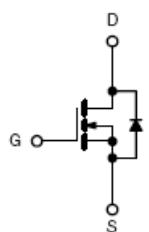


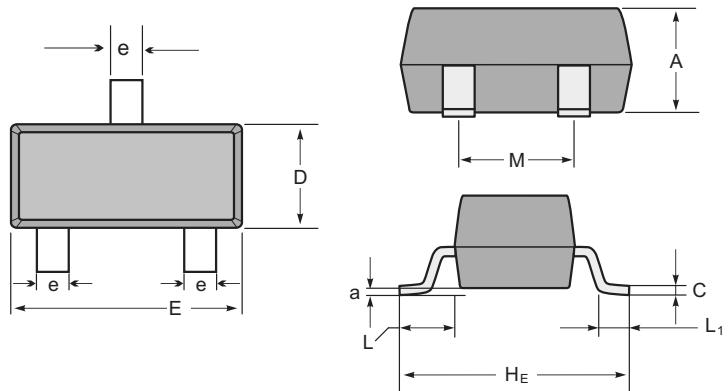
**FEATURE**

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

**SOT-23**

**Equivalent Circuit**

**Marking**

Type number	Marking code
AO3400	AO9T


**SOT-23 mechanical data**

	UNIT	A	C	D	E	HE	e	M	L	L <sub>1</sub>	a
mm	max	1.1	0.15	1.4	3.0	2.6	0.5	1.95	0.55 (ref)	0.36 (ref)	0.0
	min	0.9	0.08	1.2	2.8	2.2	0.3	1.7			0.15
mil	max	43	6	55	118	102	20	77	22 (ref)	14 (ref)	0.0
	min	35	3	47	110	87	12	67			6

**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	$V_{GS}$	$\pm 12$	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	$^\circ\text{C}/\text{W}$
Junction Temperature	$T_J$	150	$^\circ\text{C}$
Storage Temperature	$T_{STG}$	-55~+150	$^\circ\text{C}$

# AO3400

## Electrical characteristics ( $T_a=25^\circ\text{C}$ unless otherwise noted)

Parameter	Symbol	Test Condition	Min	Typ	Max	Units
<b>Off Characteristics</b>						
Drain-source breakdown voltage	$V_{(\text{BR})\text{DSS}}$	$V_{GS} = 0V, I_D = 250\mu\text{A}$	30			V
Zero gate voltage drain current	$I_{DSS}$	$V_{DS} = 24V, V_{GS} = 0V$			1	$\mu\text{A}$
Gate-source leakage current	$I_{GSS}$	$V_{GS} = \pm 12V, V_{DS} = 0V$			$\pm 100$	nA
<b>On characteristics</b>						
Drain-source on-resistance (note 3)	$R_{DS(\text{on})}$	$V_{GS} = 10V, I_D = 5.8\text{A}$		28	35	$\text{m}\Omega$
		$V_{GS} = 4.5V, I_D = 5\text{A}$			40	$\text{m}\Omega$
		$V_{GS} = 2.5V, I_D = 4\text{A}$			52	$\text{m}\Omega$
Forward transconductance	$g_{FS}$	$V_{DS} = 5V, I_D = 5\text{A}$	8			S
Gate threshold voltage	$V_{GS(\text{th})}$	$V_{DS} = V_{GS}, I_D = 250\mu\text{A}$	0.7		1.4	V
<b>Dynamic Characteristics</b> (note 4,5)						
Input capacitance	$C_{iss}$	$V_{DS} = 15V, V_{GS} = 0V, f = 1\text{MHz}$			1050	pF
Output capacitance	$C_{oss}$			99		pF
Reverse transfer capacitance	$C_{rss}$			77		pF
Gate resistance	$R_g$	$V_{DS} = 0V, V_{GS} = 0V, f = 1\text{MHz}$			3.6	$\Omega$
<b>Switching Characteristics</b> (note 4,5)						
Turn-on delay time	$t_{d(on)}$	$V_{GS} = 10V, V_{DS} = 15V, R_L = 2.7\Omega, R_{GEN} = 3\Omega$			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
<b>Drain-source diode characteristics and maximum ratings</b>						
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  $\leq 300\mu\text{s}$ , Duty Cycle  $\leq 2\%$ .
4. Guaranteed by design, not subject to production testing.

## RATING AND CHARACTERISTIC CURVES (AO3400)

