Pb Free Plating Product

GTM CORPORATION

ISSUED DATE :2005/01/26
REVISED DATE :2005/03/22B

G152B

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV_{DSS}	-20V
$R_{DS(ON)}$	0.3Ω
I_D	-0.7A

Description

The G152B provide the designer with best combination of fast switching, low on-resistance and cost-effectiveness.
The G152B is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

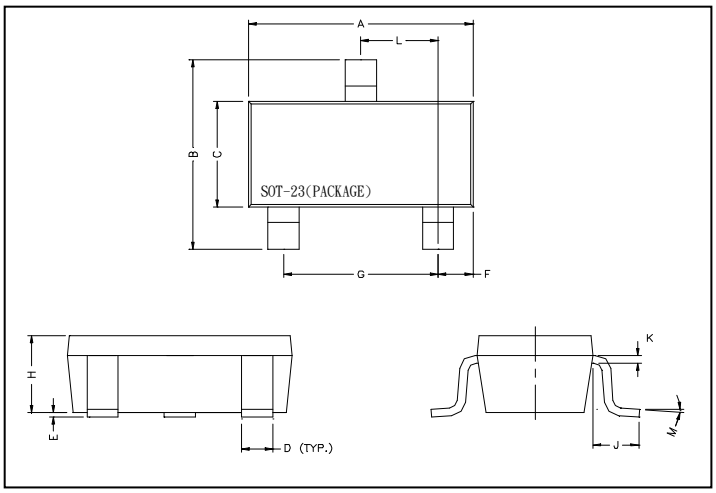
Features

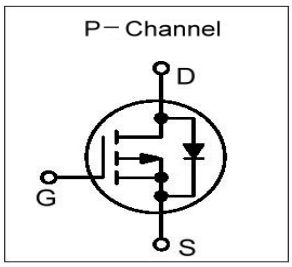
- Low On-State Resistance:0.3Ω(max)
- Ultra High Speed Switching

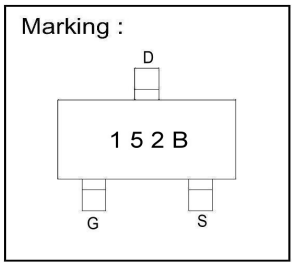
Applications

- Notebook PCs
- Cellular and portable phones
- On-board power supplies
- Li-ion battery System

Package Dimensions







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	2.70	3.10	G	1.90	REF.
B	2.40	2.80	H	1.00	1.30
C	1.40	1.60	K	0.10	0.20
D	0.35	0.50	J	0.40	-
E	0	0.10	L	0.85	1.15
F	0.45	0.55	M	0°	10°

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-20	V
Gate-Source Voltage	V_{GS}	±12	V
Continuous Drain Current[3]	I_D	-0.7	A
Pulsed Drain Current[1,2]	I_{DM}	-2.8	A
Power Dissipation	P_D@T_A=25℃	0.5	W
Linear Derating Factor		0.01	W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃

Thermal Data

Parameter	Symbol	Ratings	Unit
Thermal Resistance Junction-ambient[3] Max.	Rthj-a	90	℃/W

Electrical Characteristics(Tj = 25℃ Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-20	-	-	V	V_{GS}=0, I_D=-250uA
Breakdown Voltage Temperature Coefficient	$\triangle BV_{DSS}/\triangle Tj$	-	-0.1	-	V/℃	Reference to 25℃, I_D=-1mA
Gate Threshold Voltage	$V_{GS(th)}$	-0.5	-	-1.2	V	V_{DS}=V_{GS}, I_D=-1mA
Forward Transconductance	g_{fs}	-	1.5	-	S	V_{DS}=-10V, I_D=-0.4A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±12V
Drain-Source Leakage Current(Tj=25℃)	I_{DSS}	-	-	-10	uA	V_{DS}=-20V, V_{GS}=0
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	135	300	mΩ	V_{GS}=-4.5V, I_D=-0.4A
		-	192	500		V_{GS}=-2.5V, I_D=-0.4A
Total Gate Charge[2]	Q_g	-	5.2	10	nC	I_D=-0.7A V_{DS}=-10.0V V_{GS}=-6.0V
Gate-Source Charge	Q_{gs}	-	1.36	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	0.6	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	5	-	ns	V_{DD}=-10V I_D=-0.4A V_{GS}=-5V
Rise Time	T_r	-	20	-		
Turn-off Delay Time	$T_{d(off)}$	-	55	-		
Fall Time	T_f	-	70	-		
Input Capacitance	C_{iss}	-	180	-	pF	V_{GS}=0V V_{DS}=-10V f=1.0MHz
Output Capacitance	C_{oss}	-	120	-		
Reverse Transfer Capacitance	C_{rss}	-	60	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage[2]	V_{SD}	-	-	-1.1	V	I_S=-0.7A, V_{GS}=0V

