ACE9435B

P-Channel Enhancement Mode Field Effect Transistor

Description

This P-Channel enhancement mode power FETs are produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device is particularly suited for low voltage application such as portable equipment, power management and other battery powered circuits, and low in-line power loss are needed in a very small outline surface mount package.

Features

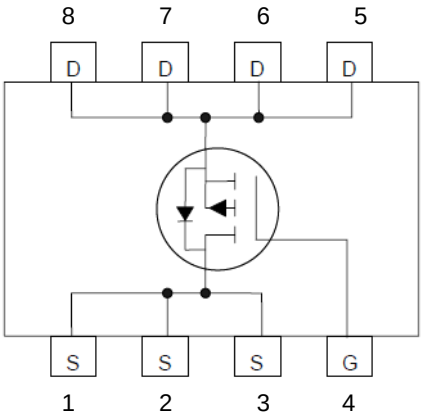
- V_{DS}(V)=-30V, I_D=-5.2A
- $R_{DS(ON)}$=51mΩ @ V_{GS}=-10V
- $R_{DS(ON)}$=68mΩ @ V_{GS}=-4.5V
- High density cell design for low $R_{DS(ON)}$

Absolute Maximum Ratings

Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	-30	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current (Note 1)	Continuous T_A=25°C	I_D	-5.2	A
	Pulsed (Note 2)		-50	
Total Power Dissipation (Note 1)		P_D	1.5	W
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to 150	°C

Packaging Type

SOP-8



Ordering information

ACE9435B XX + H

- Halogen - free
- Pb - free
- FM : SOP-8

Electrical Characteristics

T_A=25 °C unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-30	-36		V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-24V, V_{GS}=0V		0.02	-1	uA
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V		±1.5	±100	nA
On characteristics						
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-4.6A		51	60	mΩ
		V_{GS}=-4.5V, I_D=-2A		68	82	
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS}, I_D=-250uA	-1	-1.46	-3	V
Forward Transconductance	g_{FS}	V_{DS}=-5V, I_D=-6A		12		S
Switching						
Turn-On Delay Time	$T_{d(on)}$	V_{DS}=-15V,R_L=2.5Ω		8.6		ns
Turn-Off Delay Time	$t_{d(off)}$	R_{GEN}=3Ω, V_{GS}=-10V		28.2		
Dynamic Characteristics						
Input Capacitance	C_{iss}	V_{DS}=-15V, V_{GS}=0V f=1MHz		550		pF
Output Capacitance	C_{oss}			60		
Reverse Transfer Capacitance	C_{rss}			50		
Drain-source diode characteristics and maximum ratings						
Diode Forward Voltage	V_{SD}	V_{GS}=0V, I_S=-1A		-0.81		V

Note: 1. The value of P_D is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A =25°C. The value in any given application depends on the user's specific board design. The current rating is based on the DC thermal resistance rating.

