

GI08P10

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV _{DSS}	-100V
R _{DS(ON)}	200mΩ
I _D	-8A

Description

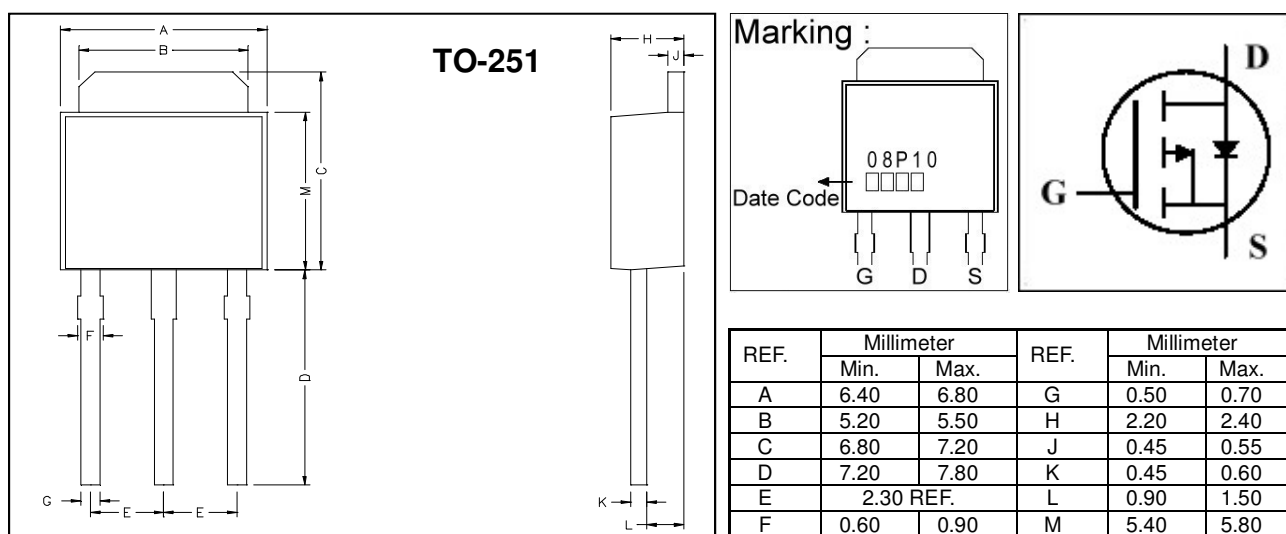
The GI08P10 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

The TO-251 package is universally preferred for all commercial-industrial through hole applications.

Features

- *Simple Drive Requirement
- *Lower On-resistance
- *Fast Switching Characteristic
- *RoHS Compliant

Package Dimensions



Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V _{DS}	-100	V
Gate-Source Voltage	V _{GS}	±32	V
Continuous Drain Current, V _{GS} @10V	I _D @T _C =25°C	-8	A
Continuous Drain Current, V _{GS} @10V	I _D @T _C =100°C	-6	A
Pulsed Drain Current ¹	I _{DM}	-32	A
Total Power Dissipation	P _D @T _C =25°C	45	W
Linear Derating Factor		0.36	W/°C
Single Pulse Avalanche Energy ²	E _{AS}	100	mJ
Avalanche Current	I _{AR}	-8	A
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-case Max.	R _{thj-c}	2.8	°C/W
Thermal Resistance Junction-ambient Max.	R _{thj-a}	110	°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}	-100	-	-	V	V _{GS} =0, I _D =-250uA
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_j$	-	-0.096	-	V/°C	Reference to 25°C, I _D =-1mA
Gate Threshold Voltage	V _{GS(th)}	-1.0	-	-3.0	V	V _{DS} =V _{GS} , I _D =-250uA
Forward Transconductance	g _{fs}	-	8	-	S	V _{DS} =-10V, I _D =-6A
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±32V
Drain-Source Leakage Current(T _j =25°C)	I _{DSS}	-	-	-1	uA	V _{DS} =-100V, V _{GS} =0
Drain-Source Leakage Current(T _j =150°C)		-	-	-25	uA	V _{DS} =-80V, V _{GS} =0
Static Drain-Source On-Resistance ³	R _{DS(ON)}	-	-	200	mΩ	V _{GS} =-10V, I _D =-6A
		-	-	250		V _{GS} =-4.5V, I _D =-4A
Total Gate Charge ³	Q _g	-	16	25.6	nC	I _D =-6A V _{DS} =-80V V _{GS} =-4.5V
Gate-Source Charge	Q _{gs}	-	4.4	-		
Gate-Drain ("Miller") Charge	Q _{gd}	-	8.7	-		
Turn-on Delay Time ³	T _{d(on)}	-	9	-	ns	V _{DS} =-50V I _D =-6A V _{GS} =-10V R _G =3.3Ω R _D =6.25Ω
Rise Time	T _r	-	14	-		
Turn-off Delay Time	T _{d(off)}	-	45	-		
Fall Time	T _f	-	40	-		
Input Capacitance	C _{iss}	-	1590	2550	pF	V _{GS} =0V V _{DS} =-25V f=1.0MHz
Output Capacitance	C _{oss}	-	110	-		
Reverse Transfer Capacitance	C _{rss}	-	70	-		
Gate Resistance	R _g	-	8	12	Ω	f=1.0MHz

