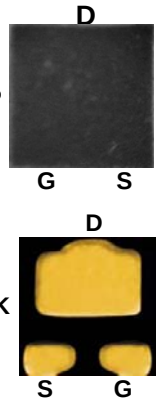
JIANGSU CHANGJIANG ELECTRONICS TECHNOLOGY CO., LTD

WBFBP-03B Plastic-Encapsulate MOSFET

2N7002M MOSFET(N-Channel)

WBFBP-03B
(1.2×1.2×0.5)
unit: mm



1. GATE
2. SOURCE
3. DRAIN

DESCRIPTION

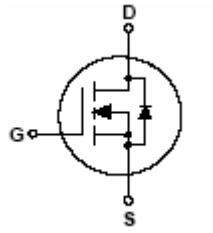
High cell density, DMOS technology. These products have been designed to minimize on-state resistance while provide rugged, reliable, and fast switching performance. They can be used in most applications requiring up to 400mA DC and can deliver pulsed currents up to 2A. These products are particularly suited for low voltage, low current applications such as small servo motor control, power MOSFET gate drivers, and other switching applications.

FEATURES

High density cell design for low RDS(ON).
Voltage controlled small signal switch.
Rugged and reliable.
High saturation current capability.

APPLICATION

N-Channel Enhancement Mode Field Effect Transistor
For portable equipment:(i.e. Mobile phone,MP3, MD,CD-ROM, DVD-ROM, Note book PC, etc.)



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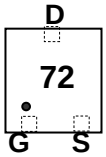

MAXIMUM RATINGS* T_A=25℃ unless otherwise noted

Symbol	Parameter	Value	Units
V_{DS}	Drain-Source voltage	60	V
I_D	Drain Current	115	mA
P_D	Power Dissipation	150	mW
$R_{\theta}JA$	Thermal Resistance. Junction to Ambient Air	625	℃/W
T_J	Junction Temperature	150	℃
T_{stg}	Storage Temperature	-55-150	℃

ELECTRICAL CHARACTERISTICS(Ta=25℃ unless otherwise specified)

Parameter	Symbol	Test conditions	MIN	TYP	MAX	UNIT
Drain-Source Breakdown Voltage	$V_{(BR)DSS}$	V_{GS}=0V,I_D=10μA	60			V
		V_{GS}=0V,I_D=3mA	60			
Gate-Threshold Voltage*	$V_{th(GS)}$	V_{DS}=V_{GS}, I_D=250μA	1		2.5	
Gate-body Leakage	I_{GSS}	V_{DS}=0V, V_{GS}=±25V			±100	nA
Zero Gate Voltage Drain Current	I_{DSS}	V_{DS}=60V, V_{GS}=0V			1	μA
		V_{DS}=60V,V_{GS}=0V,T_j=125℃			500	
On-state Drain Current*	$I_{D(ON)}$	V_{GS}=10V, V_{DS}=7V	500			mA
Drain-Source On-Resistance*	$R_{DS(0n)}$	V_{GS}=10V, I_D=500mA		1.2	7.5	Ω
		V_{GS}=5V, I_D=50mA		1.7	7.5	
Drain-Source On- Voltage *	$V_{DS(0n)}$	V_{GS}=10V, I_D=500mA			3.75	V
		V_{GS}=5V, I_D=50mA			0.375	
Forward Tran conductance*	g_{ts}	V_{DS}=10V, I_D=200mA	80			ms
Diode Forward Voltage	V_{SD}	I_S=115mA, V_{GS}=0V			1.2	V
Input Capacitance	C_{iss}	V_{DS}=25V, V_{GS}=0V,f=1MHz			50	pF
Output Capacitance	C_{OSS}				25	
Reverse Transfer Capacitance	C_{rSS}				5	

***** Pulse test , pulse width≤300μs, duty cycle≤2% .

SWITCHING TIME

Turn-on Time	$t_{d(0n)}$	V_{DD}=25V,R_G=25Ω I_D=500mA,V_{GEN}=10V R_L=50Ω			20	ns
Turn-off Time	$t_{d(off)}$				40	

