ACE4908A

Dual P-Channel Enhancement Mode MOSFET

Description

The ACE4908A is the Dual P-Channel enhancement mode power field effect transistors are produced using high cell density, DMOS trench technology. This high density process is especially tailored to minimize on-state resistance and provide superior switching performance.

These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching, low in-line power loss, and resistance to transients are needed.

Features

- P-Channel
  -20V/1.0A,$R_{DS\ (ON)}$= 520mΩ@VGS=-4.5V
  -20V/0.8A,$R_{DS\ (ON)}$= 700mΩ@VGS=-2.5V
  -20V/0.7A,$R_{DS\ (ON)}$= 950mΩ@VGS=-1.8V
- Super high density cell design for extremely low $R_{DS\ (ON)}$
- Exceptional on-resistance and maximum DC current capability

APPLICATIONS

- Power Management in Note book
- Portable Equipment
- Battery Powered System
- DC/DC Converter
- Load Switch
- DSC
- LCD Display inverter

ACE4908A

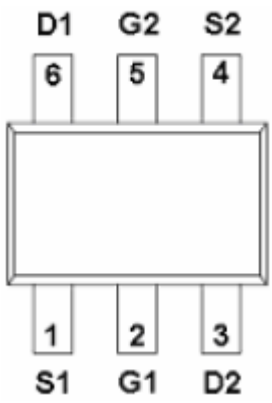
Dual P-Channel Enhancement Mode MOSFET

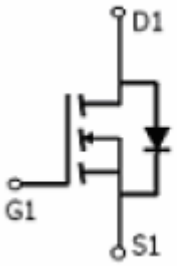
Absolute Maximum Ratings

Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	-20	V
Gate-Source Voltage		V_{GSS}	±12	V
Continuous Drain Current(T_J=150℃)	T_A=25°C	I_D	-1.0	A
	T_A=70°C		-0.7	
Pulse Drain Current		I_{DM}	-3	A
Continuous Source Current(Diode Conduction)		I_S	-0.6	
Power Dissipation	T_A=25°C	P_D	0.35	W
	T_A=70°C		0.19	
Operating and Storage Temperature Range		T_J,T_{STG}	-55 to 150	°C
Thermal Resistance-Junction to Ambient	T ≤ 10sec	$R_{\theta JA}$	360	°C/W
	Steady State		400	

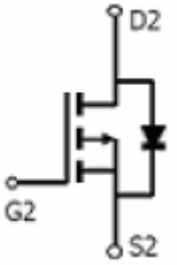
Packaging Type

SOT-363(SC-70-6)





P- channel



P- channel

Pin	Symbol	Description
1	S1	Source 1
2	G1	Gate 1
3	D2	Drain 2
4	S2	Source 2
5	G2	Gate 2
6	D1	Drain1

Ordering information

ACE4908A EM + H

- H: Halogen - free
- Pb - free
- EM : SOT363

Electrical Characteristics

T_A=25 °C unless otherwise noted

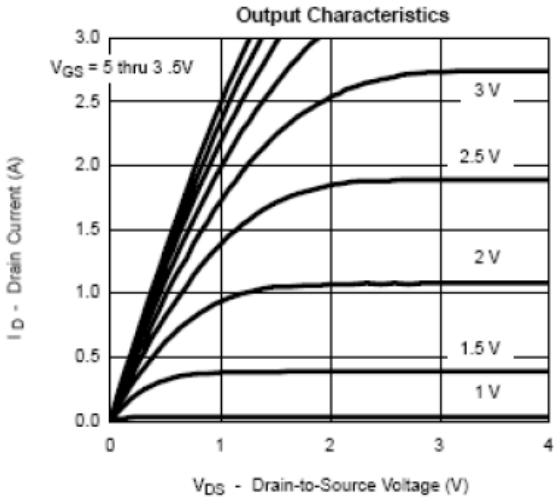
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=-250uA	-20			V
Gate Threshold Voltage	$V_{GS(th)}$	V_{DS}=V_{GS},I_D=-250uA	-0.35		-0.8	V
Gate Leakage Current	I_{GSS}	V_{DS}=0V ,V_{GS}=±12V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-20V, V_{GS}=0V			-1	uA
		V_{DS}=-20V,V_{GS}=0V,T_J=55℃			-5	
On-State Drain Current	$I_{D(on)}$	V_{DS}≤ -4.5V,V_{GS} =-5V	-2			A
Drain-Source On-State Resistance	$R_{DS(ON)}$	V_{GS}=-4.5V, I_D=-1.0A		0.42	0.52	Ω
		V_{GS}=-2.5V, I_D=-0.8A		0.58	0.70	
		V_{GS}=-1.8V, I_D=-0.5A		0.75	0.95	
Forward Transconductance	g_{FS}	V_{DS}=-10V, I_D=-1.0A		1.5		S
Diode Forward Voltage	V_{SD}	I_S=-0.5A ,V_{GS}=0V		-0.8	-1.2	V
Switching						
Total Gate Charge	Q_g	V_{DS}=-10V, V_{GS}=-4.5V, I_D=-0.88A		1.5	2.0	nC
Gate-Source Charge	Q_{gs}			0.3		
Gate-Drain Charge	Q_{gd}			0.2		
Turn-On Delay Time	$t_{d(on)}$	V_{GNE}=-4.5V, V_{DD}=-10V, R_L=20Ω, R_G=6Ω, I_D=-0.5A		18	30	ns
Turn-On Rise Time	t_r			25	40	
Turn-Off Delay Time	$t_{d(off)}$			15	45	
Turn- Off Rise Time	t_f			12	20	
Dynamic						
Input Capacitance	C_{iss}	V_{DS}=-10V, V_{GS}=0V,f=1MHz		145		pF
Output Capacitance	C_{oss}			25		
Reverse Transfer Capacitance	C_{rss}			10		

