ACE17408B

N-Channel Enhancement Mode Power MOSFET

Description

ACE17408B uses advanced trench technology and desgin to provide excellent $R_{DS(ON)}$ with low gate charge.It can be used in a wide variety of applications.

Features

- V_{DS}=30V, I_D=80A
- $R_{DS(ON)1}$@V_{GS} = 10V, I_{DS} = 20A, TYP 4.8mΩ
- $R_{DS(ON)2}$@V_{GS} = 4.5V, I_{DS} = 10A, TYP 6.5mΩ

Absolute Maximum Ratings

Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	30	V
Gate-Source Voltage		V_{GSS}	±20	V
Drain Current (Continuous)*AC	T_A=25℃	I_D	80	A
	T_A=100℃		51	
Drain Current (Pulsed)*B		I_{DM}	320	A
Power Dissipation	T_A=25℃	P_D	54	W
Operating temperature / storage temperature		T_J/T_{STG}	-55~175	℃

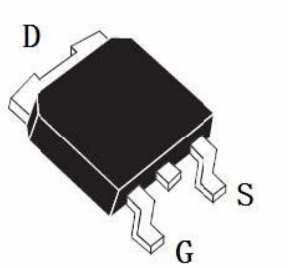
A: The value of $R_{\theta JA}$ is measured with the device mounted on 1in^2 FR-4 board with 2oz. Copper, in a still air environment with T_A=25°C. The value in any given application depends on the user's specific board design.

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.

Packaging Type

TO-252



Ordering information

ACE17408B XX + H

- Halogen - free
- Pb - free
- YM: TO-252

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			V
Zero Gate Voltage Drain Current	I_{DSS1}	V_{DS} = 30V, V_{GS} = 0V			1	μA
Gate Threshold Voltage	$V_{GS(TH)}$	V_{GS} = V_{DS} , I_{DS}= 250μA	1	1.6	2.5	V
Gate Leakage Current	I_{GSS}	V_{GS}= ±20V , V_{DS}=0V			±100	nA
Drain-Source On-state Resistance	$R_{DS(on)}$	V_{GS} = 10V , I_D= 20A		4.8	6	mΩ
		V_{GS} = 4.5V , I_D= 10A		6.5	9	
Forward Trans Conductance	g_{FS}	V_{DS}= 10V , I_D= 10A		18		S
Diode Forward Voltage	V_{SD}	I_{SD}= 10A , V_{GS}= 0V			1.2	V
Diode Forward Current	I_S				80	A
Switching						
Total Gate Charge	Q_g	V_{DS}= 15V, I_D= 20A, V_{GS}= 4.5V		11.1		nC
Gate-Source Charge	Q_{gs}			1.85		nC
Gate-Drain Charge	Q_{gd}			6.8		nC
Turn-on Delay Time	$t_{d(on)}$	V_{DD}= 15V,I_D= 15A, V_{GS}= 10V,R_{GEN}= 3.3Ω		7.5		ns
Turn-on Rise Time	t_r			14.5		ns
Turn-off Delay Time	$t_{d(off)}$			35.2		ns
Turn-off Fall Time	t_f			9.6		ns
Dynamic						
Input Capacitance	C_{iss}	V_{DS}=0V,V_{GS}= 0V, f= 1.0MHz		1160		pF
Output Capacitance	C_{oss}			200		pF
Reverse Transfer Capacitance	C_{rss}			180		pF

