

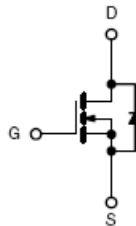
FEATURE

- High density cell design for low $R_{DS(ON)}$
- Voltage controlled small signal switch
- Rugged and reliable
- High saturation current capability

SOT-23-3L

1. GATE
2. SOURCE
3. DRAIN

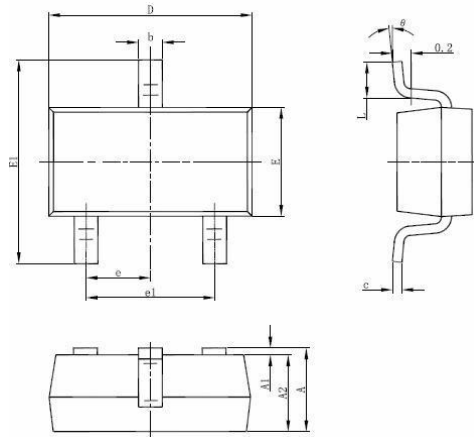
Equivalent Circuit



Marking

Type number	Marking code
AO3400A	AO9T

SOT-23-3L



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	1.050	1.250	0.041	0.049
A1	0.000	0.100	0.000	0.004
A2	1.050	1.150	0.041	0.045
b	0.300	0.500	0.012	0.020
c	0.100	0.200	0.004	0.008
D	2.820	3.020	0.111	0.119
E	1.500	1.700	0.059	0.067
E1	2.650	2.950	0.104	0.116
e	0.950(BSC)		0.037(BSC)	
e1	1.800	2.000	0.071	0.079
L	0.300	0.600	0.012	0.024
θ	0°	8°	0°	8°

Maximum ratings ($T_a=25^{\circ}\text{C}$ unless otherwise noted)

Parameter	Symbol	Value	Unit
Drain-Source Voltage	V_{DS}	30	V
Gate-Source Voltage	V_{GS}	± 12	V
Continuous Drain Current	I_D	5.8	A
Drain Current-Pulsed (note 1)	I_{DM}	30	A
Power Dissipation	P_D	1.5	W
Thermal Resistance from Junction to Ambient (note 2)	$R_{\theta JA}$	357	$^{\circ}\text{C/W}$
Junction Temperature	T_J	150	$^{\circ}\text{C}$
Storage Temperature	T_{STG}	-55~+150	$^{\circ}\text{C}$

AO3400A

Electrical characteristics (T_a=25°C unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
Off Characteristics						
Drain-source breakdown voltage	V _{(BR) DSS}	V _{GS} = 0V, I _D =250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} =24V,V _{GS} = 0V			1	μA
Gate-source leakage current	I _{GSS}	V _{GS} =±12V, V _{DS} = 0V			±100	nA
On characteristics						
Drain-source on-resistance (note 3)	R _{DS(on)}	V _{GS} =10V, I _D =5.8A		21	28	mΩ
		V _{GS} =4.5V, I _D =5A			38	mΩ
		V _{GS} =2.5V,I _D =4A			52	mΩ
Forward tranconductance	g _{FS}	V _{DS} =5V, I _D =5A	8			S
Gate threshold voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =250μA	0.7		1.4	V
Dynamic Characteristics (note 4,5)						
Input capacitance	C _{iss}	V _{DS} =15V,V _{GS} =0V,f =1MHz			1050	pF
Output capacitance	C _{oss}			99		pF
Reverse transfer capacitance	C _{rss}			77		pF
Gate resistance	R _g	V _{DS} =0V,V _{GS} =0V,f =1MHz			3.6	Ω
Switching Characteristics (note 4,5)						
Turn-on delay time	t _{d(on)}	V _{GS} =10V,V _{DS} =15V, R _L =2.7Ω,R _{GEN} =3Ω			5	ns
Turn-on rise time	t _r				7	ns
Turn-off delay time	t _{d(off)}				40	ns
Turn-off fall time	t _f				6	ns
Drain-source diode characteristics and maximum ratings						
Diode forward voltage (note 3)	V _{SD}	I _S =1A,V _{GS} =0V			1	V

Note :

1. Repetitive Rating : Pulse width limited by maximum junction temperature.
2. Surface Mounted on FR4 Board, t < 5 sec.
3. Pulse Test : Pulse Width≤300μs, Duty Cycle ≤ 2%.
4. Guaranteed by design, not subject to production testing.

RATING AND CHARACTERISTIC CURVES (AO3400A)