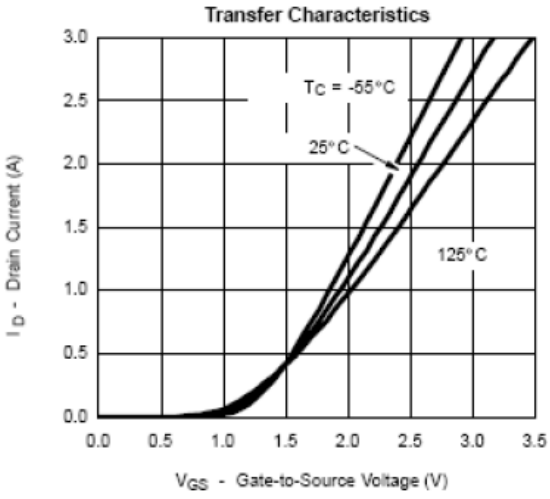
Note: A. The value of $R_{\theta JA}$ is measured with the device mounted on 1*1in FR-4 board with 2oz Copper, in a still air environment with T_A=25°C. The value in any given application depends on the user's specific board design.

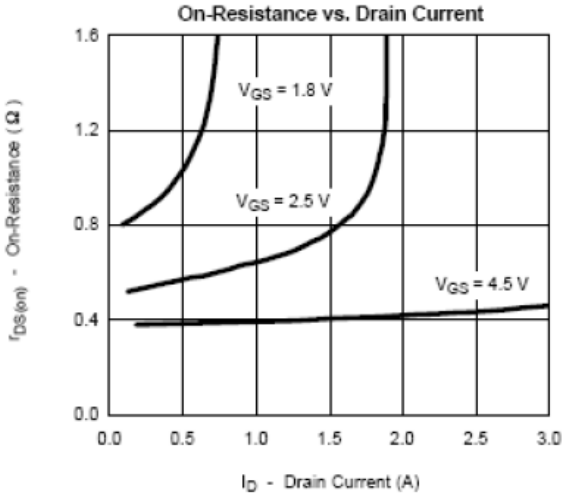
B. Repetitive rating, pulse width limited by junction temperature.

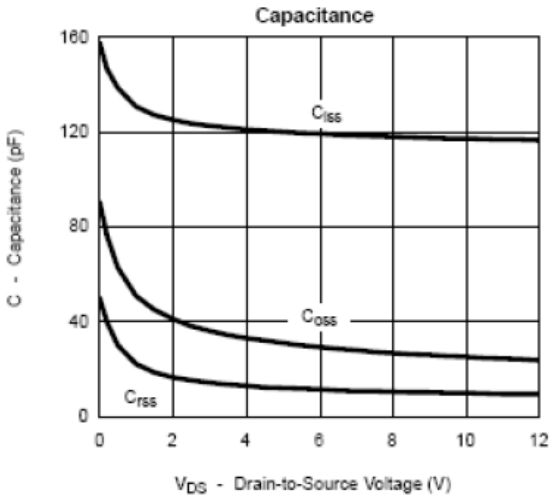
C. The current rating is based on the t≤ 10s junction to ambient thermal resistance rating.

