ACE4922BEM

Dual N-Channel Enhancement Mode Field Effect Transistor

Description

The ACE4922B is the Dual N-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.

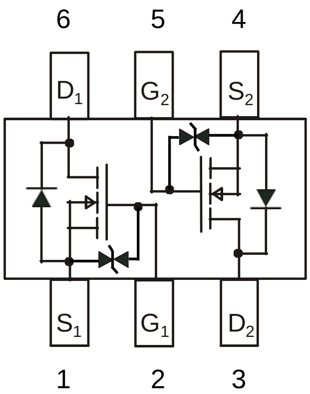
These devices are particularly suited for low voltage applications such as notebook computer power management and other battery powered circuits where high-side switching, low in-line power loss, and resistance to transients are needed.

APPLICATIONS

- Low On-Resistance
- Fast Switching Speed
- Low-voltage drive
- Easily designed drive circuits
- Pb-Free Package is available. The suffix G means Pb-free package
- ESD Protected：2000V

Packaging Type

SOT-363



Ordering information

ACE4922BEM+ H

- H: Halogen - free
- +: Pb - free
- EM : SOT-363

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Absolute Maximum Ratings

Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current	Continuous	I_D	115	mA
	Pulsed	I_{DP}*1	800	
Reverse Drain Current	Continuous	I_{DR}	115	mA
	Pulsed	I_{DR}*1	800	
Total Power Dissipation		P_d*2	225	mW
Channel Temperature		Tch	150	°C
Storage Temperature Range		Tstg	-55 to150	°C

Note:

1. Pw≦10μs, Duty cycle≦1 %。
2. When mounted on a 1*0.75*0.062 inch glass epoxy board。

Electrical Characteristics T_A=25 °C unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
OFF CHARACTERISTICS(Note 2)						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	VGS=0V, ID=10μA	60			V
Zero Gate Voltage Drain Current	I_{DSS}	VDS=60V, VGS=0V			1.0	uA
Gate-source Leakage	I_{GSS}	VGS=±20V, VDS=0V			±10	nA
ON CHARACTERISTICS(Note 2)						
Gate Threshold Voltage	$V_{GS(th)}$	VDS=VGS , ID= 250uA	1.0	1.85	2.5	V
Static Drain-Source On-Resistance	$R_{DS(ON)}$	VGS=10V, ID=0.5A			7.5	Ω
		VGS=5V, ID=0.05A			7.5	
Forward transfer admittance	g_{FS}	VDS=10V, ID=0.2A	80			S
DYNAMIC CHARACTERISTICS						
Input Capacitance	C_{iss}	VDS=25V VGS=0V f=1.0MHz		25	50	pF
Output Capacitance	C_{oss}			10	25	
Reverse Transfer Capacitance	C_{rss}			3.0	5.0	
SWITCHING CHARACTERISTICS						
Turn-On Delay Time	$T_{d(on)}$	ID=0.2A,VDD=30V, VGS=10V,RL=150Ω,RG=10Ω		12	20	ns
Turn-Off Delay Time	$T_{d(off)}$			20	30	

Note: Pw ≦ 300 μs, Duty cycle ≦ 1%

Typical Performance Characteristics

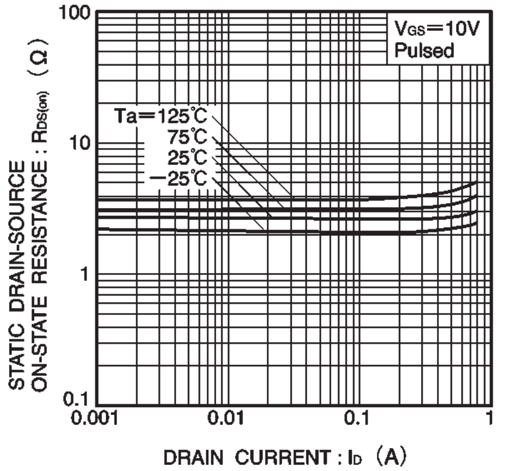

Fig.1 Static drain-source on-state resistance VS drain current (Ⅰ)

