ACE1526B

P-Channel Enhancement Mode Field Effect Transistor

Description

ACE1526B uses advanced trench technology to provide excellent $R_{DS(ON)}$. This device particularly suits for low voltage application such as power management of desktop computer or notebook computer power management, DC/DC converter.

Features

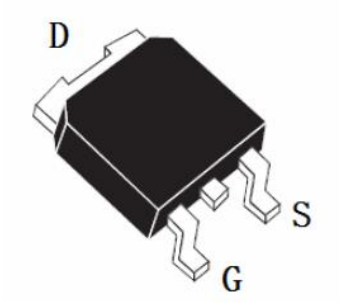
- VDS (V) = -30V
- ID = -6A (VGS = -10V) RDS(ON) < 75mΩ (VGS = -10V)
- RDS(ON) < 80mΩ (VGS = -4.5V)

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°C	I_D	-6	A
	T_A=70°C		-4.8	
Drain Current (Pulse) *B		IDM	-30	A
Power Dissipation	T_A=25°C	P_D	50	W
	T_A=70°C		25	
Operating Temperature/ Storage Temperature		T_J/T_{STG}	-55~150	℃

Packaging Type

TO-252



Ordering information

ACE1526B XX + H

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

Electrical Characteristics T_A=25℃, unless otherwise specified.

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Static						
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V, I_D=250uA	-30			V
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=-30V, V_{GS}=0V			-1	uA
Gate Threshold Voltage	$V_{GS(th)}$	V_{GS}=V_{GS}, I_{DS}=-250uA	-1	-1.4	-6	V
Gate Leakage Current	I_{GSS}	V_{GS}=±20V, V_{DS}=0V			100	nA
Drain-Source On-Resistance	$R_{DS(ON)}$	V_{GS}=-10V, I_D=-6A		55	75	mΩ
		V_{GS}=-4.5V, I_D=-3A		68	80	
Forward Transconductance	g_{FS}	V_{DS}=-10V,I_D=-5.3A		10		S
Diode Forward Voltage	V_{SD}	I_S=-1.7A, V_{GS}=0V		-0.82	-1.2	V
Switching						
Total Gate Charge	Qg	V_{GS}= -10V,V_{DS}=-15V,I_D= -5.3A		28	36.4	nC
Gate-Source Charge	Qgs			3	3.9	
Gate-Drain Charge	Qgd			7	9.1	
Turn-on Delay Time	$t_{d(on)}$	V_{GS}=-10V,V_{DS}=-15V, R_L=15Ω, R_{GEN}=6Ω		9	18	ns
Turn-on Rise Time	t_r			15	30	
Turn-off Delay Time	$t_{d(off)}$			75	150	
Turn-off Fall Time	t_f			40	80	
Dynamic						
Input Capacitance	C_{iss}	V_{GS}=0V, V_{DS}=-15V, f=1MHz		745		pF
Output Capacitance	C_{oss}			440		
Reverse Transfer Capacitance	C_{rss}			120		

Note:

1. The value of $R_{\theta JA}$ is measured with the device mounted on 1in² 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.
2. Repetitive rating, pulse width limited by junction temperature.
3. The current rating is based on the t≤ 10s junction to ambient thermal resistance rating.

Typical Performance Characteristics (N-Channel)

