

GS152B

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV _{DSS}	-20V
R _{DS(ON)}	300mΩ
I _D	-0.7A

Description

The GS152B provides the designer with the best combination of fast switching, low on-resistance and cost-effectiveness.

The GS152B 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

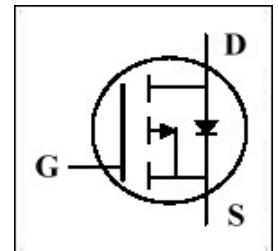
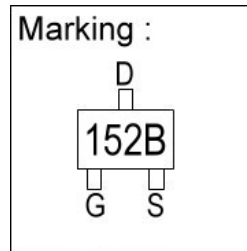
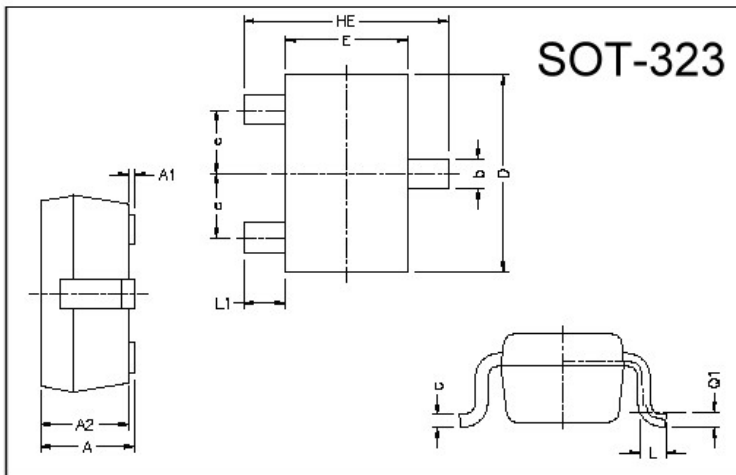
*Notebook PCs

*Cellular and portable phones

*On-board power supplies

*Li-ion battery System

Package Dimensions



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	0.80	1.10	L1	0.42 REF.	
A1	0	0.10	L	0.15	0.35
A2	0.80	1.00	b	0.25	0.40
D	1.80	2.20	c	0.10	0.25
E	1.15	1.35	e	0.65 REF.	
HE	1.80	2.40	Q1	0.15 BSC.	

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 @TA=25°C	-0.7	A
Pulsed Drain Current ^{1,2}	I _{DM}	-2.8	A
Power Dissipation	P _D @TA=25°C	0.35	W
Linear Derating Factor		0.0028	W/°C
Operating Junction and Storage Temperature Range	T _J , T _{stg}	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient ³ Max.	R _{thj-a}	360	°C/W

Electrical Characteristics (T_j = 25°C 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	$\Delta BV_{DSS} / \Delta T_j$	-	-0.1	-	V/°C	Reference to 25°C, 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(T _j =25°C)	I _{DSS}	-	-	-10	uA	V _{DS} =-20V, V _{GS} =0
Static Drain-Source On-Resistance	R _{DS(ON)}	-	-	300	mΩ	V _{GS} =-4.5V, I _D =-0.4A
		-	-	500		V _{GS} =-2.5V, I _D =-0.4A
Total Gate Charge ²	Q _g	-	3.2	-	nC	I _D =-0.7A V _{DS} =-10V V _{GS} =-4.5V
Gate-Source Charge	Q _{gs}	-	0.7	-		
Gate-Drain ("Miller") Charge	Q _{gd}	-	0.8	-		
Turn-on Delay Time ²	T _{d(on)}	-	9.8	-	ns	V _{DS} =-10V I _D =-0.4A V _{GS} =-4.5V R _G =6Ω
Rise Time	T _r	-	10.8	-		
Turn-off Delay Time	T _{d(off)}	-	79.1	-		
Fall Time	T _f	-	41.3	-		
Input Capacitance	C _{iss}	-	290	-	Pf	V _{GS} =0V V _{DS} =-20V f=1.0MHz
Output Capacitance	C _{oss}	-	60	-		
Reverse Transfer Capacitance	C _{rss}	-	45	-		

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 FR4 board, t ≤ 10sec.