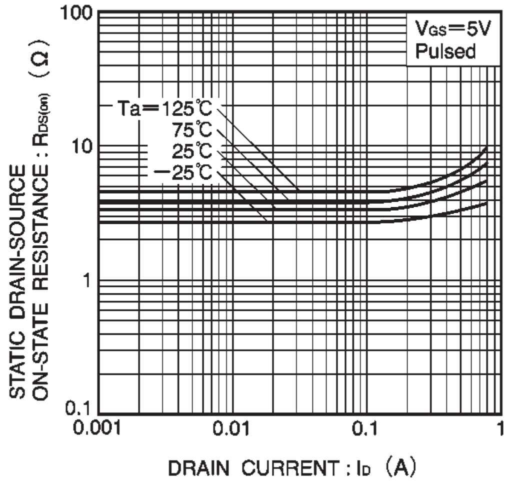

Fig.2 Static drain-source on-state resistance VS drain current (Ⅱ)

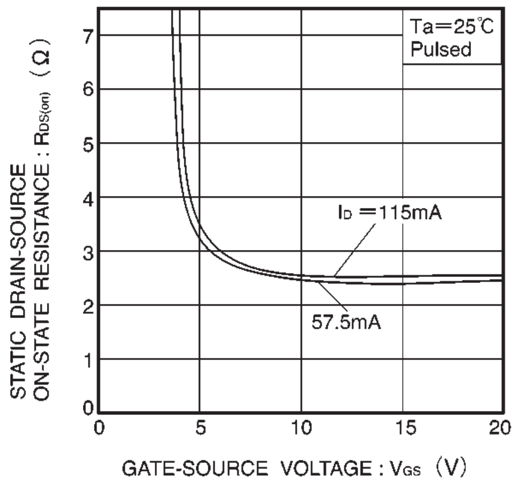

Fig.3 Static drain-source on-state resistance VS gate-source voltage

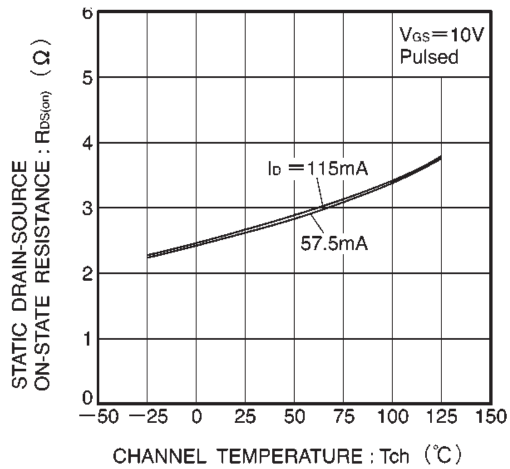

Fig.4 Static drain-source on-state resistance VS channel temperature

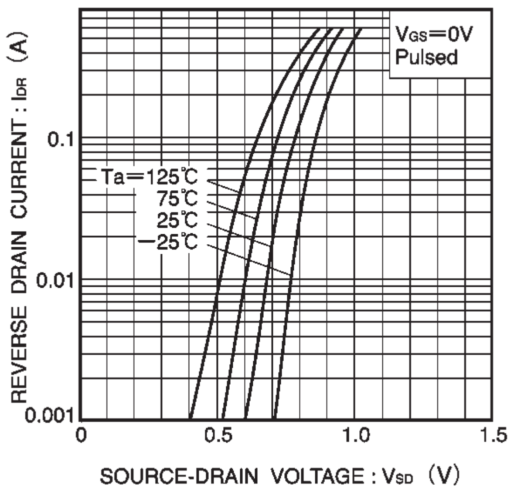

Fig.5 Reverse drain current VS source-drain voltage (Ⅰ)

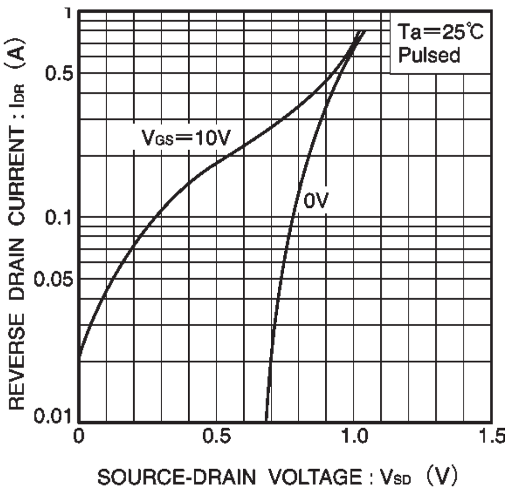

Fig.6 Reverse drain current VS source-drain voltage (Ⅱ)

