ACE3400B

N-Channel Enhancement Mode MOSFET

Description

The ACE3400BBM+ uses advanced trench technology to provide excellent $R_{DS(ON)}$ and low gate charge low gate charge and operation with gate voltages as low as 2.5V. This device is suitable for use as a load switch or in PWM applications.

Features

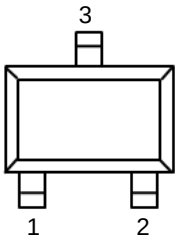
- V_{DS} 30V
- $R_{DS(ON)}$@V_{GS}=10V, I_{DS}=5.2A, Typ 24mΩ
- $R_{DS(ON)}$@V_{GS}=4.5V, I_{DS}=5A, Typ 27mΩ
- Fast switching speed
- Low threshold voltage (0.8V) makes this device ideal for portable equipment

Absolute Maximum Ratings

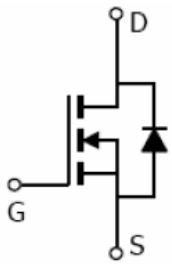
Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±12	V
Drain Current	Continuous (Note 1)	I_D	5.2	A
	Pulsed (Note 2)	I_{DM}	30	
Power Dissipation (Note 1)		P_D	1	W
Operating and storage junction temperature range		T_J,T_{STG}	-55~+150	℃

Packaging Type

SOT-23-3L



SOT-23-3L	Description	Function
1	G	Gate
2	S	Source
3	D	Drain



Ordering information

ACE3400B XX + H

- Halogen - free
- Pb - free
- BM : SOT-23-3L

Electrical Characteristics

T_A=25℃, unless otherwise specified.

Parameter	Symbol	Test Conditions	Min	Typ	Max	Unit
Static						
Drain-source breakdown voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250μA	30	34		V
Zero gate voltage drain current	I_{DSS}	V_{DS}=24V, V_{GS}=0V			1	μA
Gate threshold voltage	$V_{GS(th)}$	V_{GS}=V_{DS}, I_{DS}=250μA	0.7	0.8	1	V
Gate leakage current	I_{GSS}	V_{GS}=±12V, V_{DS}=0V			±100	nA
Drain-source on-state resistance	$R_{DS(ON)}$	V_{GS}=10V, I_D=5.2A		24	28	mΩ
		V_{GS}=4.5V, I_D=5A		27	33	
		V_{GS}=2.5V, I_D=4A		39	52	
Forward transconductance	g_{FS}	V_{DS}=5V, I_D=5A	10	15		S
Diode forward voltage	V_{SD}	I_{SD}=1A, V_{GS}=0V		0.71	1	V
Turn-on delay time	$t_{d(on)}$	V_{DS}=15V, R_L=2.3Ω, V_{GS}=10V, R_{GEN}=3Ω			18	ns
Turn-off delay time	$t_{d(off)}$				70	
Input capacitance	Ciss	V_{GS}=0V, V_{DS}=15V, f=1.0MHz		697		pF
Output capacitance	Coss			259		
Reverse transfer capacitance	Crss			308		

Note : 1. DUT is mounted on a 1in ^{2} FR-4 board with 2oz. Copper in a still air environment at 25°

