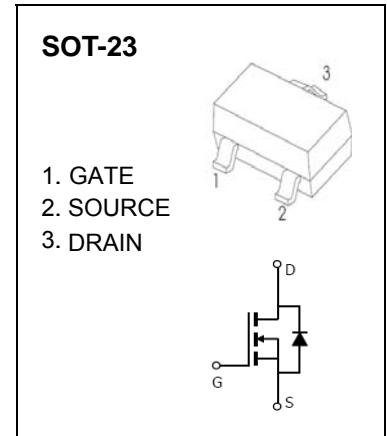


AO3404A-ML N-Channel Enhancement Mode Field Effect Transistor

SOT-23 Plastic-Encapsulate MOSFETS

DESCRIPTION

The AO3404A-ML use advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge. This device is suitable for use as a load switch or in PWM applications. The source leads are separated to allow a Kelvin connection to the source, which may be used to bypass the source inductance.



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}	± 20	V
Continuous drain current ($t \leq 10\text{s}$)	I_D	5.8	A
Pulsed drain current *	I_{DM}	30	A
Thermal resistance from junction to ambient	$R_{\theta JA}$	357	$^{\circ}\text{C}/\text{W}$
Junction temperature	T_J	150	$^{\circ}\text{C}$
Storage temperature	T_{stg}	-55~ 150	$^{\circ}\text{C}$

* Repetitive rating : Pulse width limited by maximum junction temperature.

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

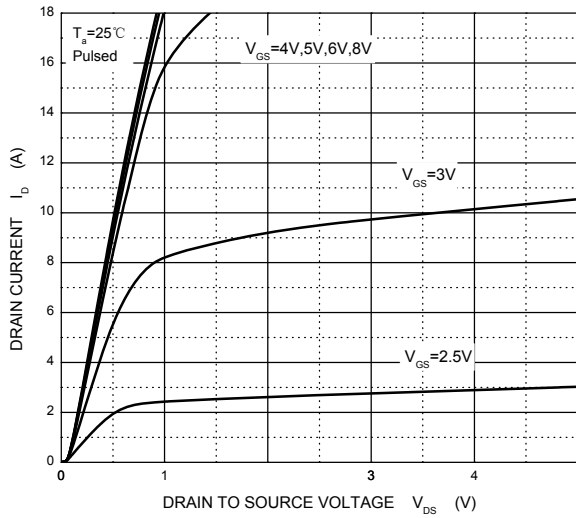
Parameter	Symbol	Test Condition	Min	Typ	Max	Units
STATIC PARAMETERS						
Drain-source breakdown voltage	V _{(BR)DSS}	V _{GS} = 0V, I _D = 250μA	30			V
Zero gate voltage drain current	I _{DSS}	V _{DS} = 30V, V _{GS} = 0V			1	μA
Gate-body leakage current	I _{GSS}	V _{GS} = ±20V, V _{DS} = 0V			±100	nA
Gate threshold voltage	V _{GS(th)}	V _{DS} = V _{GS} , I _D = 250μA	1		3	V
Drain-source on-resistance (note 1)	R _{DS(on)}	V _{GS} = 10V, I _D = 5.8A			30	mΩ
		V _{GS} = 4.5V, I _D = 4.8A			42	mΩ
Forward transconductance (note 1)	g _{FS}	V _{DS} = 5V, I _D = 5.8A	5			S
Diode forward voltage	V _{SD}	I _S = 1A			1	V
DYNAMIC PARAMETERS (note 2)						
Input capacitance	C _{iss}	V _{DS} = 15V, V _{GS} = 0V, f = 1MHz			820	pF
Output capacitance	C _{oss}			118		pF
Reverse transfer capacitance	C _{rss}			85		pF
Gate resistance	R _g	V _{DS} = 0V, V _{GS} = 0V, f = 1MHz			1.5	Ω
SWITCHING PARAMETERS (note 2)						
Turn-on delay time	t _{d(on)}	V _{GS} = 10V, V _{DS} = 15V, R _L = 2.6Ω, R _{GEN} = 3Ω			6.5	ns
Turn-on rise time	t _r			3.1		ns
Turn-off delay time	t _{d(off)}			15.1		ns
Turn-off fall time	t _f			2.7		ns

Note :