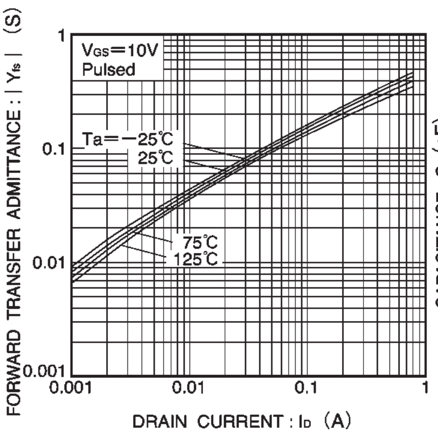

Fig.7 Forward transfer admittance VS drain current

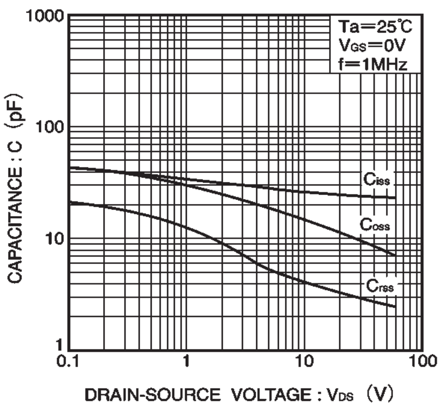

Fig.8 Typical capacitance VS drain-source voltage

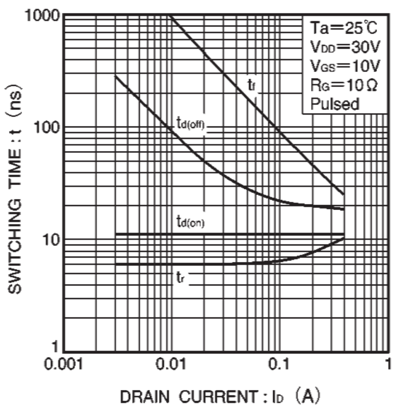

Fig.9 Switching characteristics

Electrical characteristic curves

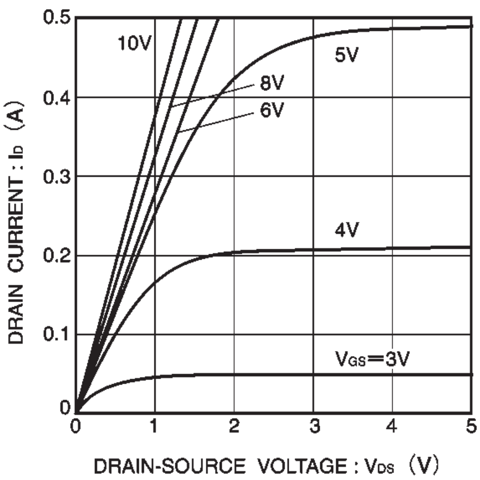

Fig.10 Typical output characteristics

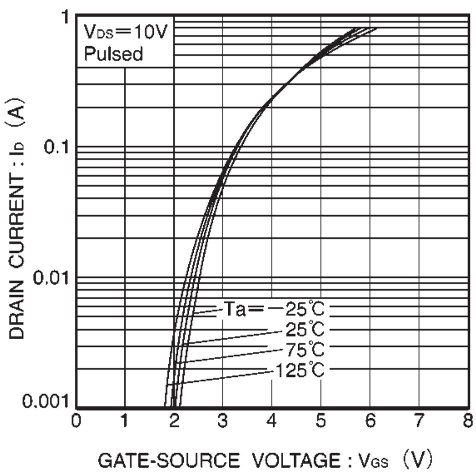

Fig.11 Typical transfer characteristics

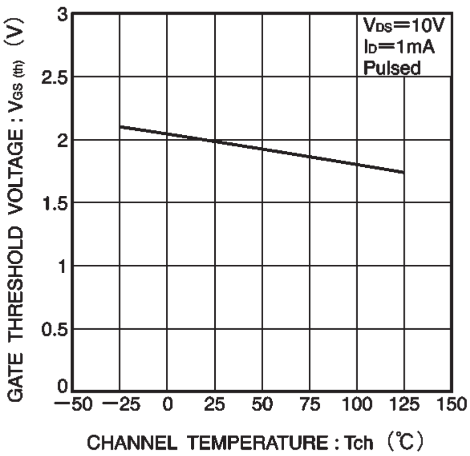

Fig.12 Get threshold voltage VS channel temperature