Typical Performance Characteristics

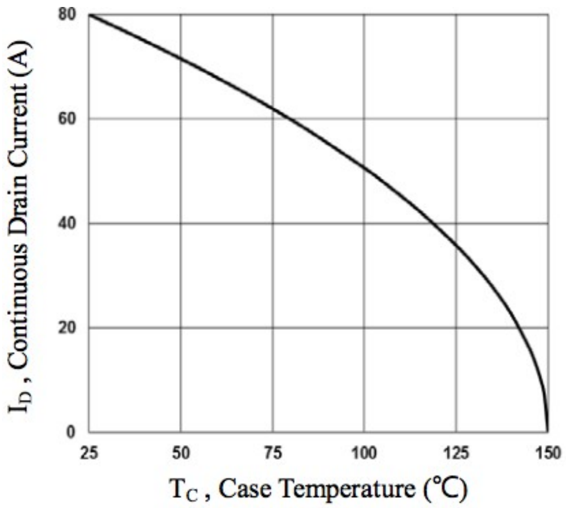


Fig.1 Continuous Drain Current vs. T_C

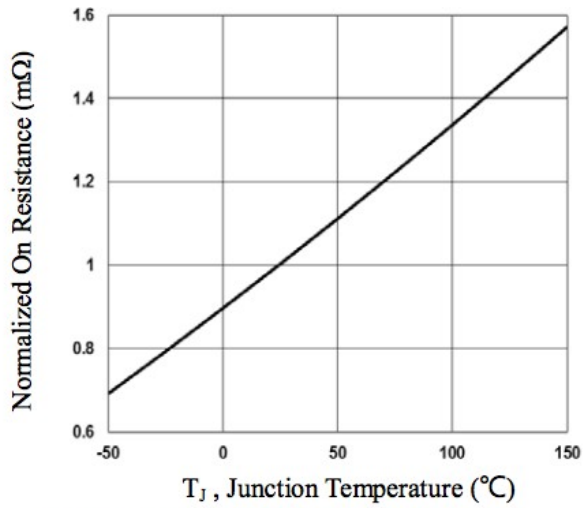


Fig.2 Normalized RDSON vs. T_J

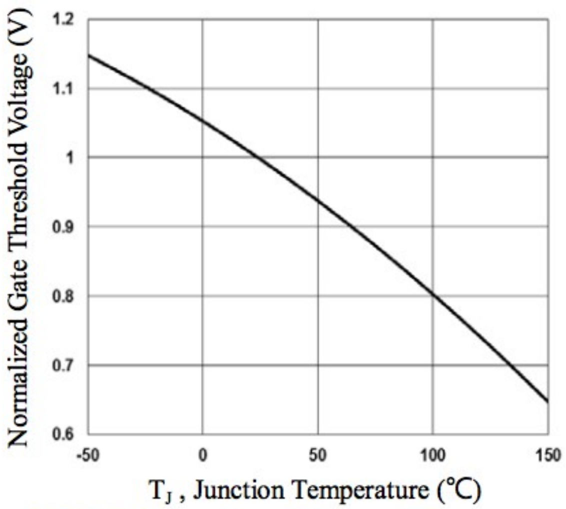


Fig.3 Normalized V_{th} vs. T_J

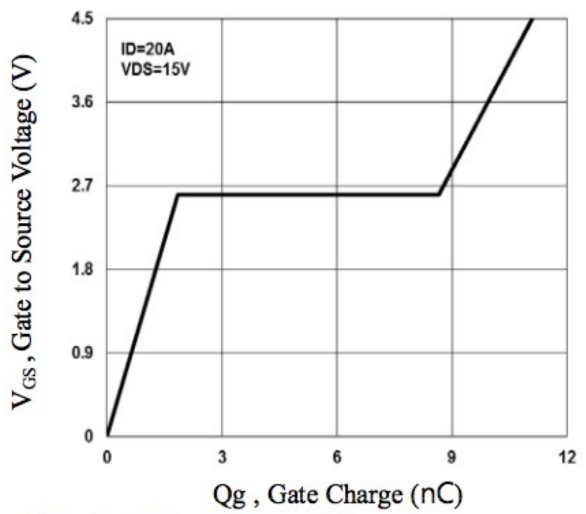


Fig.4 Gate Charge Waveform

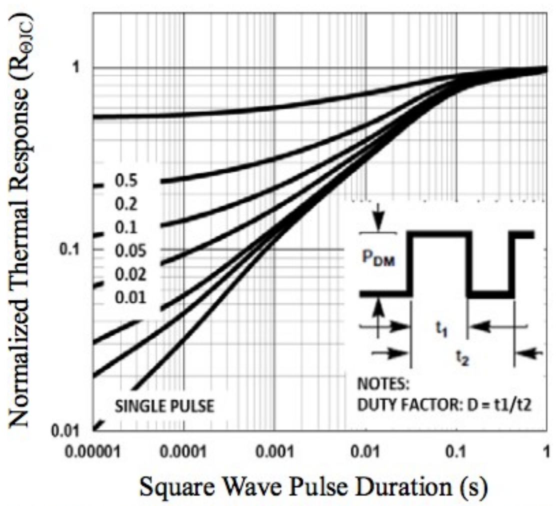


