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.

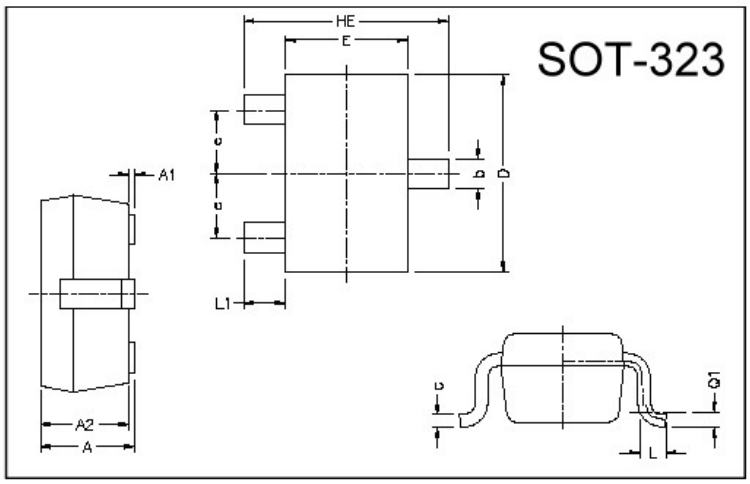
Features

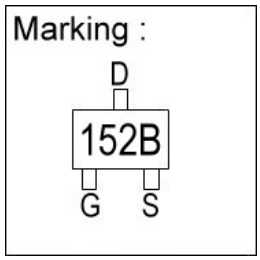
*Low On-State Resistance:0.3Ω(max)
*Ultra High Speed Switching

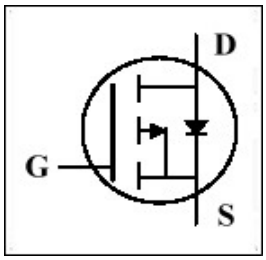
Applications

*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 @T_A=25℃	-0.7	A
Pulsed Drain Current[1,2]	I_{DM}	-2.8	A
Power Dissipation	P_D @T_A=25℃	0.35	W
Linear Derating Factor		0.0028	W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient[3] Max.	Rthj-a	360	℃/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	$R_{DS(ON)}$	-	-	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”) Change	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

