



ACE2N7002

N-Channel Enhancement Mode Field Effect Transistor

Features

- Low On-Resistance
- Fast Switching Speed
- Low-voltage drive
- Easily designed drive circuits
- We declare that the material of product is ROHS compliant.
- ESD Protected L2000V

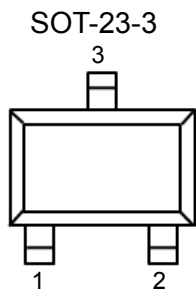
Absolute Maximum Ratings

Parameter		Symbol	Max	Unit
Drain-Source Voltage		V_{DSS}	60	V
Gate-Source Voltage		V_{GSS}	± 20	V
Drain Current(Continuous)	$T_A = 25^\circ\text{C}$	I_D	250	mA
Drain Current(Pulse)		I_{DM}^{*1}	1.6	A
Power Dissipation	$T_A = 25^\circ\text{C}$	P_D	1.4	mW
Operating Temperature/Storage Temperature		T_J, T_{STG}	-55 to 150	$^\circ\text{C}$

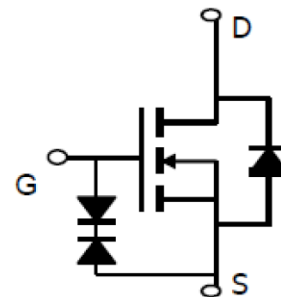
* $P_w \leq 10\mu\text{s}$, Duty cycle $\leq 1\%$

*When mounted on a 1*0.75*0.062 inch glass epoxy board%

Packaging Type

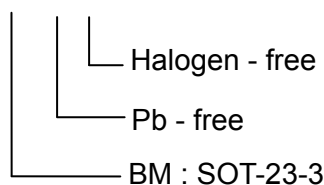


SOT-23-3	Description
1	Gate
2	Source
3	Drain



Ordering information

ACE2N7002 XX + H





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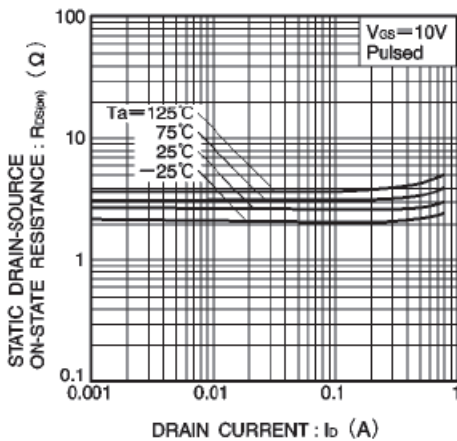
Electrical Characteristics

$T_A=25^\circ\text{C}$ unless otherwise noted

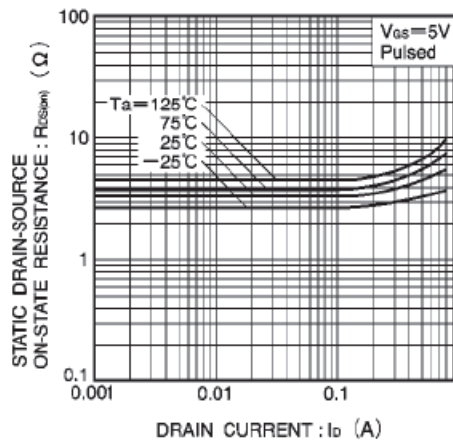
Parameter	Symbol	Conditions	Min.	Typ.	Max.	Unit
Off characteristics						
Drain-Source Breakdown Voltage	V _{(BR)DSS}	V _{GS} =0V, I _D =-10uA	60			V
Zero Gate Voltage Drain Current	I _{DSS}	V _{DS} =60 V, V _{GS} =0V			1	Ua
Gate Threshold Voltage	V _{GS(th)}	V _{GS} = V _{DS} , I _{DS} =250 uA	1.0	1.85	2.5	V
Gate Leakage Current	I _{GSS}	V _{GS} =+20V, V _{DS} =0V			10	uA
Drain-Source On-state Resistance	R _{DS(ON)}	V _{GS} =10V, I _D =0.5A			7.5	Ω
		V _{GS} =5V, I _D =0.05A			7.5	Ω
Forward Transconductance	g _{FS}	V _{DS} =10V, I _D =-0.5A		15		S
Switching characteristics ⁽³⁾						
Turn-On Delay Time	T _{d(on)}	I _D =0.19, V _{DS} =30V V _{GS} =10V,R _L =155Ω		12		ns
Turn-Off Delay Time	t _{d(off)}			20		
Dynamic characteristics ⁽³⁾						
Input Capacitance	C _{iss}	V _{GS} =0V, V _{DS} =25V f=1.0MHz		52		pF
Output Capacitance	C _{oss}			7.7		
Reverse Transfer Capacitance	C _{rss}			3.9		