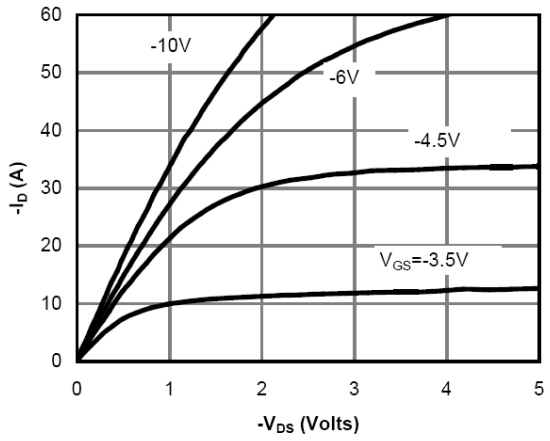


Figure 1: On-Region Characteristics

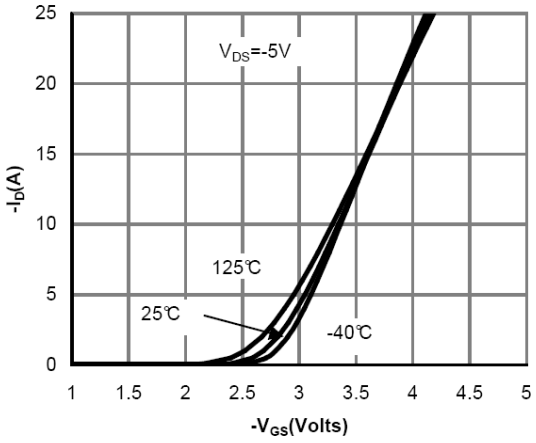


Figure 2: Transfer Characteristics

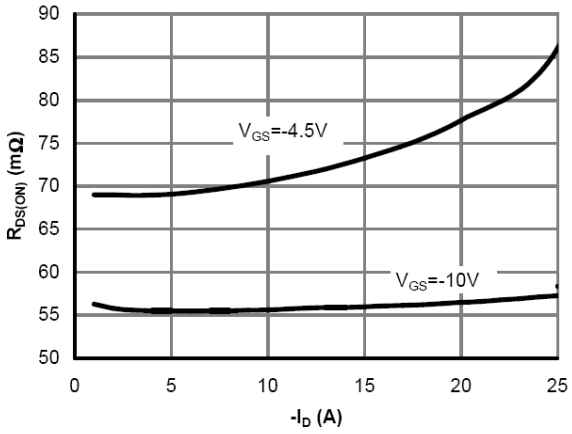


Figure 3: On-Resistance vs. Drain Current and Gate Voltage

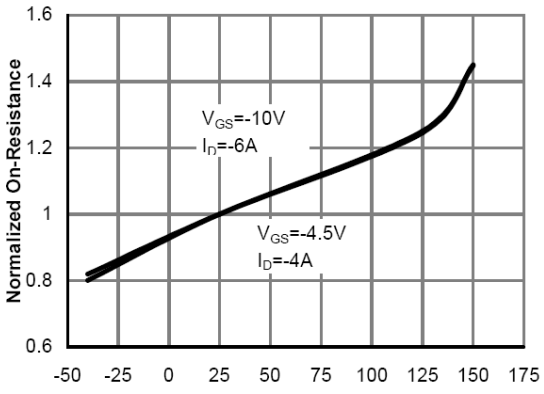


Figure 4: On-Resistance vs. Junction Temperature

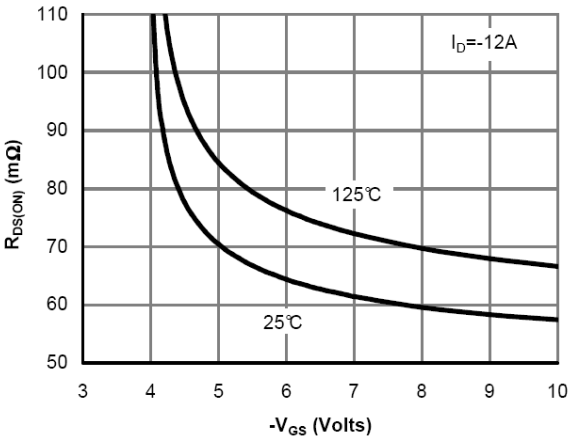