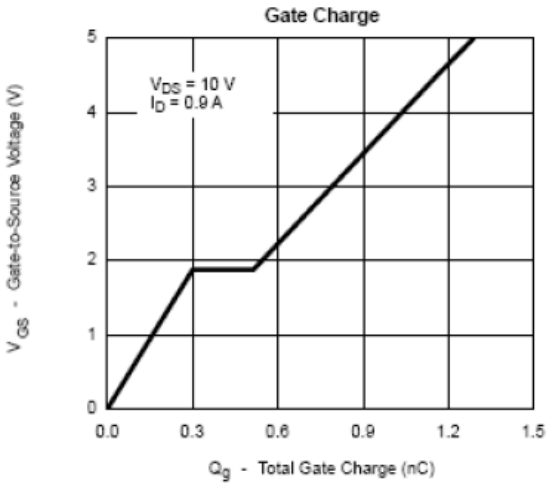
Typical Performance Characteristics

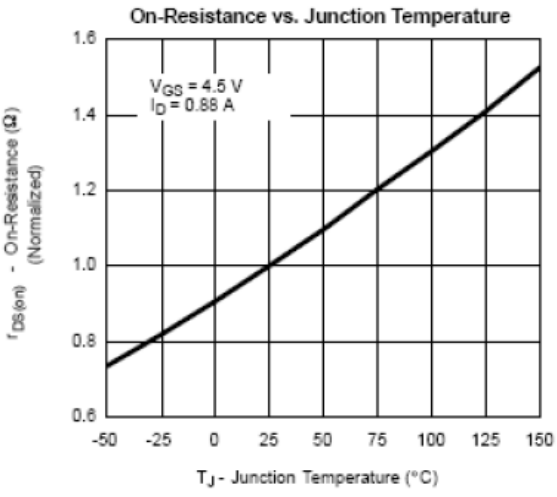




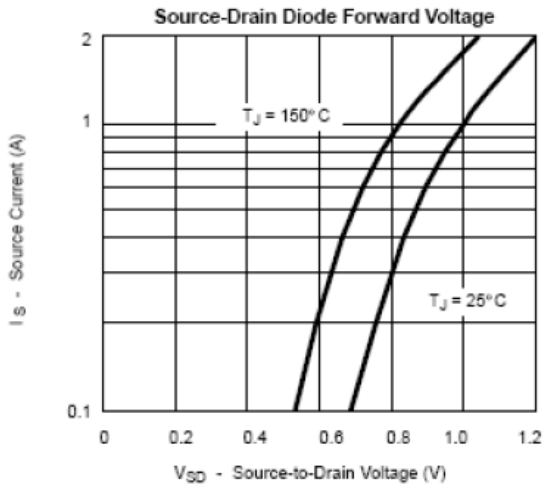


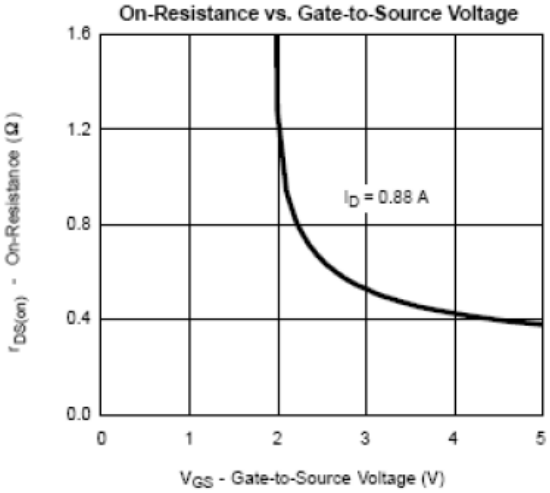


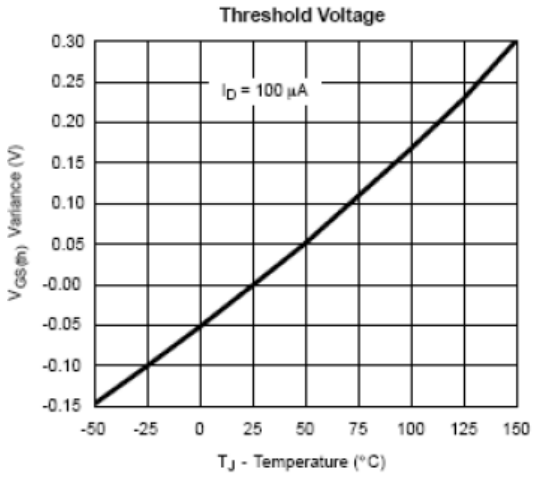


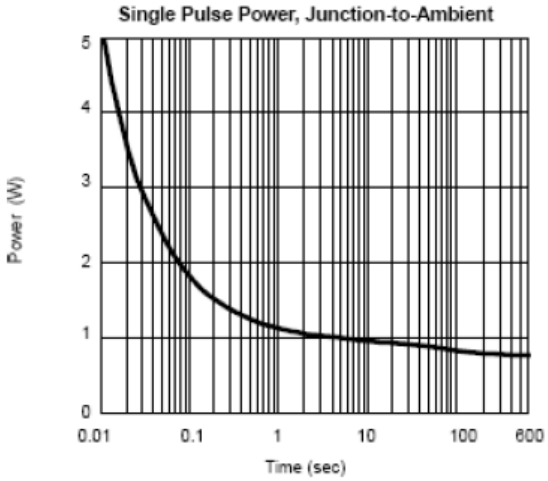


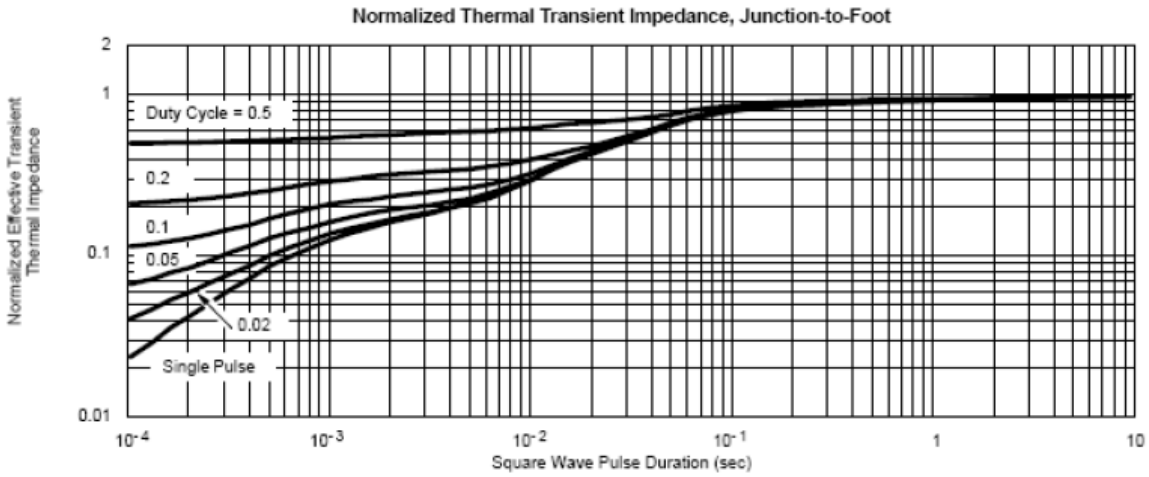
Typical Performance Characteristics





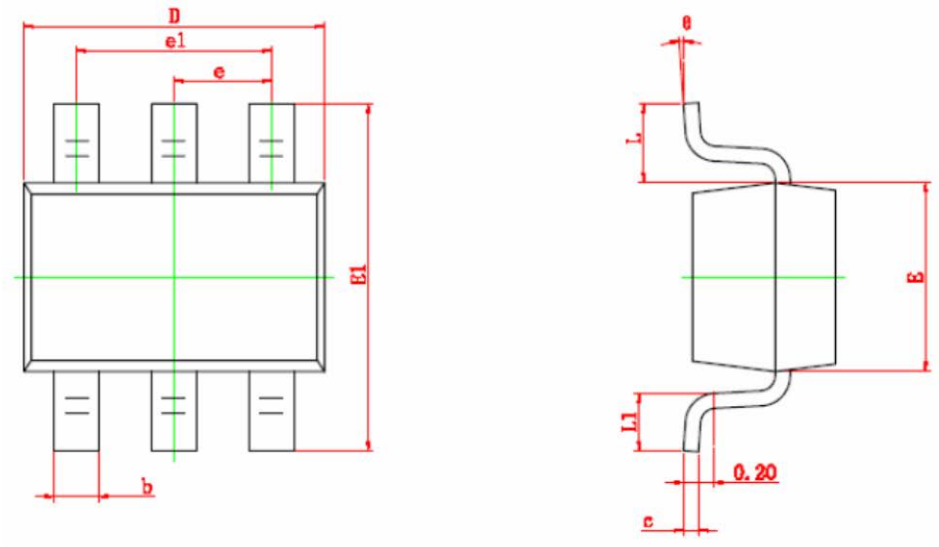






Packing Information

SOT363(SC-70-6)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min	Max	Min	Max
A	0.900	1.100	0.035	0.043
A1	0.000	0.100	0.000	0.004
A2	0.900	1.000	0.035	0.039
b	0.150	0.350	0.006	0.014
c	0.080	0.150	0.003	0.006
D	2.000	2.200	0.079	0.087
E	1.150	1.350	0.045	0.053
E1	2.150	2.450	0.085	0.096
e	0.650 TYP		0.026 TYP	
e1	1.200	1.400	0.047	0.055
L	0.525 REF		0.021 REF	
L1	0.260	0.460	0.010	0.018
θ	0°	8°	0°	8°

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.

ACE Technology Co., LTD.
http://www.ace-ele.com/