



ACE2607B

P-Channel Enhancement Mode Field Effect Transistor

Description

ACE2607B is produced with high cell density, DMOS trench technology, which is especially used to minimize on-state resistance. This device particularly suits 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.

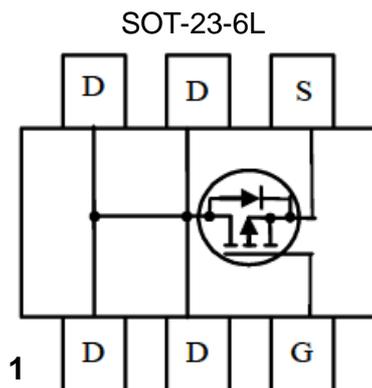
Features

- $V_{DS}(V)=-30V$, $I_D=-3.5A$
- $R_{DS(ON)}=52m\Omega@V_{GS}=-10V$
- $R_{DS(ON)}=68m\Omega@V_{GS}=-4.5V$
- 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 $T_A=25^\circ C$	I_D	-3.5	A
	Pulse (Note 2)		-20	
Power Dissipation ⁽¹⁾ (Note 1)		P_D	650	mW
Operating and Storage Temperature Range		T_J, T_{STG}	-55 to 150	$^\circ C$

Packaging Type



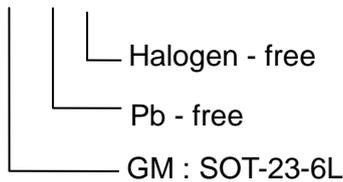


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Ordering information

ACE2607B XX + H



Electrical Characteristics

T_A=25 °C unless otherwise noted

Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
On/Off characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =250uA	-30	-34		V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =-24V, V _{GS} =0V		-3	-200	nA
Gate Leakage Current	I _{GSS}	V _{GS} =±20V, V _{DS} =0V		±1.5	±50	nA
On characteristics ^b						
Static Drain-Source On-Resistance	R _{DS(ON)}	V _{GS} =-10V, I _D =-5A		52	65	mΩ
		V _{GS} =-4.5V, I _D =-4A		68	85	
Gate Threshold Voltage	V _{GS(th)}	V _{DS} =V _{GS} , I _D =-250uA	-1	-1.3	-3	V
Forward Transconductance	g _{FS}	V _{DS} =-5V, I _D =-6A		12		S
Switching characteristics ^b						
Turn-On Delay Time	T _{d(on)}	V _{DD} =-15V, R _L =2.5Ω, V _{GS} =-10V, R _{GEN} =3Ω		8.6		ns
Turn-Off Delay Time	T _{d(off)}			28.2		
Dynamic characteristics						
Input Capacitance	C _{iss}	V _{DS} =-15V, V _{GS} =0V f=1.0MHz		550		pF
Output Capacitance	C _{oss}			60		
Reverse Transfer Capacitance	C _{rss}			50		
Drain-source diode characteristics and maximum ratings ^b						
Drain-Source Diode Forward Voltage	V _{SD}	V _{GS} =0V, I _S =-1A ⁽²⁾		-0.81		V