Note: 1. Pulse test: $PW \leq 300\mu s$, duty cycle $\leq 1\%$

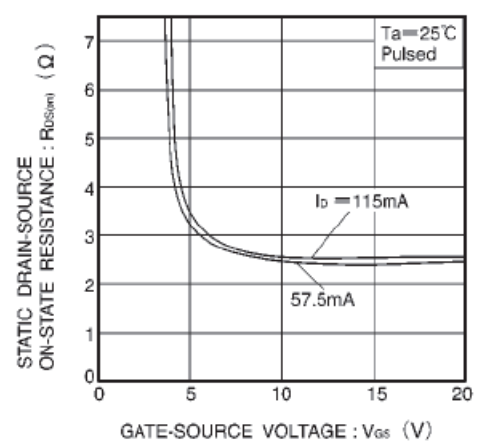
Typical Performance Characteristics



Static drain-source on-state resistance vs. drain current (I)



Static drain-source on-state resistance vs. drain current (II)



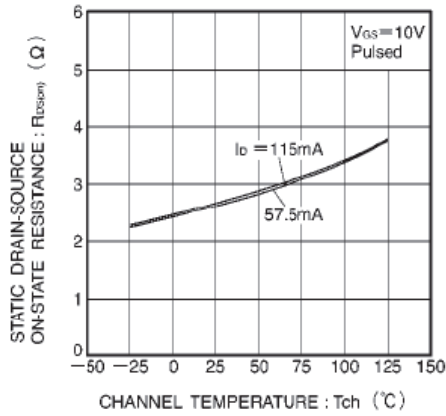
Static drain-source on-state resistance vs. gate-source voltage



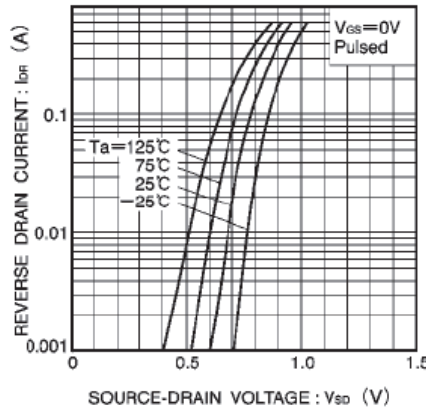
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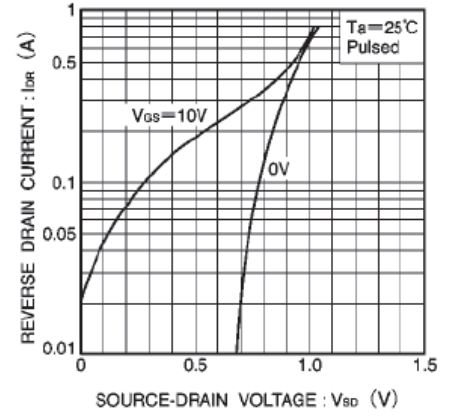
Typical Performance Characteristics