2. Repetitive rating, pulse width limited by junction temperature.

Typical Performance Characteristics

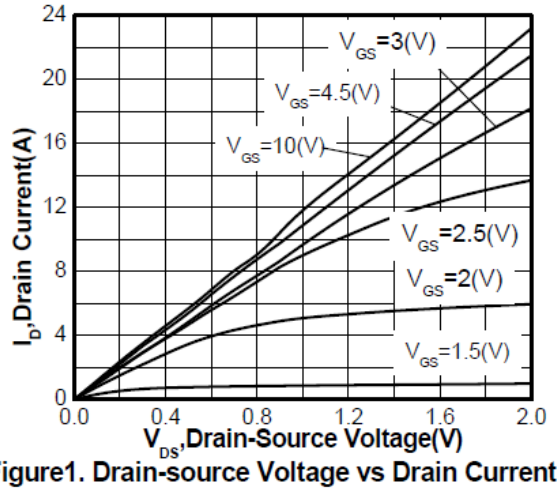


Figure1. Drain-source Voltage vs Drain Current

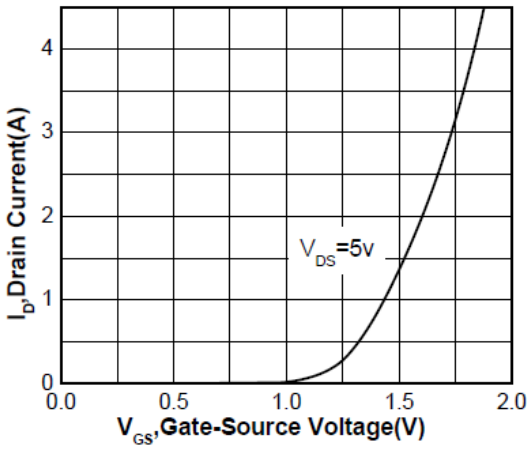


Figure2. Gate-Source Voltage vs Drain Current

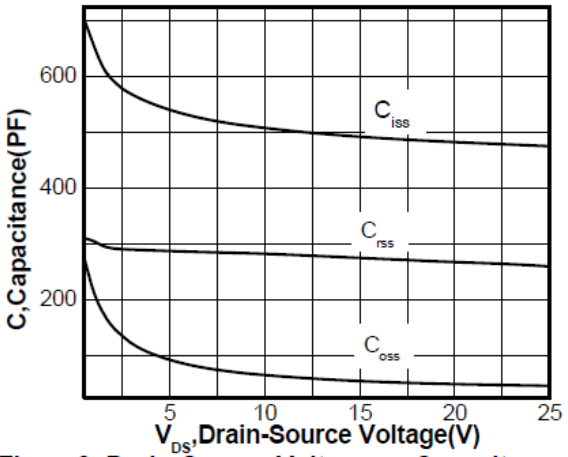


Figure3. Drain-Source Voltage vs Capacitance

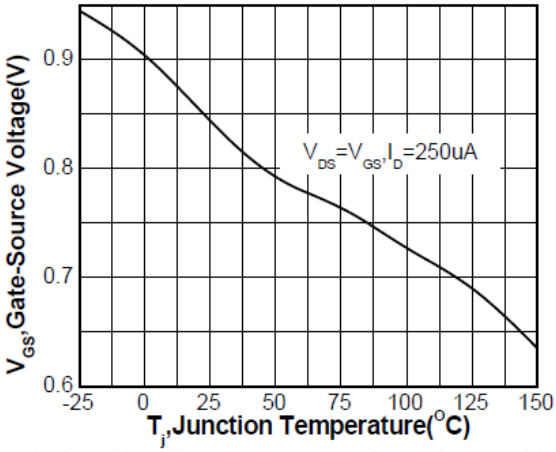


Figure4. Junction Temperature vs Gate-Source Voltage

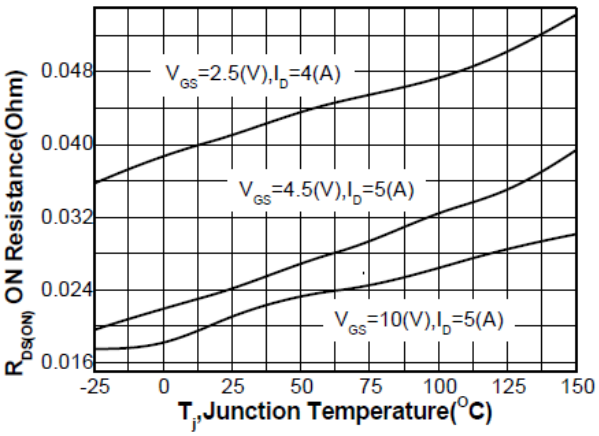


Figure5. Junction Temperature vs ON Resistance

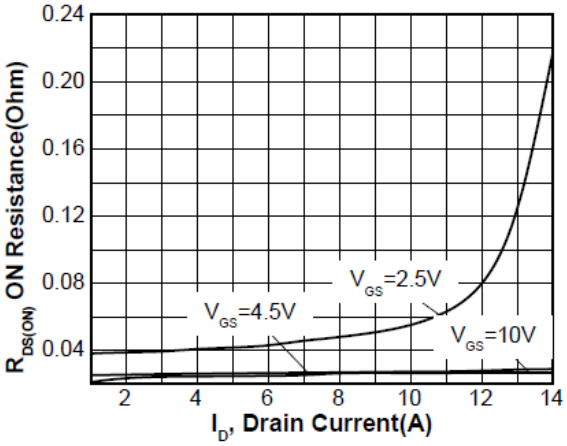


Figure6. Drain Current vs ON Resistance

Typical Performance Characteristics

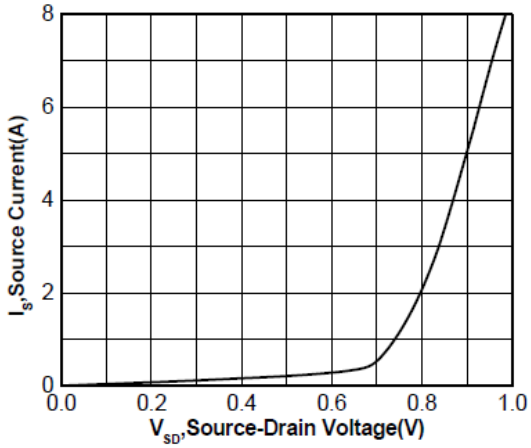


Figure7 Source-Drain Voltage vs Source Current

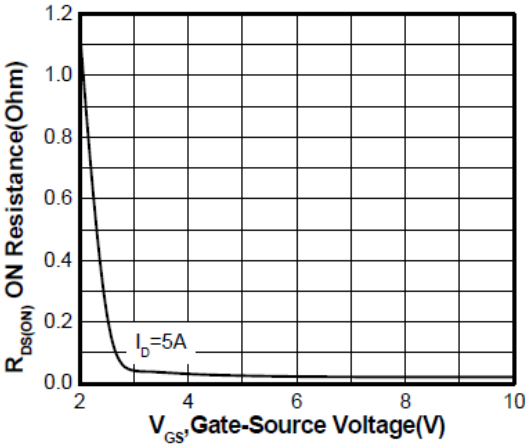