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

Typical Performance Characteristics

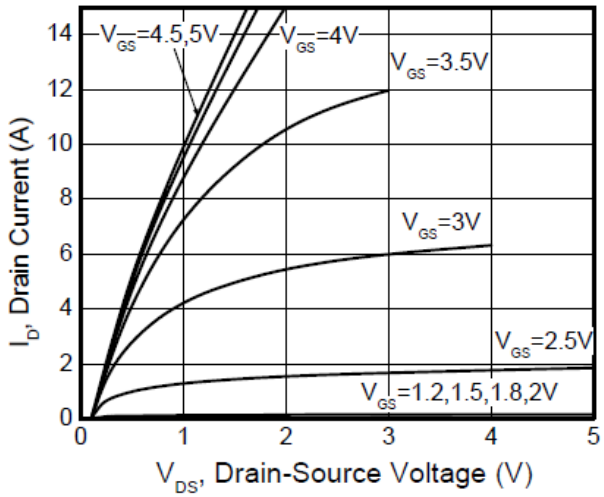


Figure 1. Output Characteristics

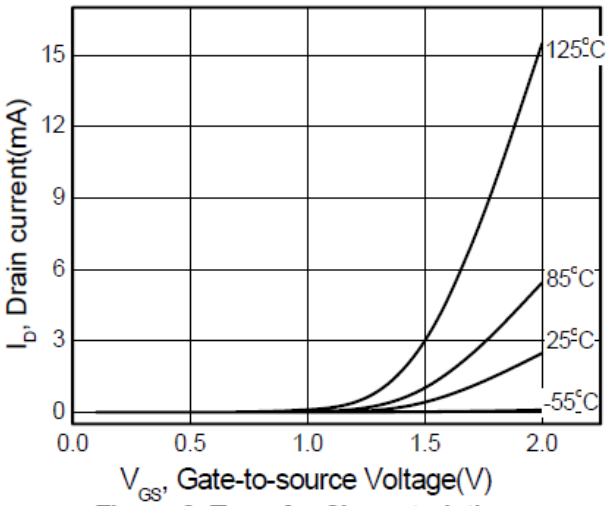


Figure 2. Transfer Characteristics

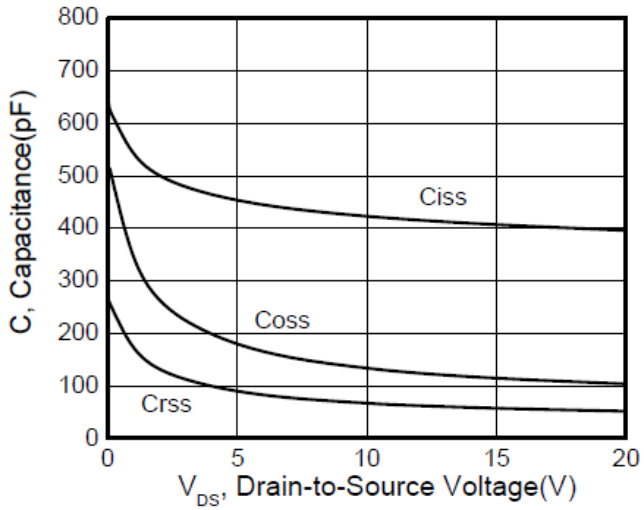


Figure 3. Capacitance

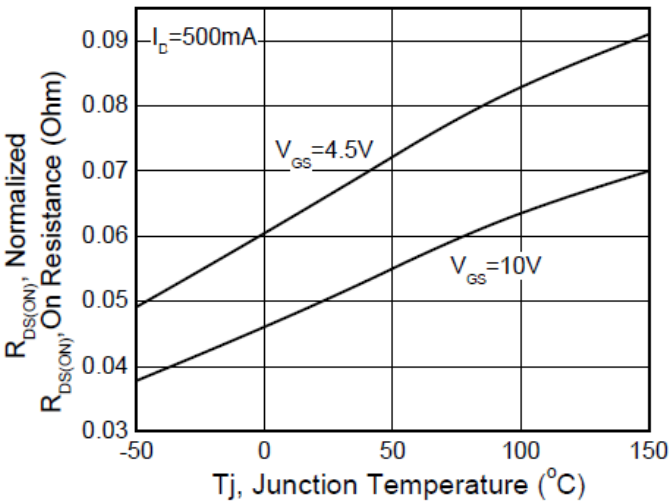


Figure 4. On Resistance Vs. Temperature

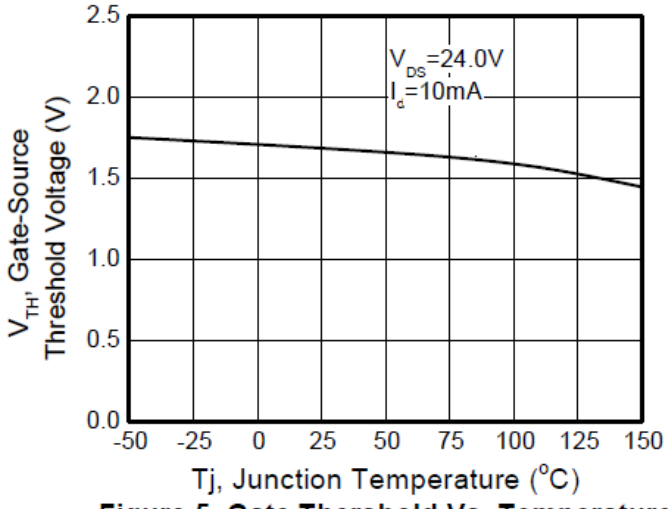


Figure 5. Gate Thershold Vs. Temperature