Notes: 1. Pulse width limited by Max. junction temperature.

2. Pulse width≦300us, duty cycle≦2%.

3. Surface mounted on 1 in^2 copper pad of FR4 board;270℃/W when mounted on min. copper pad.

Characteristics Curve

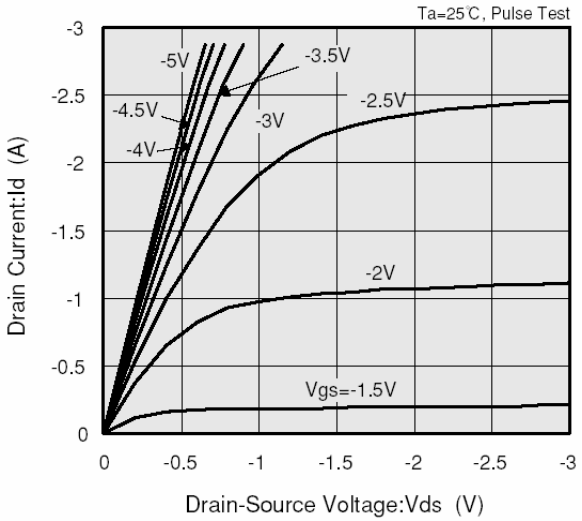


Fig 1. Drain Current v.s. Drain-Source Voltage

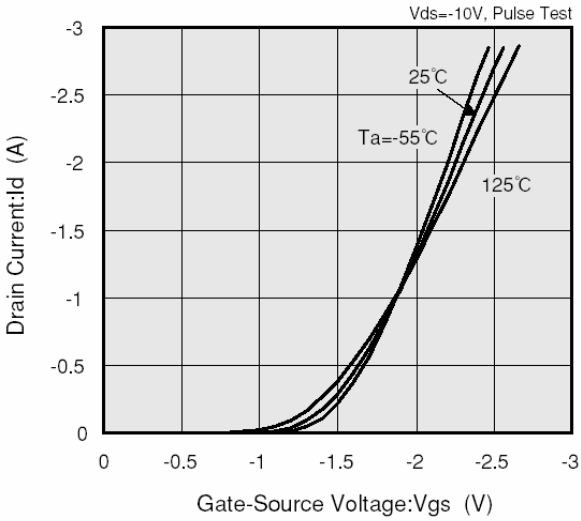


Fig 2. Drain Current v.s. Gate-Source Voltage

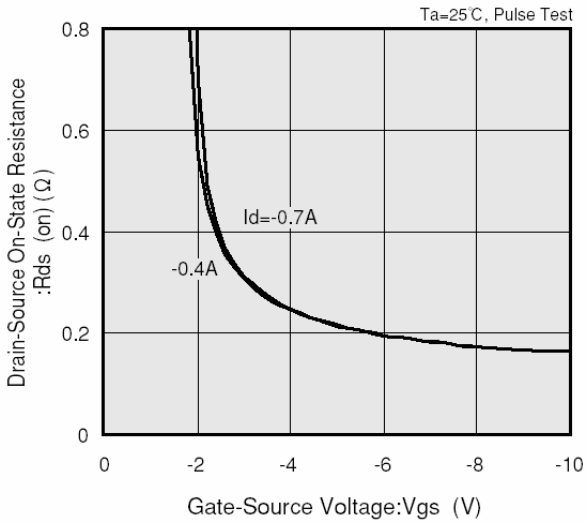