Note: 1. The value of PD 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

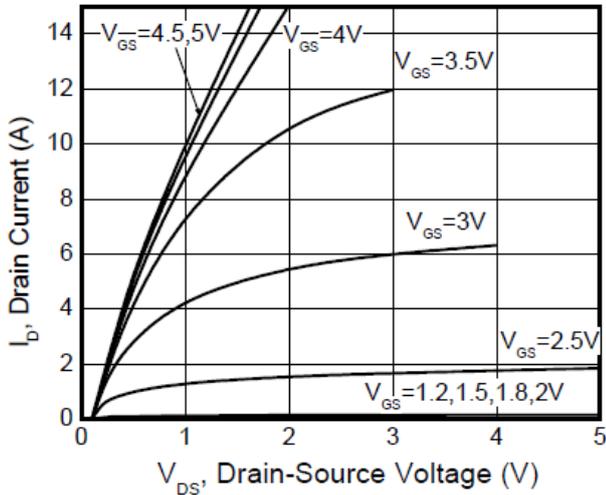


Figure 1. Output Characteristics

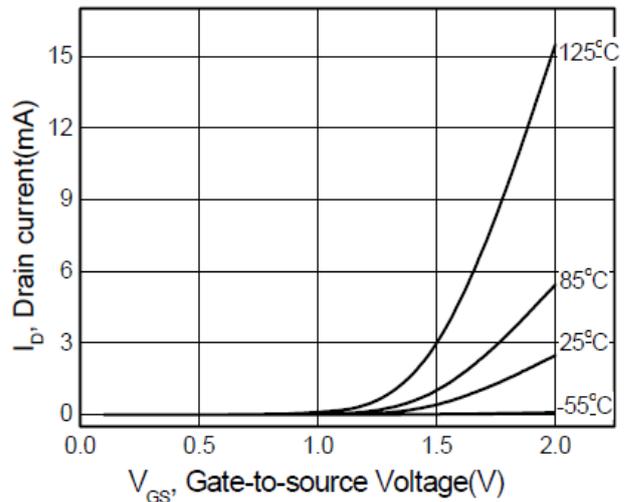


Figure 2. Transfer Characteristics

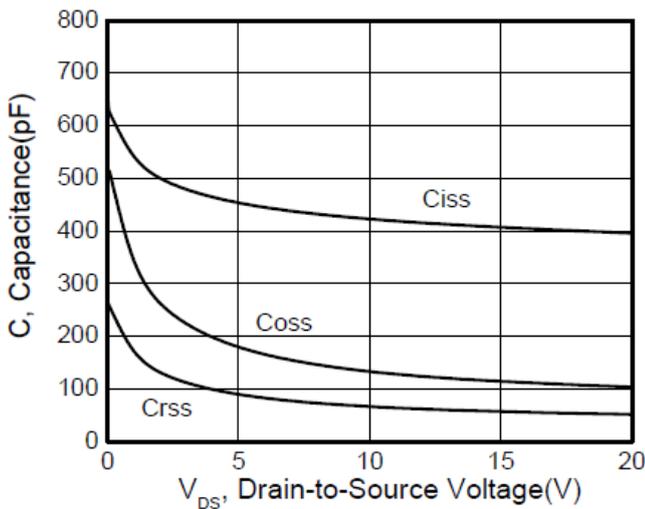


Figure 3. Capacitance

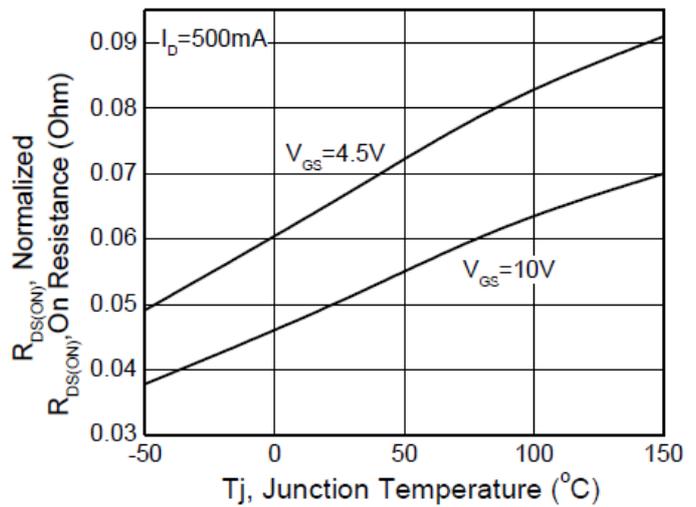


Figure 4. On Resistance Vs. Temperature

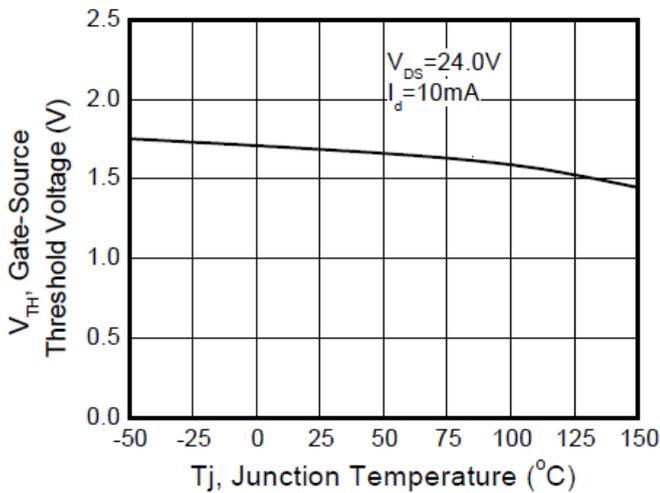


Figure 5. Gate Threshold Vs. Temperature