Figure 5: On-Resistance vs. Gate-Source Voltage

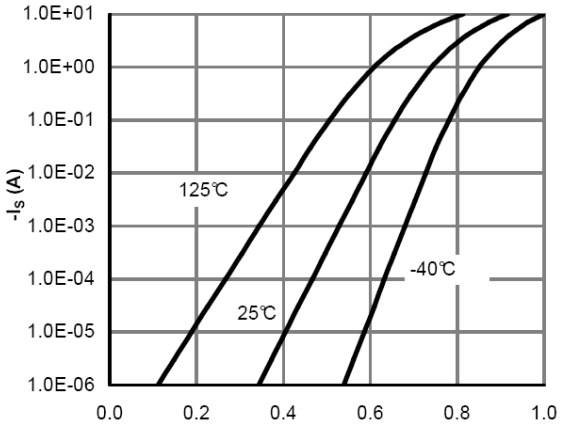


Figure 6: Body-Diode Characteristics

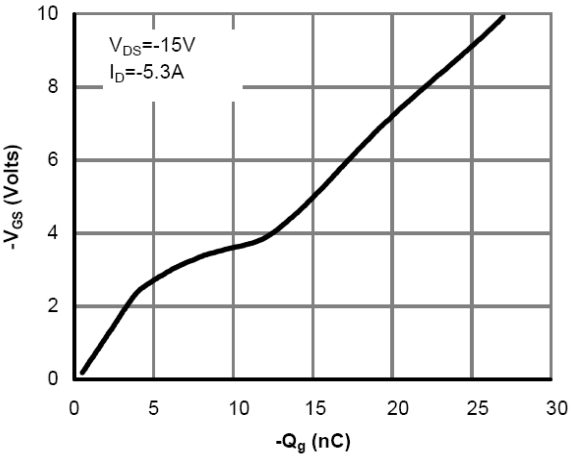


Figure 7: Gate-Charge Characteristics

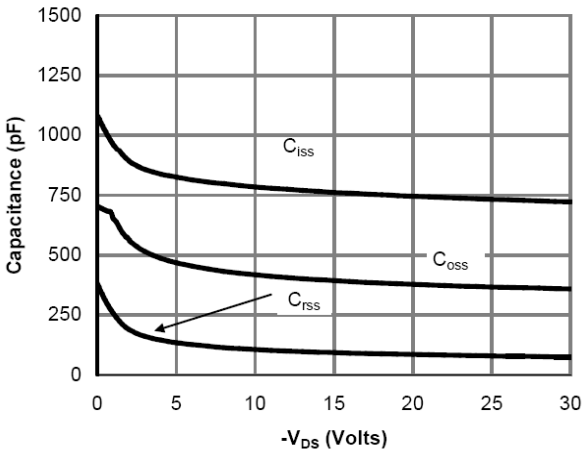


Figure 8: Capacitance Characteristics

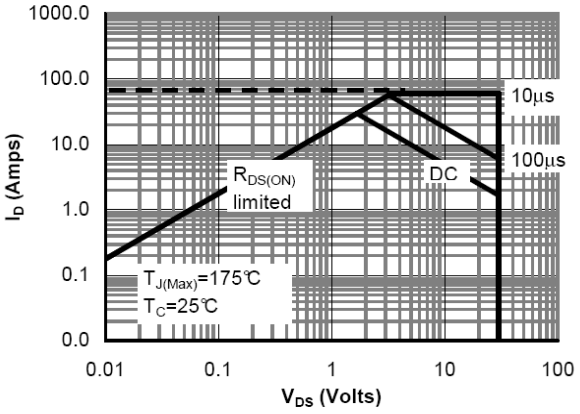


Figure 9: Maximum Forward Biased Safe Operating Area