Characteristics Curve

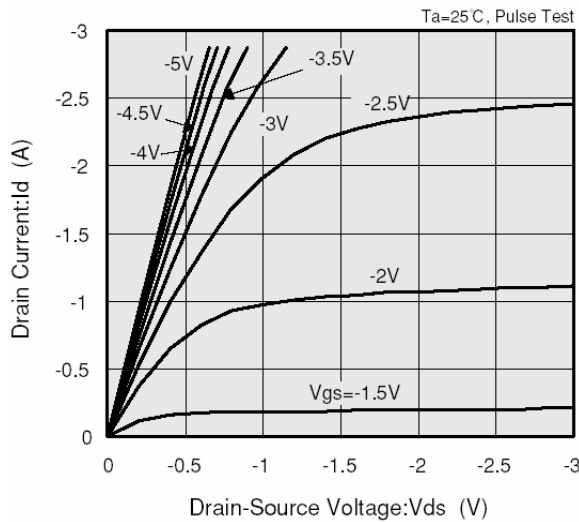


Fig 1. Drain Current vs. Drain-Source Voltage

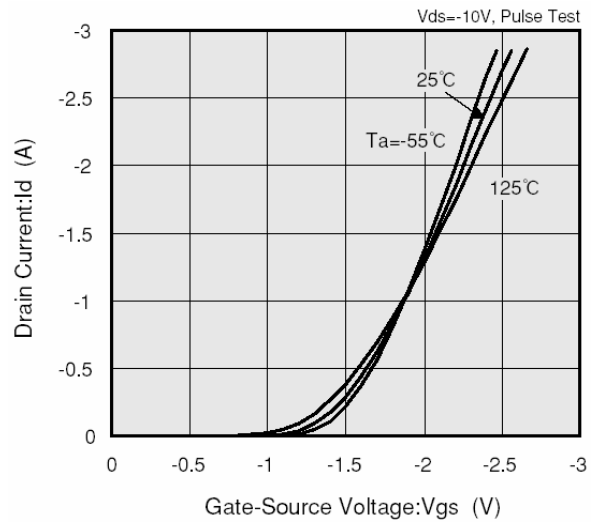


Fig 2. Drain Current vs. Gate-Source Voltage

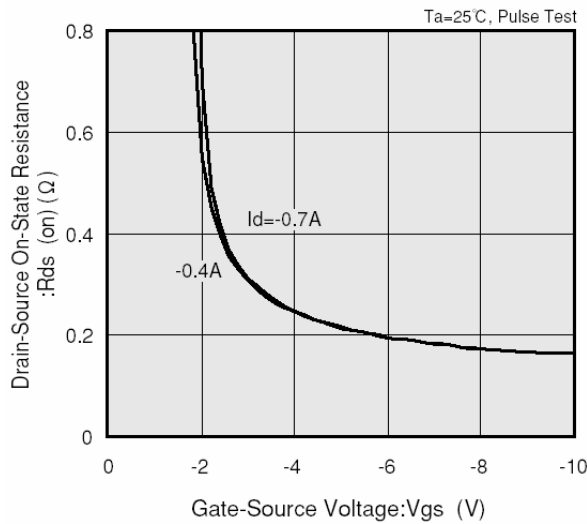


Fig 3. Drain-Source On-State Resistance vs. Gate-Source Voltage

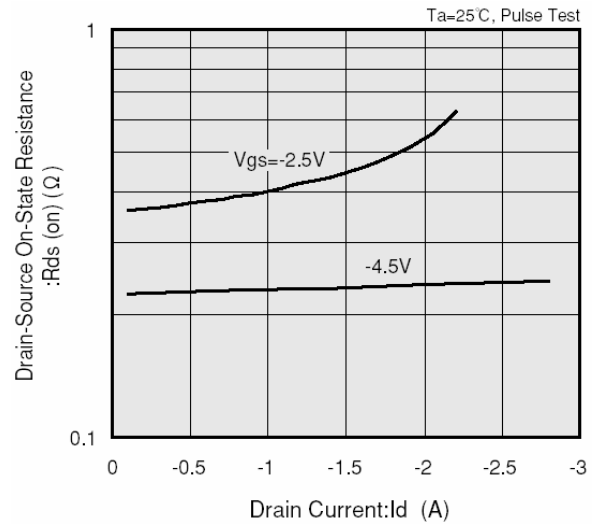


Fig 4. Drain-Source On-State Resistance vs. Drain Current

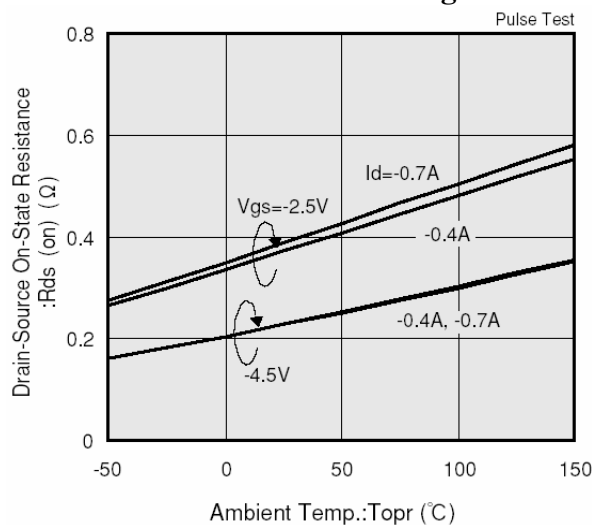