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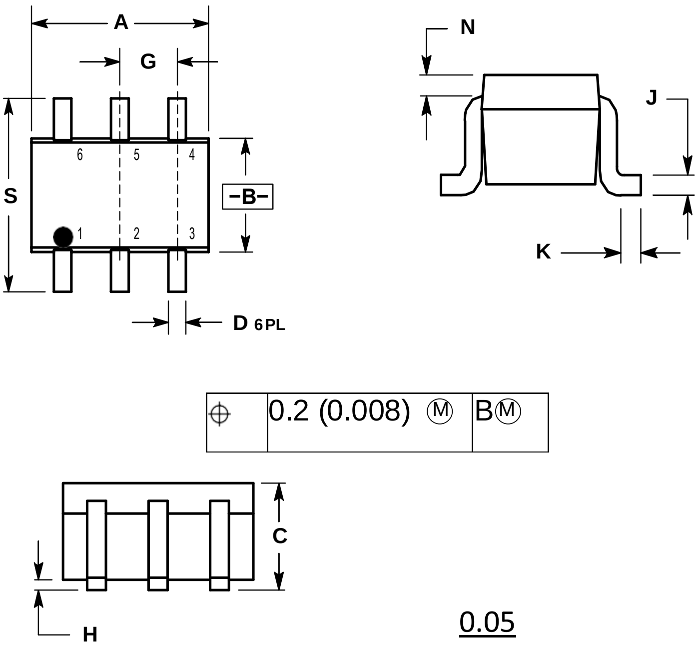
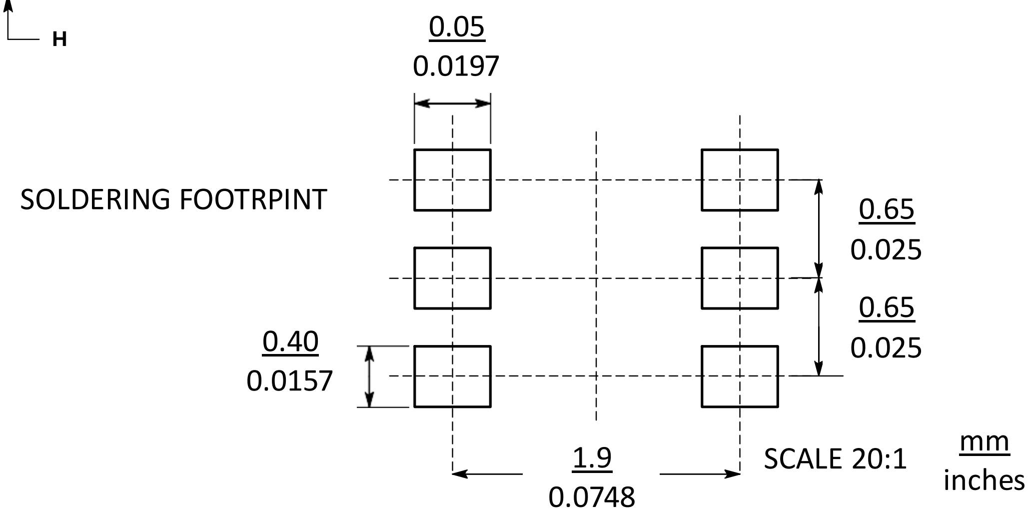
Packing Information

SOT-363



DIM	INCHES		MILLIMETERS	
	MIN	MAX	MIN	MAX
A	0.071	0.087	1.80	2.20
B	0.045	0.053	1.15	1.35
C	0.031	0.043	0.80	1.10
D	0.004	0.012	0.10	0.30
G	0.026 BSC		0.65 BSC	
H		0.004		0.10
J	0.004	0.010	0.10	0.25
K	0.004	0.012	0.10	0.30
N	0.008 REF		0.20 REF	
S	0.079	0.087	2.00	2.20



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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