Typical Characteristics

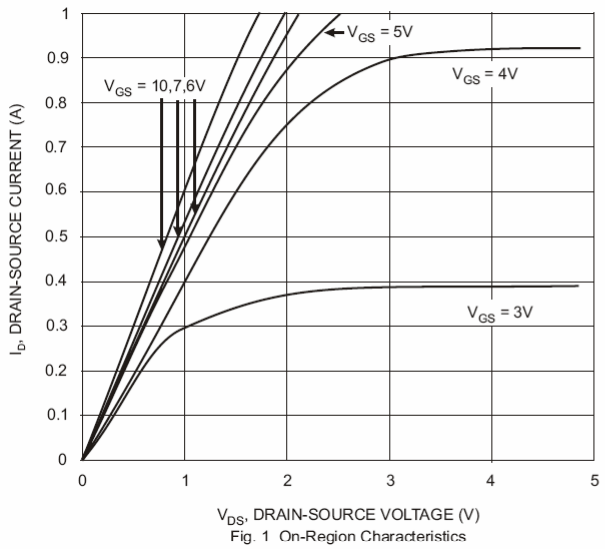

Fig. 1 On-Region Characteristics

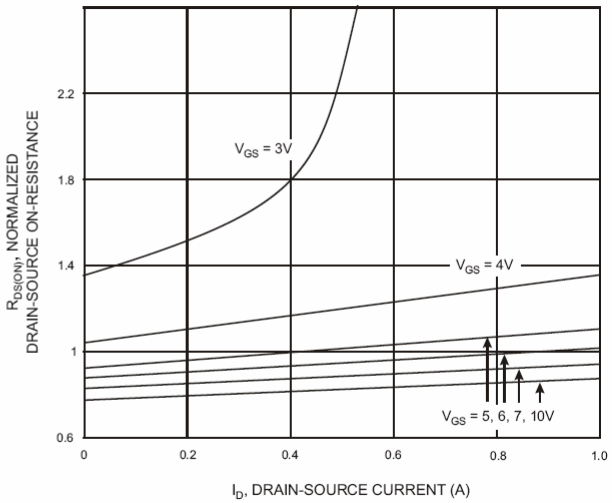

Fig. 2 On-Resistance Variation with Gate Voltage and Drain-Source Current

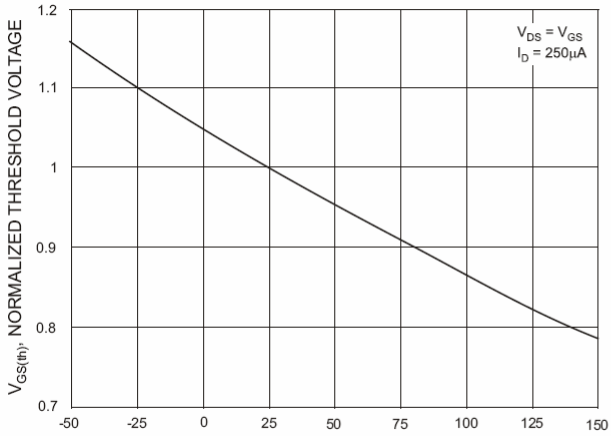

Fig. 3 Gate Threshold Variation with Temperature

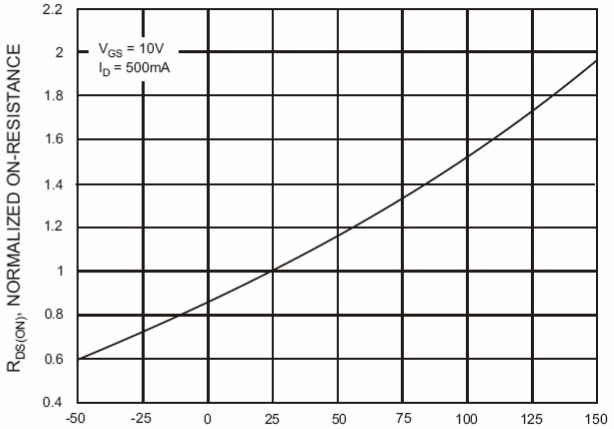

Fig. 4 On-Resistance Variation with Temperature

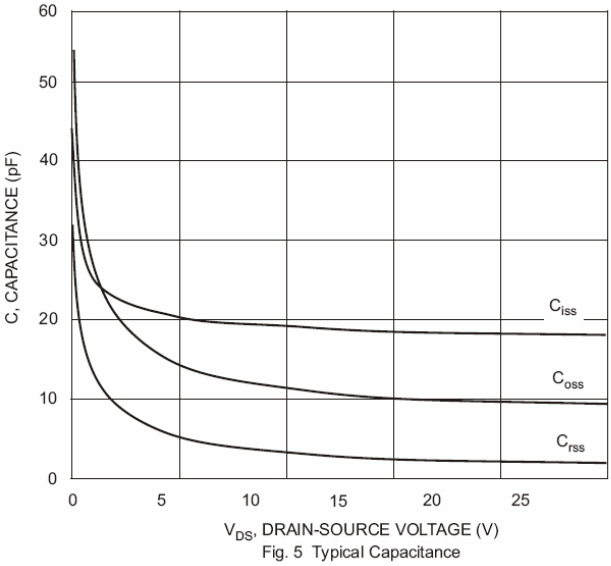

Fig. 5 Typical Capacitance

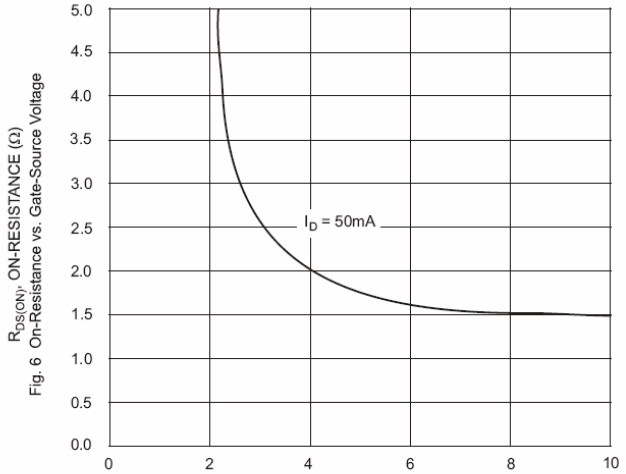

Fig. 6 On-Resistance vs. Gate-Source Voltage

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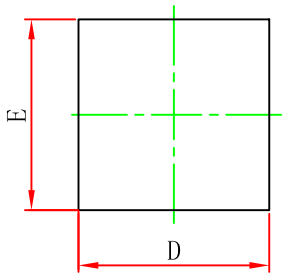
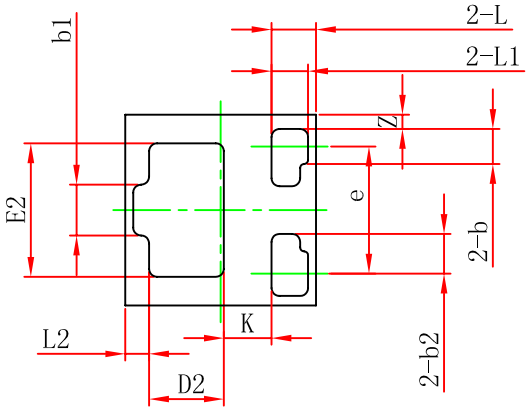
