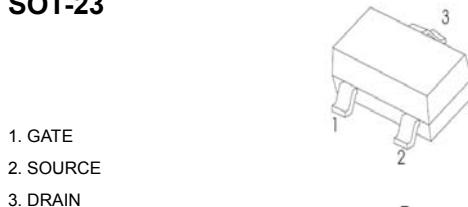


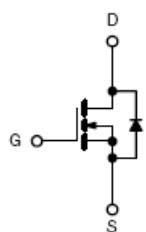
FEATURE

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

SOT-23

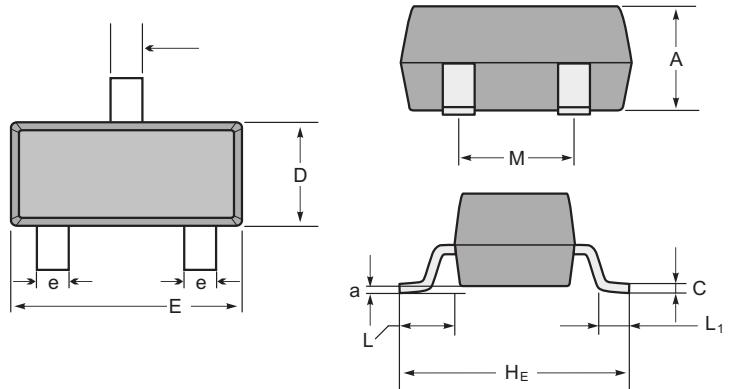


Equivalent Circuit



Marking

Type number	Marking code
AO3400	AO9T



SOT-23 mechanical data

	UNIT	A	C	D	E	He	e	M	L	L ₁	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}	± 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
Off Characteristics						
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	μA
Gate-source leakage current	I_{GSS}	$V_{GS} = \pm 12V, V_{DS} = 0V$			± 100	nA
On characteristics						
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
Dynamic Characteristics (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	Ω
Switching Characteristics (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
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 $\leq 300\mu\text{s}$, Duty Cycle $\leq 2\%$.
4. Guaranteed by design, not subject to production testing.

RATING AND CHARACTERISTIC CURVES (AO3400)