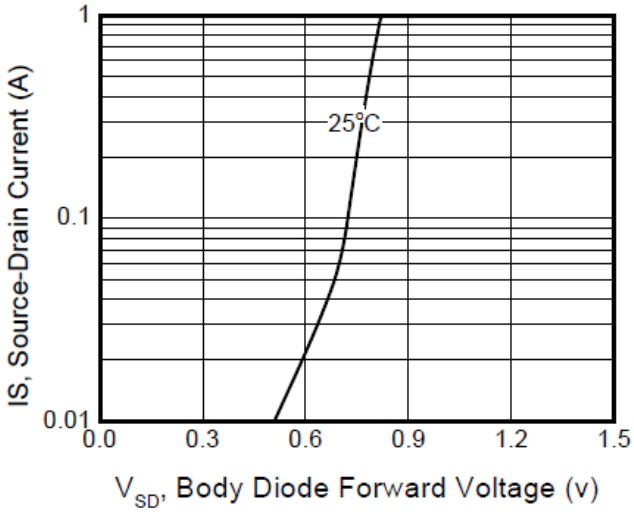
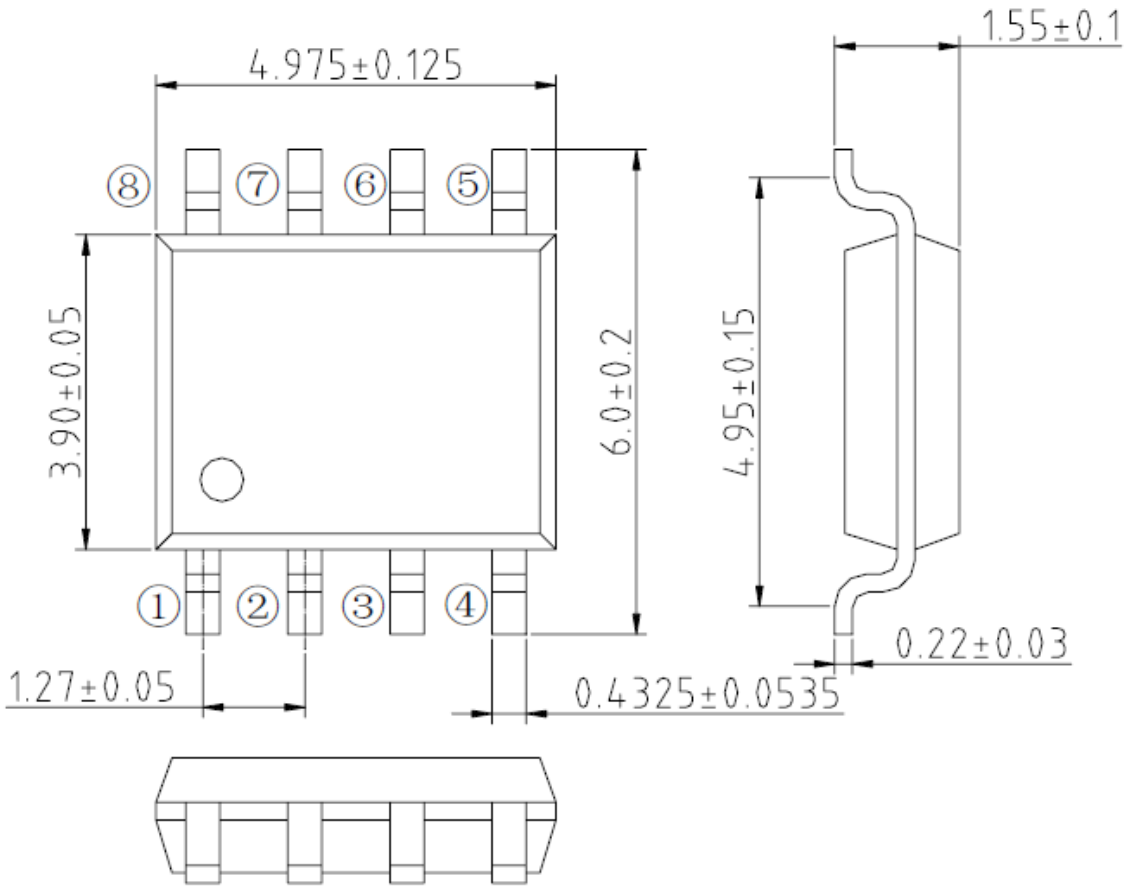


Figure 6.Body Diode Forward Voltage

Packing Information

SOP-8



Unit: mm

Notes

ACE does not assume any responsibility for use as critical components in life support devices or systems without the express written approval of the president and general counsel of ACE Electronics Co., LTD. As sued herein:

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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