Fig 3. Drain-Source On-State Resistance v.s. Gate-Source Voltage

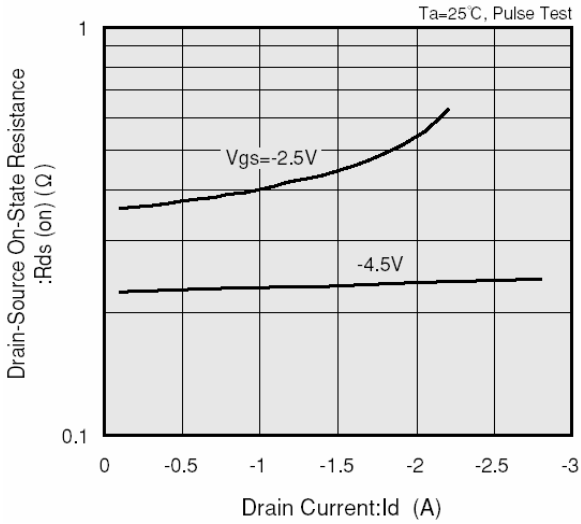


Fig 4. Drain-Source On-State Resistance v.s. Drain Current

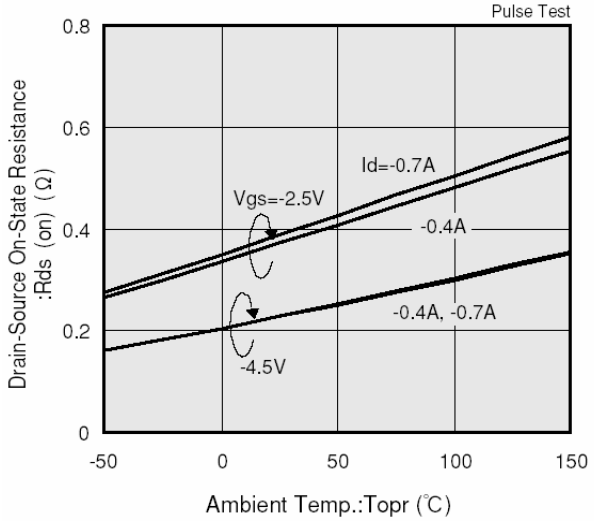


Fig 5. Drain-Source On-State Resistance v.s. Ambient Temperature

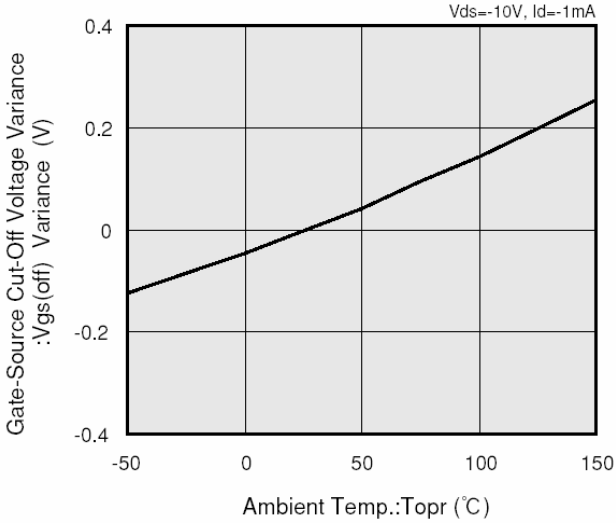


Fig 6. Gate-Source Cut-off Voltage Variance v.s. Ambient Temperature

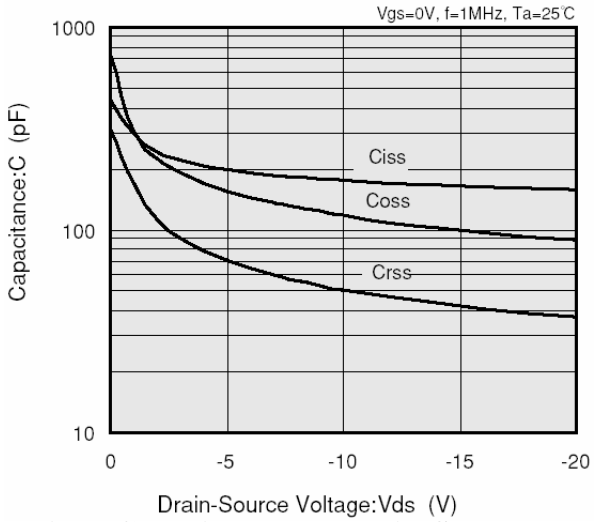