Fig.5 Normalized Transient Impedance

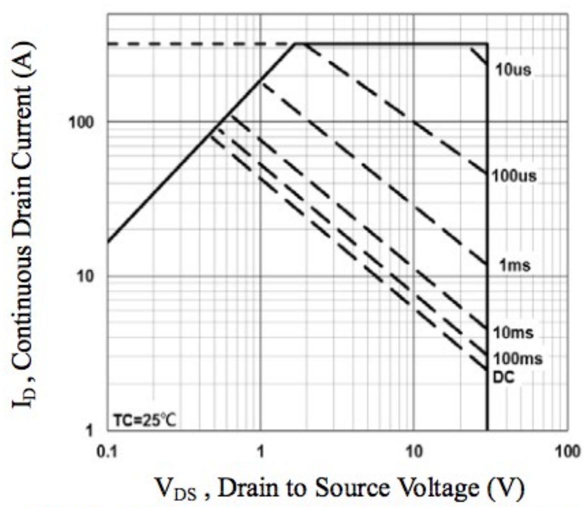


Fig.6 Maximum Safe Operation Area

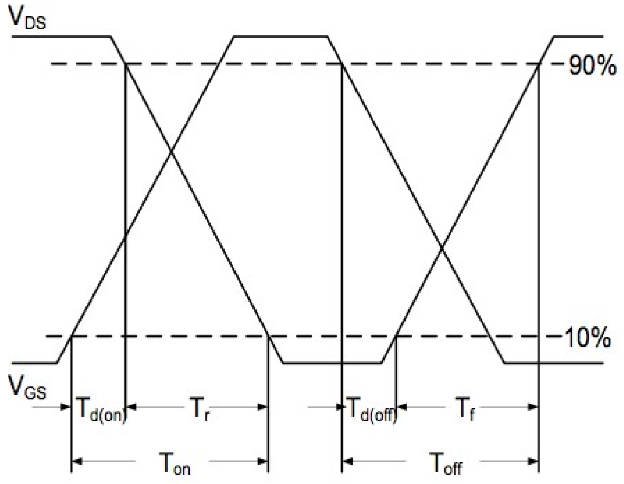


Fig.7 Switching Time Waveform

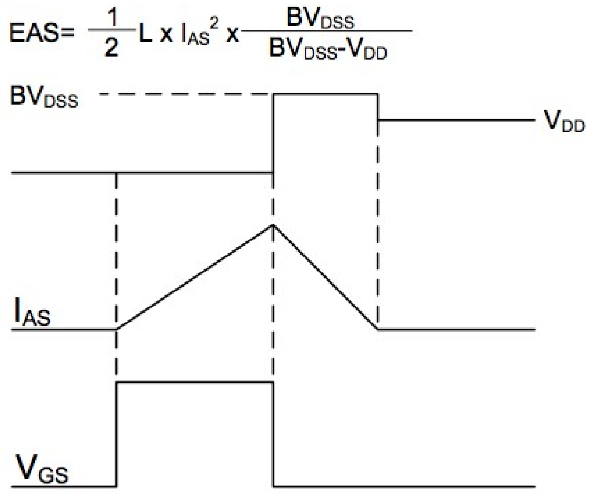
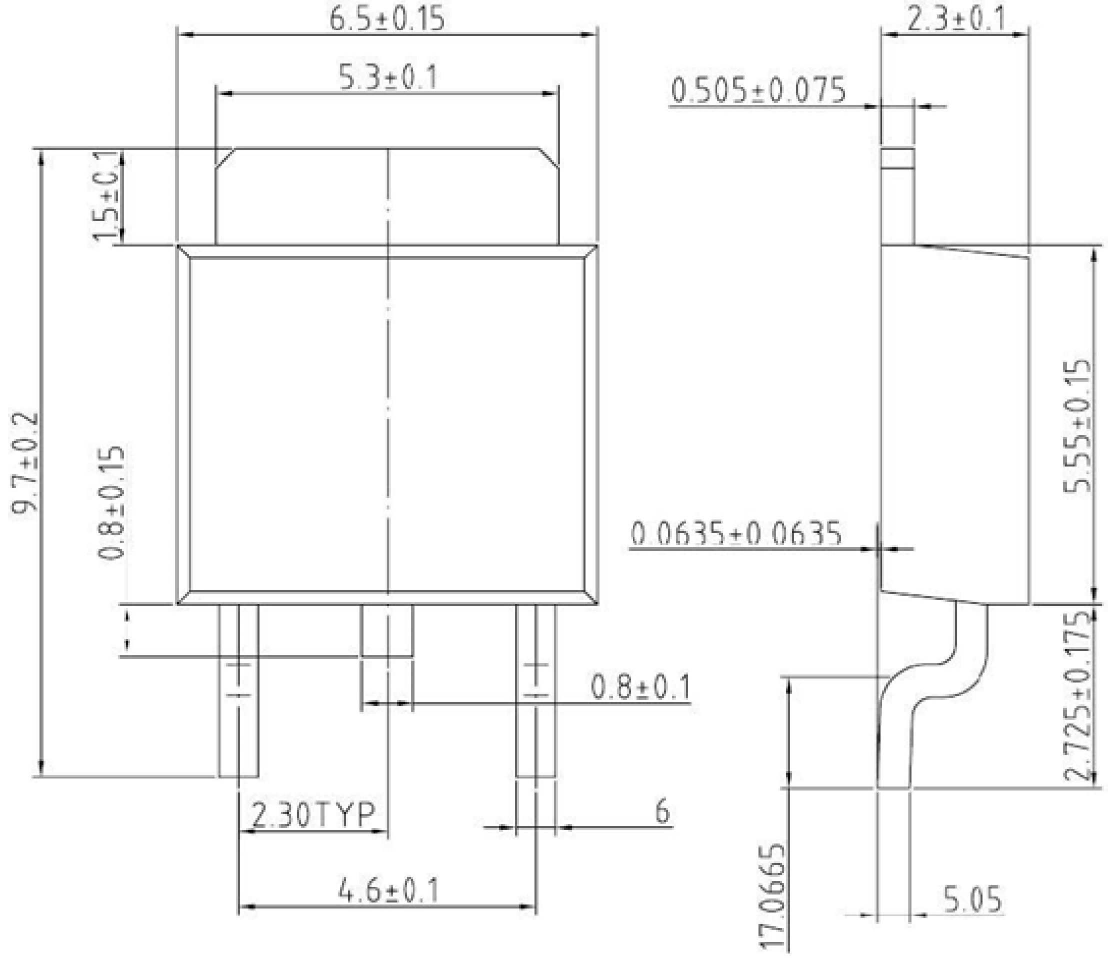


Fig.8 EAS Waveform

Packing Information

TO-252



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/