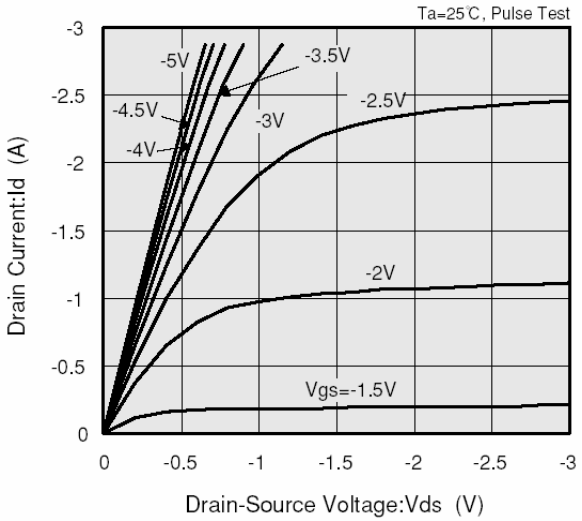


Fig 1. Drain Current v.s. Drain-Source Voltage

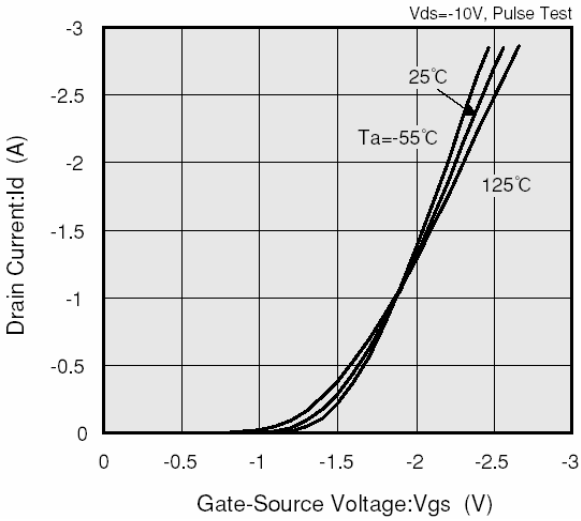


Fig 2. Drain Current v.s. Gate-Source Voltage

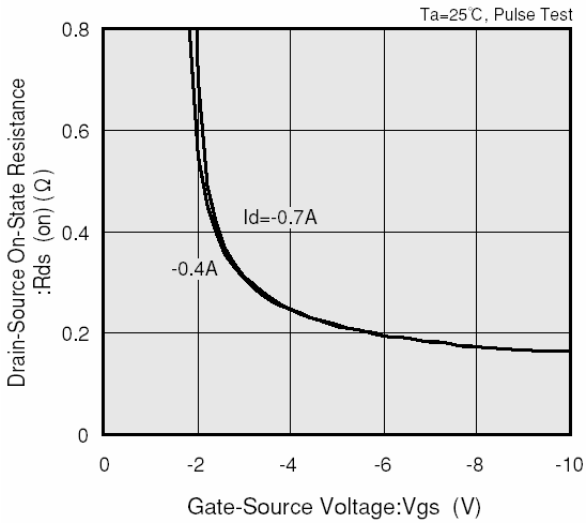


Fig 3. Drain-Source On-State Resistance v.s. Gate-Source Voltage

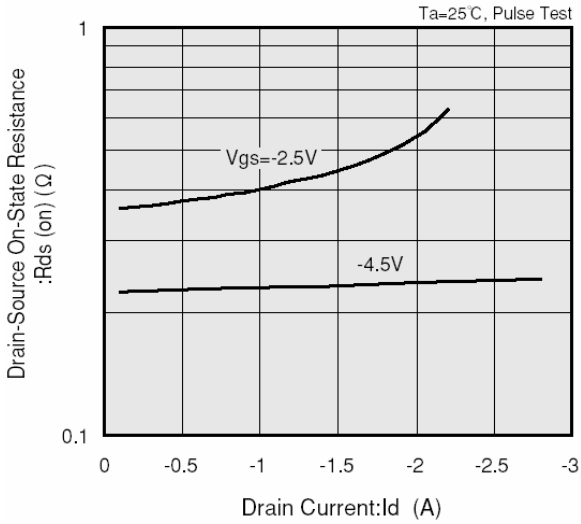


Fig 4. Drain-Source On-State Resistance v.s. Drain Current

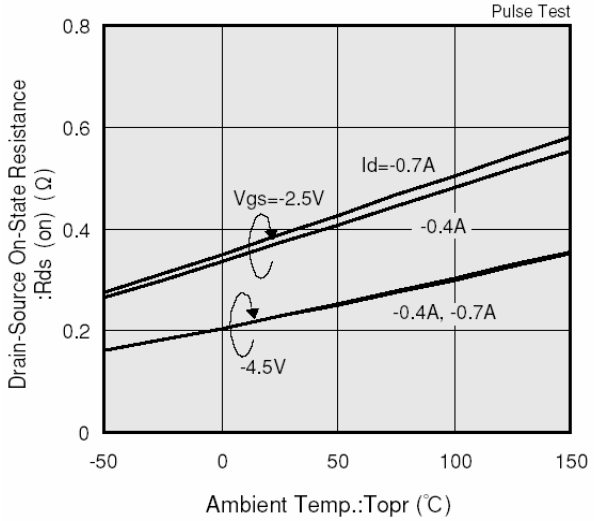


Fig 5. Drain-Source On-State Resistance v.s. Ambient Temperature