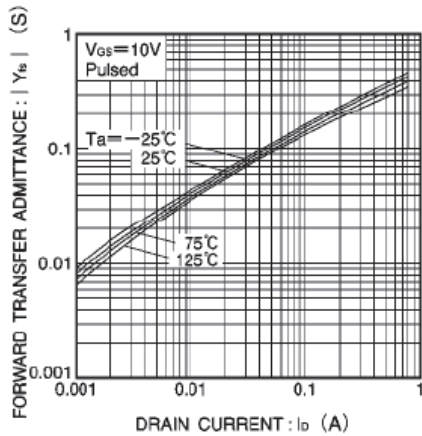
Static drain-source on-state resistance vs. channel temperature



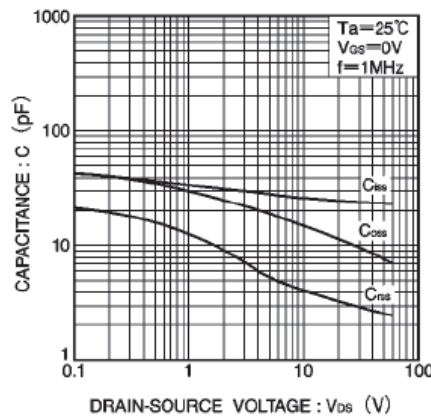
Reverse drain current vs. source-drain voltage (I)



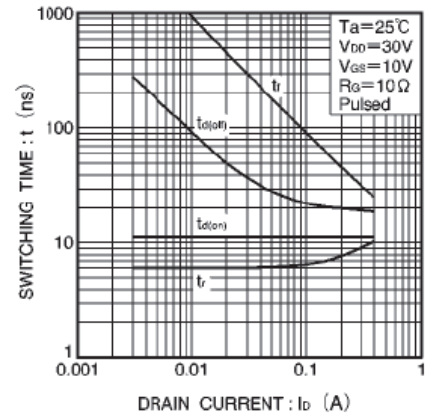
Reverse drain current vs. source-drain voltage (II)



Forward transfer admittance vs. drain current



Typical capacitance vs. drain-source voltage



Switching characteristics
(See Figures 13 and 14 for the measurement circuit and resultant waveforms)

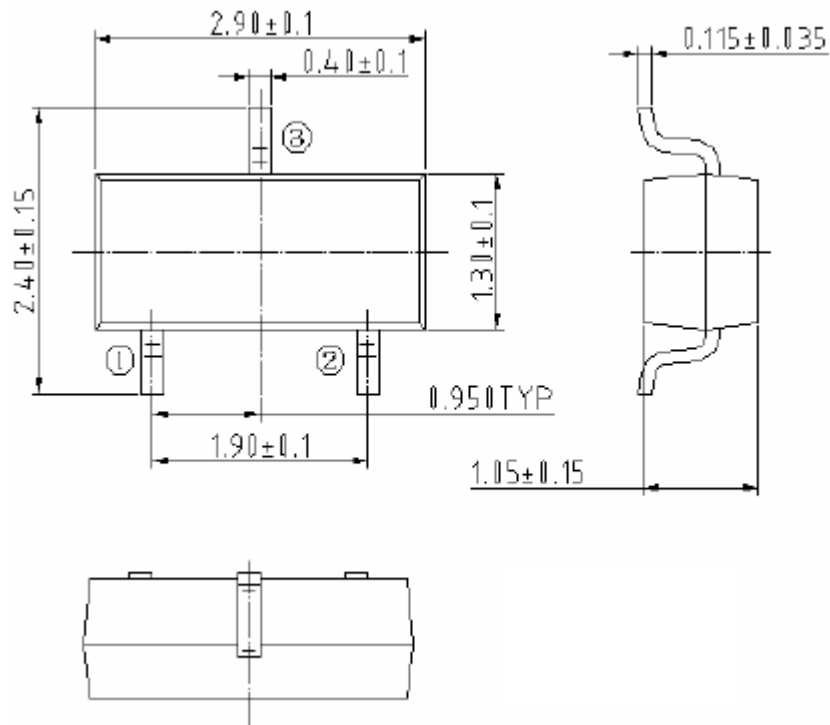


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Packing Information

SOT-23-3



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.

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