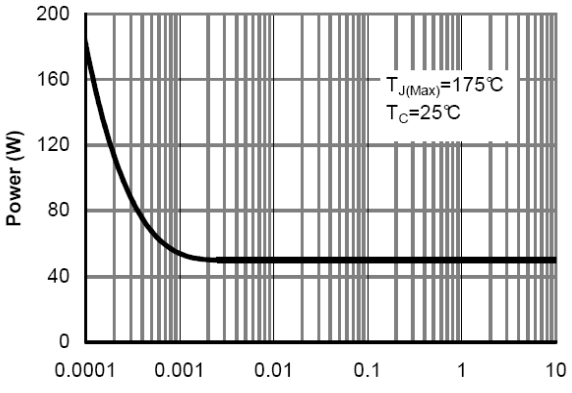


Figure 10: Single Pulse Power Rating Junction-to-Case

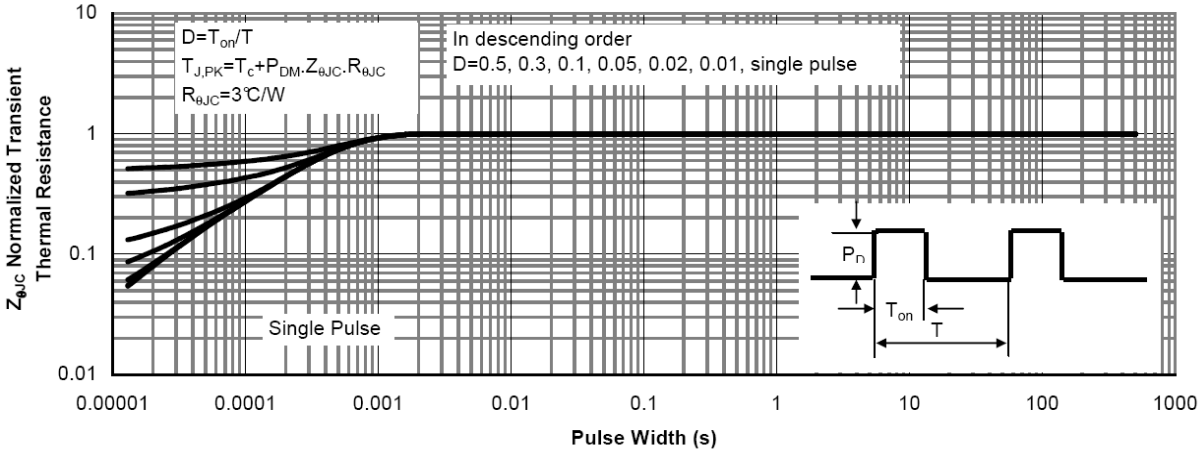
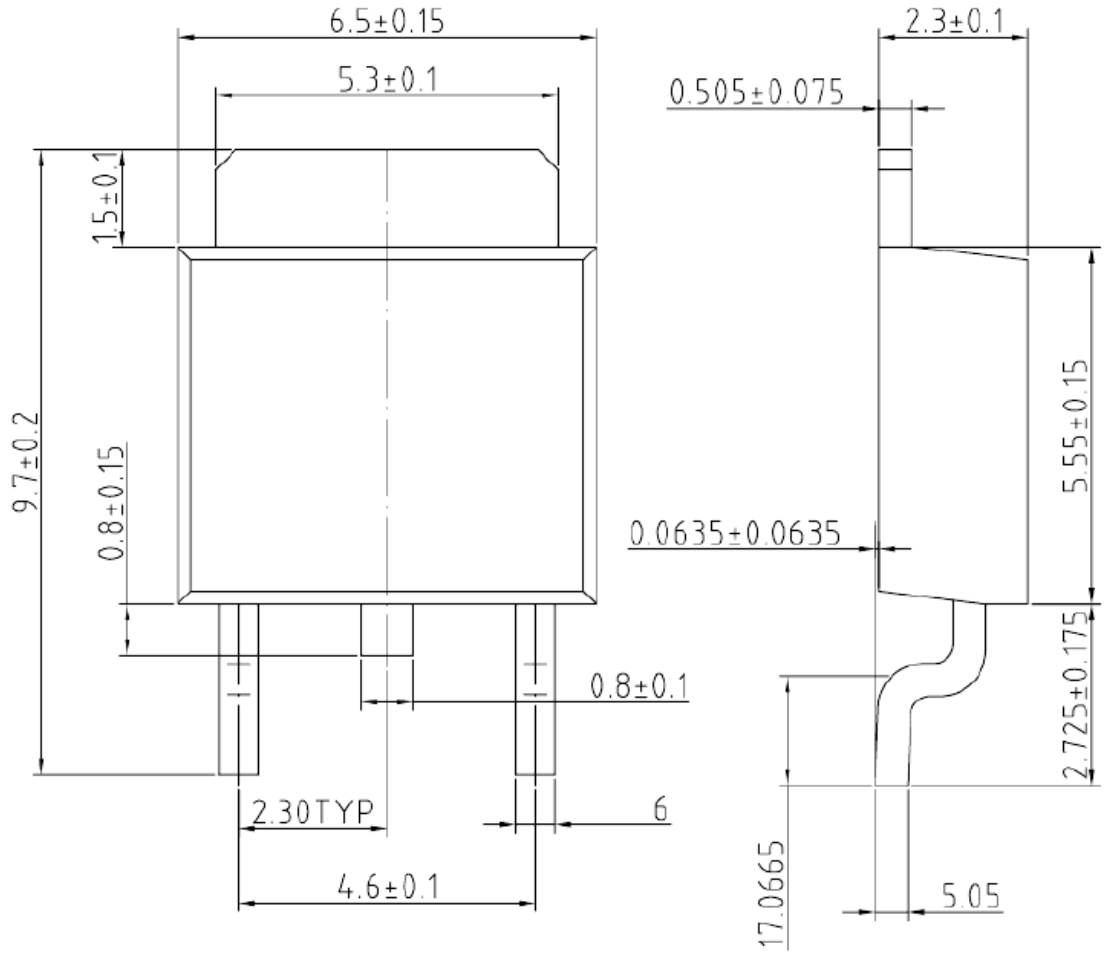


Figure 11: Normalized Maximum Transient Thermal Impedance

Packing Information

TO-252



Units: 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.

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