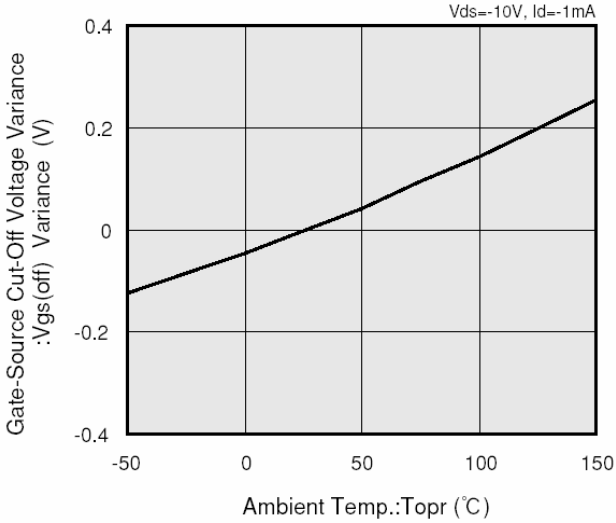


Fig 6. Gate-Source Cut-off Voltage Variance v.s. Ambient Temperature

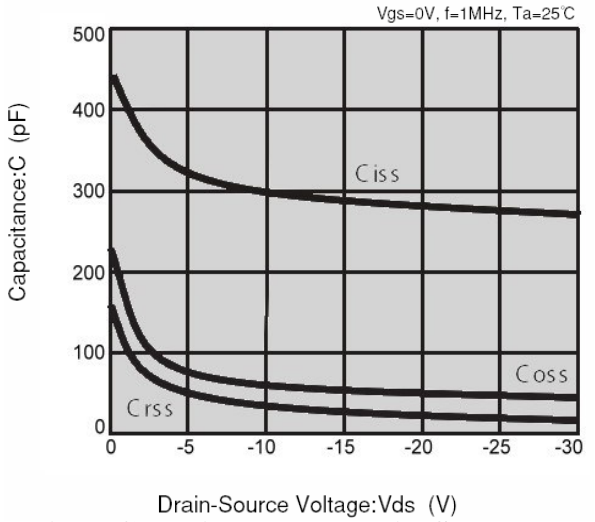


Fig 7. Capacitance v.s. Drain-Source Voltage

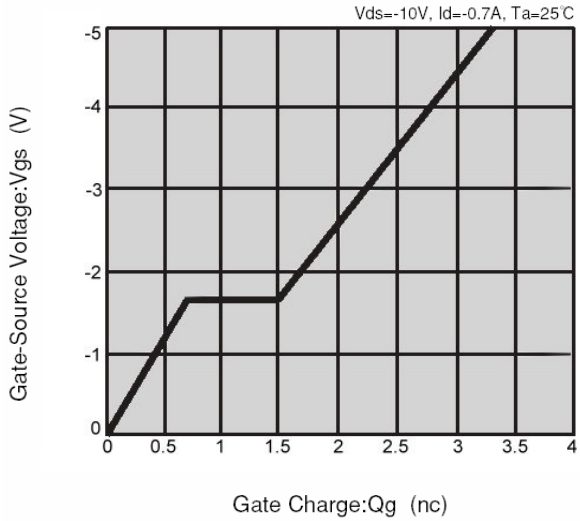


Fig 8. Gate-Source Voltage v.s. Gate Charge

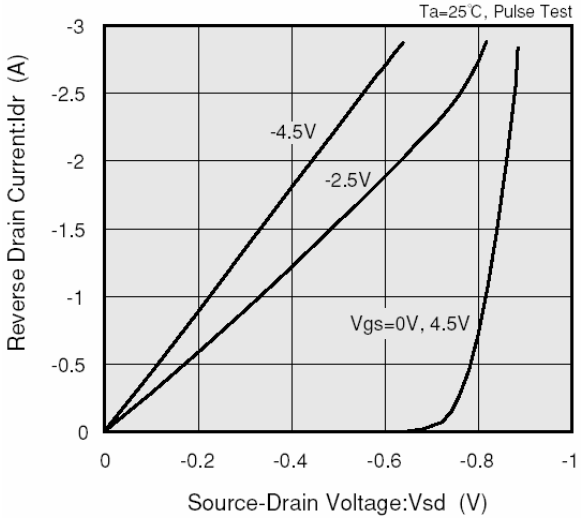


Fig 9. Reverse Drain-Current v.s. Source-Drain Voltage

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