
VGS	Gate Source Voltage	±8	V
ID	Continuous Drain Current (t ≤ 10s)	-4.8	A
PD	Power Dissipation	0.8	W
TJ	Junction Temperature	150	°C
TSTG	Storage Temperature	-55~150	°C
RθJA	Thermal Resistance From Junction To Ambient	156	°C/W

Note: Absolute maximum ratings are those values beyond which the device could be permanently damaged.

Absolute maximum ratings are stress ratings only and functional device operation is not implied.

■ ELECTRICAL CHARACTERISTICS (TA=25°C, unless otherwise specified)

PARAMETER	SYMBOL	TEST CONDITIONS	MIN	TYP	MAX	UNIT
STATIC CHARACTERISTICS						
Drain-Source Breakdown Voltage	V(BR)DSS	V _{GS} =0V, I _D =-250μA	-20			V
Gate-Source Leakage Current	I _{GSS}	V _{GS} =±8V, V _{DS} =0V			±10	μA
		V _{GS} =±4.5V, V _{DS} =0V			±1	
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-16V, V _{GS} =0V			-1	μA
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250μA	-0.3	-0.56	-1	V
Drain-source on-state resistance(Note 1)	R _{DS(ON)}	V _{GS} =-10V, I _D =-4A			50	mΩ
		V _{GS} =-4.5V, I _D =-4A		30	38	
		V _{GS} =-2.5V, I _D =-2A		38	48	
Body diode voltage(Note 2)	V _{SD}	V _{GS} =0V, I _S =-1A			-1	V
Forward tranconductance(Note 2)	g _{FS}	V _{DS} =-5V, I _D =-4A	8			S
DYNAMIC CHARACTERISTICS(Note 3)						
Input Capacitance	C _{ISS}	V _{GS} =0V, V _{DS} =-10V, f=1MHz		1450		pF
Output Capacitance	C _{OSS}			205		
Reverse Transfer Capacitance	C _{RSS}			160		
Gate resistance	R _g	V _{DS} =0V, V _{GS} =0V, f =1MHz		6.5		Ω
SWICHING CHARACTERISTICS						
Total gate charge	Q _g	V _{DS} =-10V, V _{GS} =-4.5V I _D =-4A		17.2		nC
Gate-Source charge	Q _{gs}			1.3		
Gate-drain charge	Q _{gd}			4.5		
Turn-On Delay Time(Note 3)	t _{d(on)}	V _{DS} =-10V, R _L =2.5Ω, V _{GS} =-4.5V, R _{GEN} =3Ω		9.5		ns
Turn-on rise time(Note 3)	t _r			17		
Turn-Off Delay Time(Note 3)	t _{d(off)}			94		
Turn-off fall time(Note 3)	t _f			35		

- Notes:
- 1.Repetitive rating,pulse width limited by junction temperature.
 2. Pulse Test : Pulse Width ≤ 300μs, Duty Cycle ≤ 2 %.
 - 3.These parameters have no way to verify.
 - 4.Device mounted on 1"×1" FR-4 PCB with high coverage 2oz Copper ,double sided. Copper, t≤10s.

■ TYPICAL CHARACTERISTICS