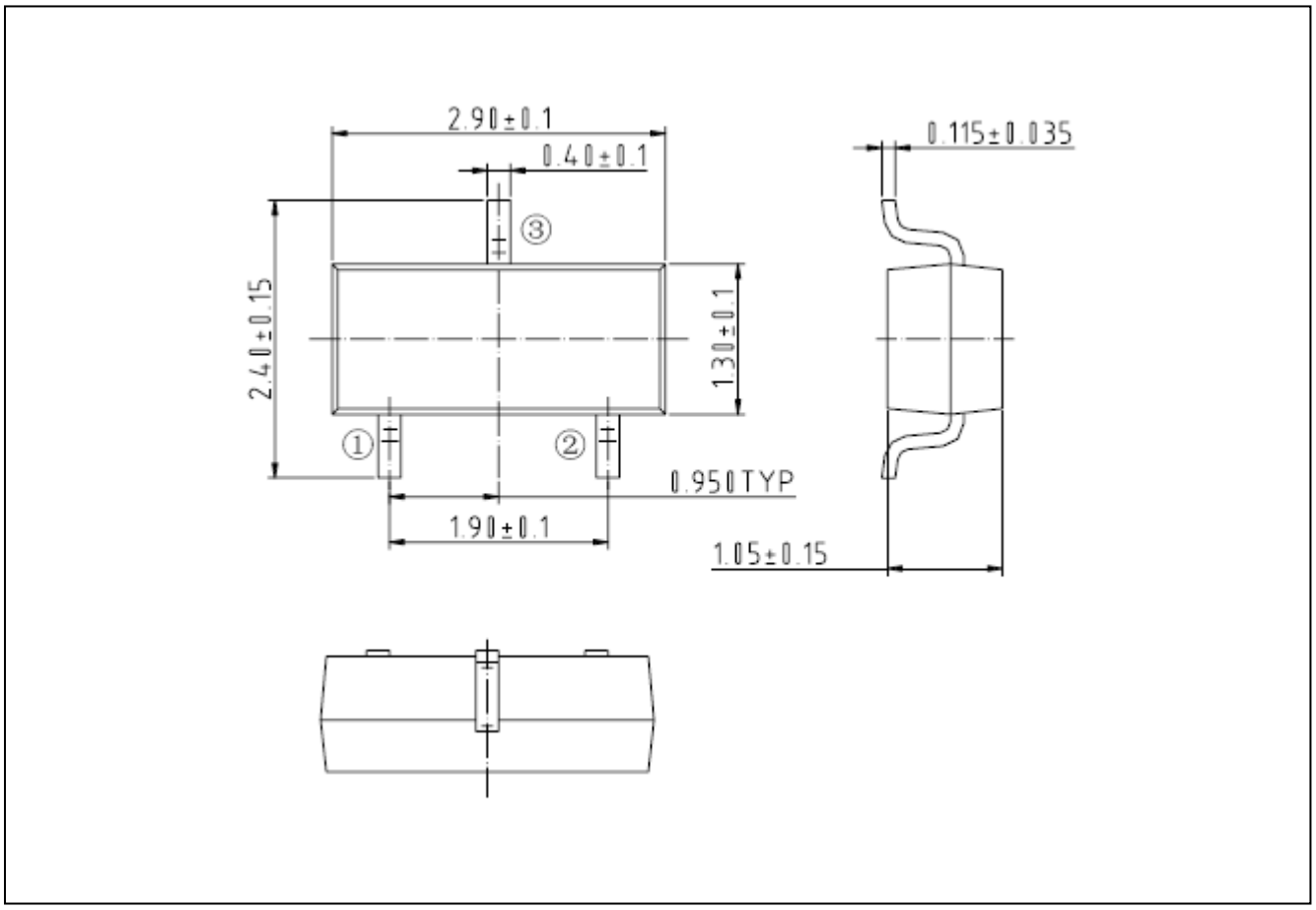


Figure8. Gate-Source Voltage vs ON Resistance

Packing Information

SOT-23-3L



Notes

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1. Life support devices or systems are devices or systems which, (a) are intended for surgical implant into the body, or (b) support or sustain life, and shoes failure to perform when properly used in accordance with instructions for use provided in the labeling, can be reasonably expected to result in a significant injury to the user.
2. A critical component is any component of a life support device or system whose failure to perform can be reasonably expected to cause the failure of the life support device or system, or to affect its safety or effectiveness.

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