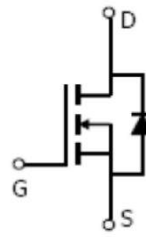# AO3414

Plastic-Encapsulate MOSFET(N-Channel)

FEATURES

· High Power and current handing capability

· Lead free product is acquired

· Surface Mout Package SC-59

SC-59

1：Gate　2：Source　3：Drain

MAXIMUM RATINGS (TA=25℃ unless otherwise noted)

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	30	V
V_{GS}	Gate-Source voltage	± 12	V
I_D	Drain current	4.5	A
P_D	Power Dissipation	1.4	W
T_j	Junction Temperature	-55-150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS (Tamb=25℃unless otherwise specified)

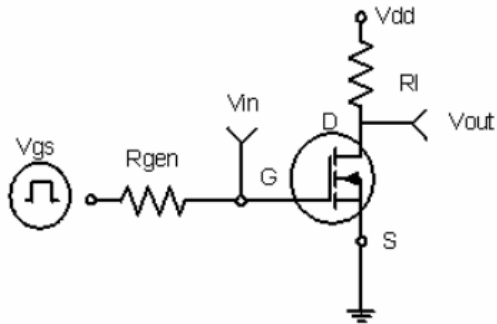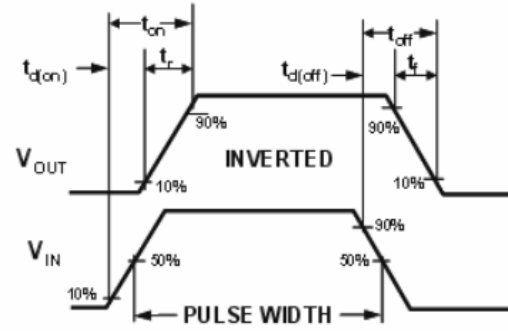| Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=250uA	25			V
Gate-Threshold Voltage	$V_{th(GS)}$	V_{DS}= V_{GS}, I_D=250 uA	0.7	0.9	1.4	V
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=$\pm$12V			± 100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=30V, V_{GS}=0V			1	uA
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=2. 5V, I_D=4A			60	mΩ
		V_{GS}=4. 5V, I_D=2.9A			45	mΩ
		V_{GS}=10V, I_D=2.9A			41	mΩ
Forward Trans conductance	gfs	V_{DS}=5V, I_D=2.9A	10			s
Dynamic Characteristics						
Input Capacitance	Ciss	V_{DS}=15V, V_{GS}=0V, f=1MHz		623		pF
Output Capacitance	Coss			99		
Reverse Transfer Capacitance	Crss			77		
Switching Capacitance						
Turn-on Delay Time	$t_{d(on)}$	V_{DD}=15V, I_D=2. 9A, V_{GS}=10V R_{GEN}=3Ω		3.3		nS
Turn-on Rise Time	t_r			4.8		nS
Turn-off Delay Time	$t_{d(off)}$			26		nS
Turn-off Fall Time	t_r			4		nS
Total Gate Charge	Q_g	V_{DS}=15V, I_D=4. 5A, V_{GS}=4. 5V,		9.5		nC
Gate-Source Charge	Q_{gs}			1.5		nC
Gate-Drain Charge	Q_{gd}			3		nC
Drain-Source Diode Characteristics						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_D=2. 9A		0.75	1.2	V
Diode Forward Current	Is				2.9	A

Typical Characteristics

Figure 1:Switching Test Circuit

Figure 2:Switching Waveforms

REV.07

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