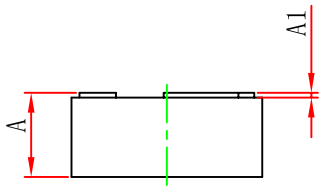
WBFBP-03B(1.2×1.2×0.5) PACKAGE OUTLINE DIMENSIONS



TOP VIEW

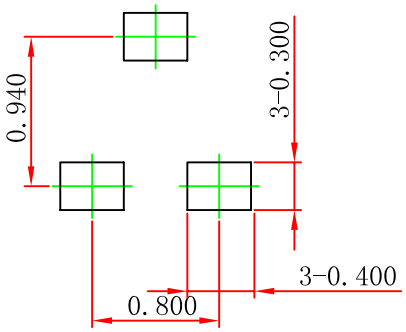


BOTTOM VIEW



SIDE VIEW

(LAND PATTERN RECOMMENDATION)



Symbol	Dimensions In Millimeters		Dimensions In Inches	
	Min.	Max.	Min.	Max.
A	0.450	0.550	0.018	0.022
A1	0.010	0.090	0.000	0.004
b	0.170	0.270	0.007	0.011
b1	0.270	0.370	0.011	0.015
b2	0.250 REF.		0.010 REF.	
D	1.150	1.250	0.045	0.049
E	1.150	1.250	0.045	0.049
D2	0.470 REF.		0.002 REF.	
E2	0.810 REF.		0.032 REF.	
e	0.800 TYP.		0.032 TYP.	
L	0.280 REF.		0.011 REF.	
L1	0.230 REF.		0.009 REF.	
L2	0.150 REF.		0.006 REF.	
k	0.300 REF.		0.012 REF.	
z	0.090 REF.		0.004 REF.	