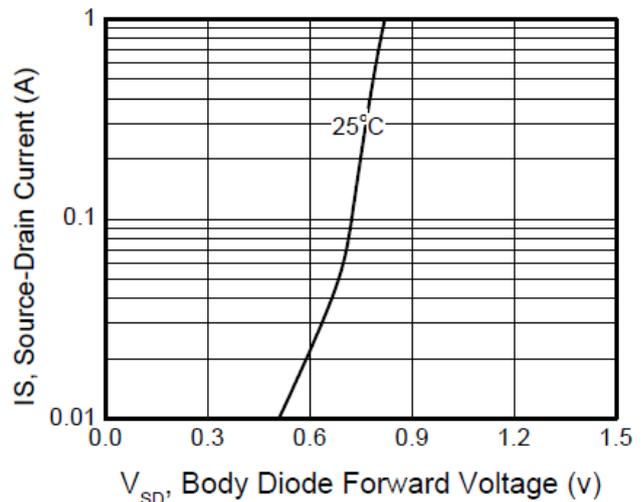


Figure 6. Body Diode Forward Voltage

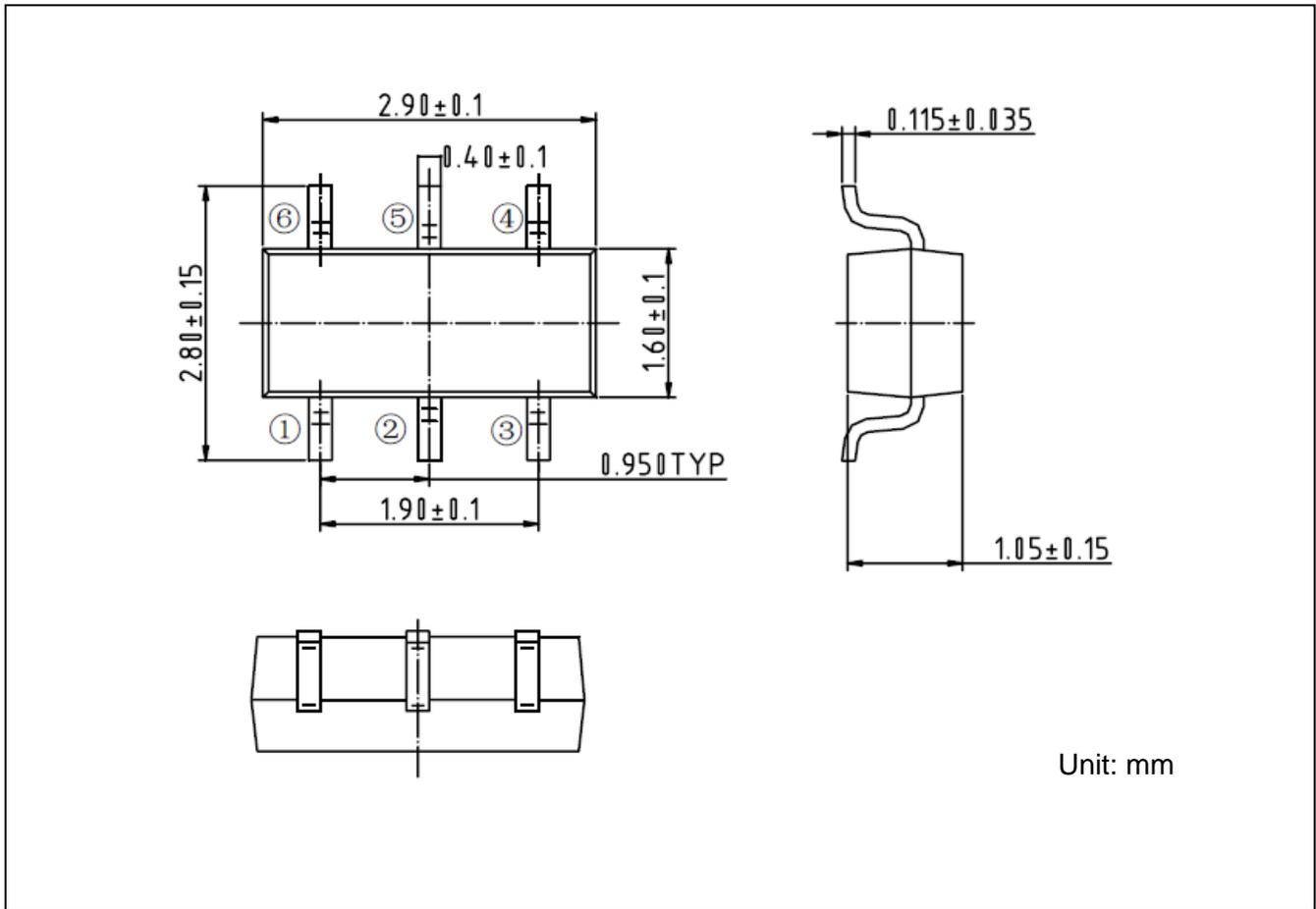


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Packing Information

SOT-23-6L



Unit: mm



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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 whose 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.

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