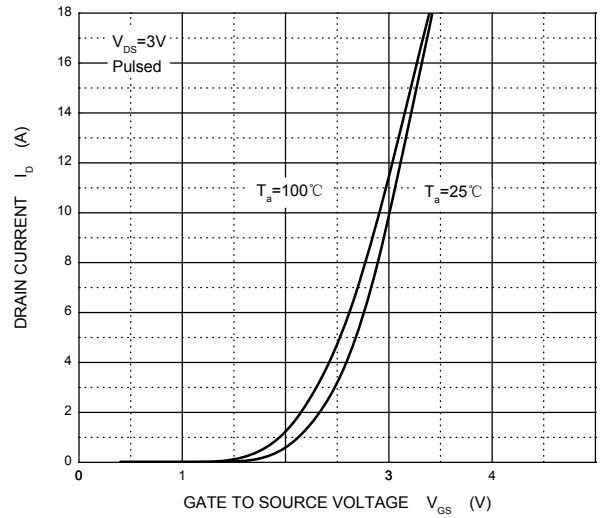
1. Pulse Test : Pulse width ≤ 300μs, duty cycle ≤ 0.5%.
2. These parameters have no way to verify.

Typical Characteristics

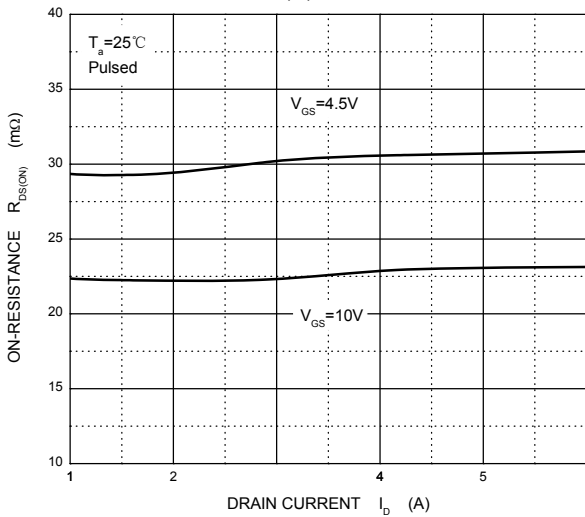
Output Characteristics



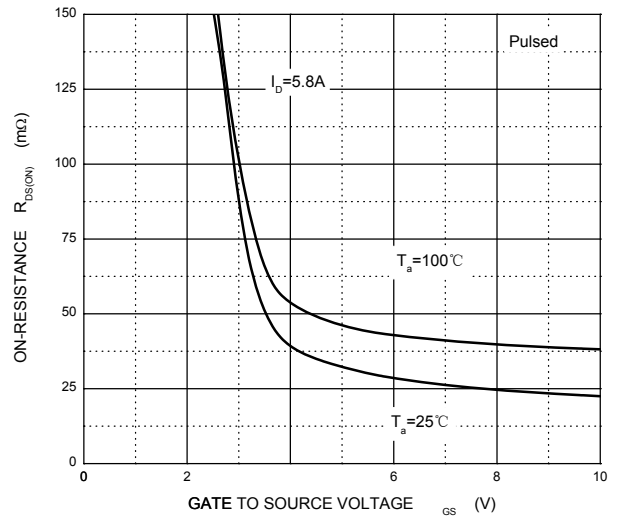
Transfer Characteristics