Fig 7. Capacitance v.s. Drain-Source Voltage

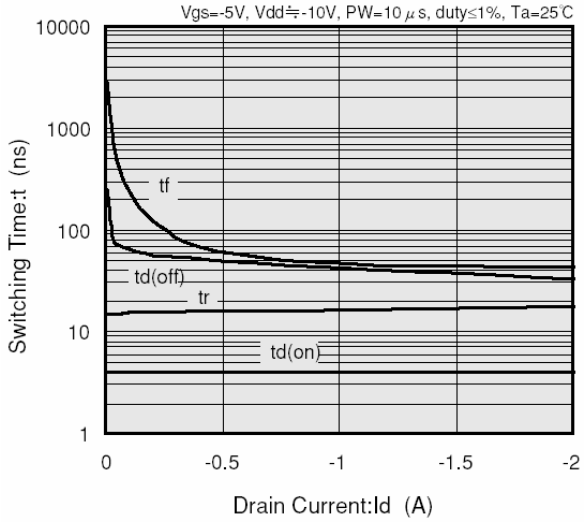


Fig 8. Switching Time v.s. Drain Current

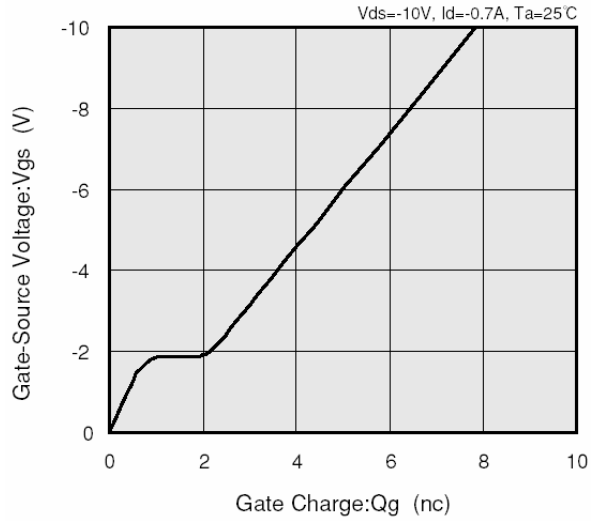


Fig 9. Gate-Source Voltage v.s. Gate Charge

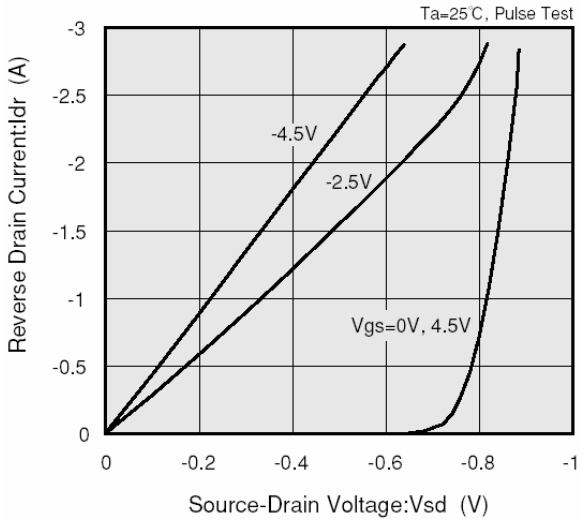


Fig 10. Reverse Drain-Current v.s. Source-Drain Voltage

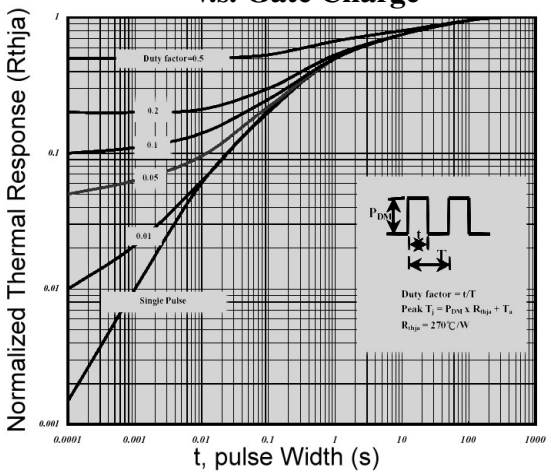


Fig 11. Thermal Resistance v.s. Pulse Width

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