Fig 5. Drain-Source On-State Resistance vs. Ambient Temperature

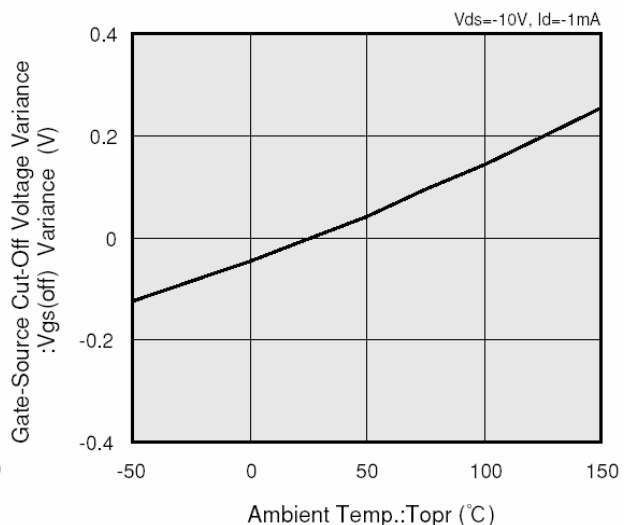


Fig 6. Gate-Source Cut-off Voltage Variance vs. Ambient Temperature

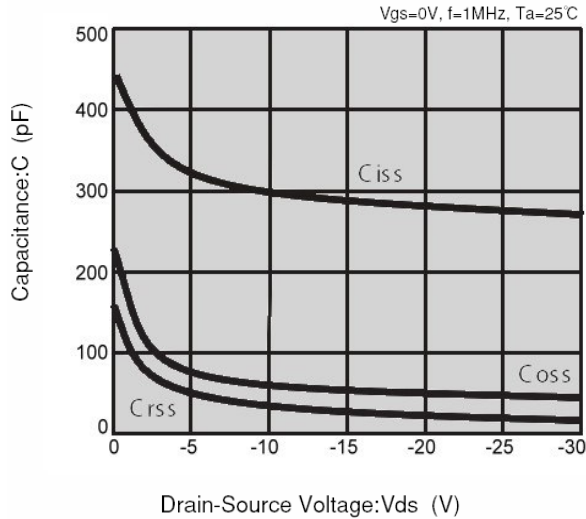


Fig 7. Capacitance v.s. Drain-Source Voltage

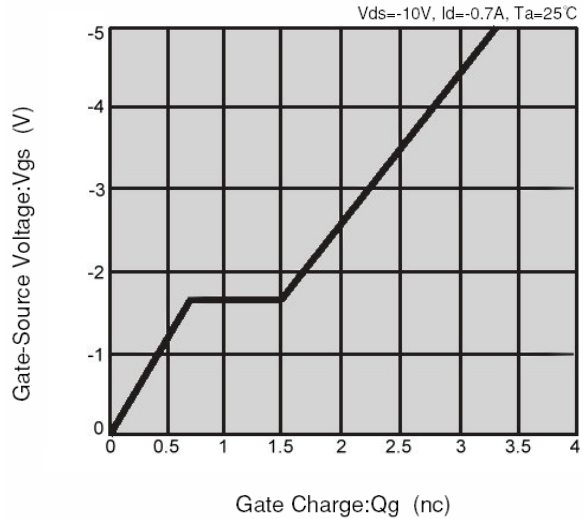


Fig 8. Gate-Source Voltage v.s. Gate Charge

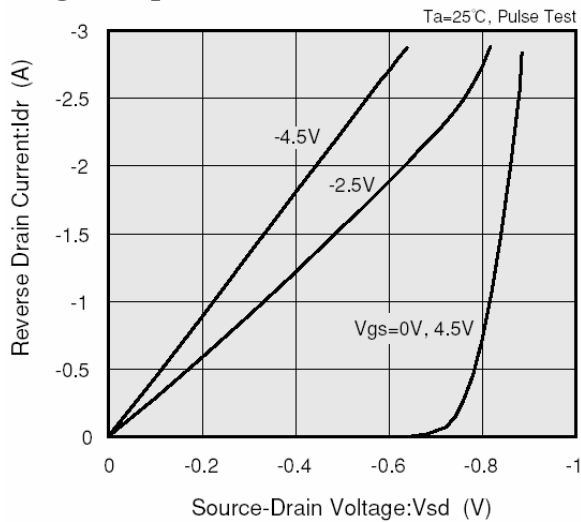


Fig 9. Reverse Drain-Current v.s. Source-Drain Voltage

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