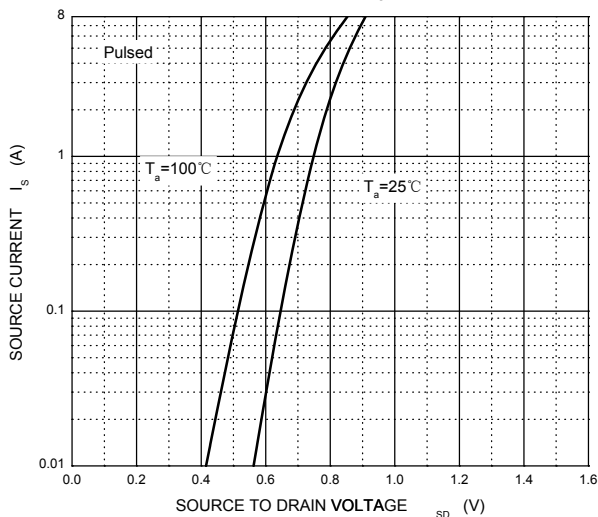
$R_{DS(ON)}$ — I_D



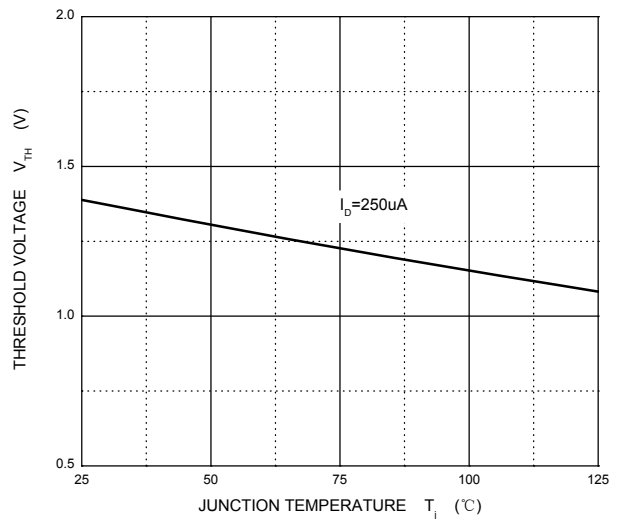
$R_{DS(ON)}$ — V_{GS}



I_S — V_{SD}



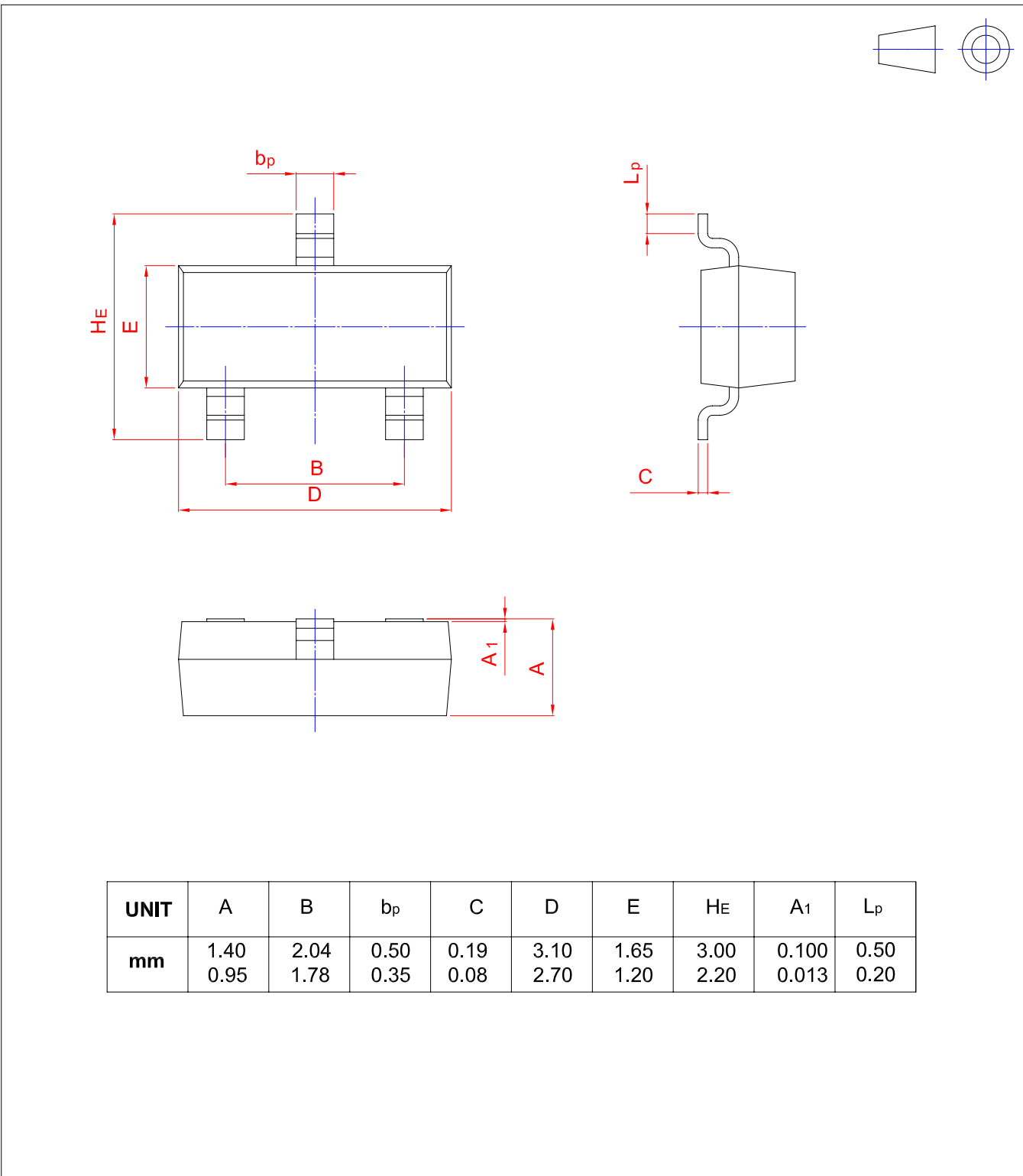
Threshold Voltage



PACKAGE OUTLINE

Plastic surface mounted package; 3 leads

SOT-23



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