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ³	V _{SD}	-	-	-1.7	V	I _S =-8A, V _{GS} =0V
Reverse Recovery Time ³	T _{rr}	-	49	-	ns	I _S =-6A, V _{GS} =0V dI/dt=100A/μs
Reverse Recovery Charge	Q _{rr}	-	11	-	nC	

Notes: 1. Pulse width limited by safe operating area.

2. Staring T_j=25°C, V_{DD}=-50V, L=13mH, R_G=25Ω, I_{AS}=-3.9A.

3. Pulse width ≤ 300us, duty cycle ≤ 2%.

Characteristics Curve

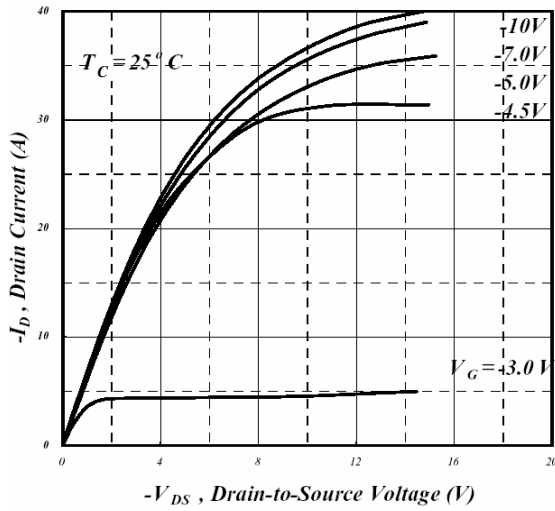


Fig 1. Typical Output Characteristics

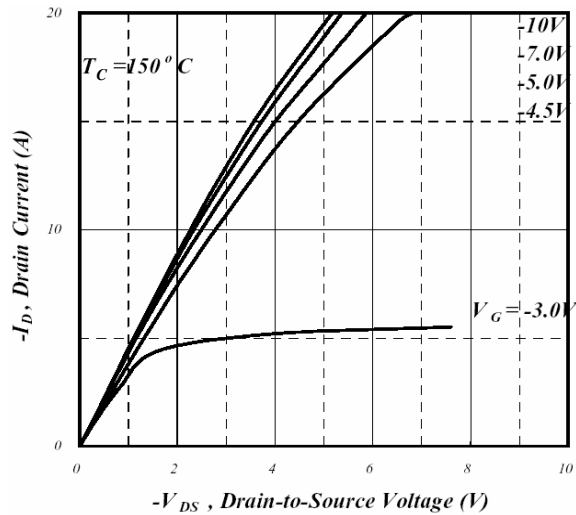


Fig 2. Typical Output Characteristics

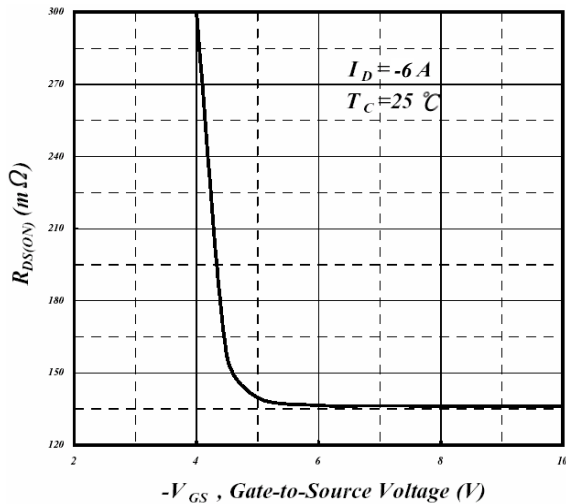


Fig 3. On-Resistance v.s. Gate Voltage

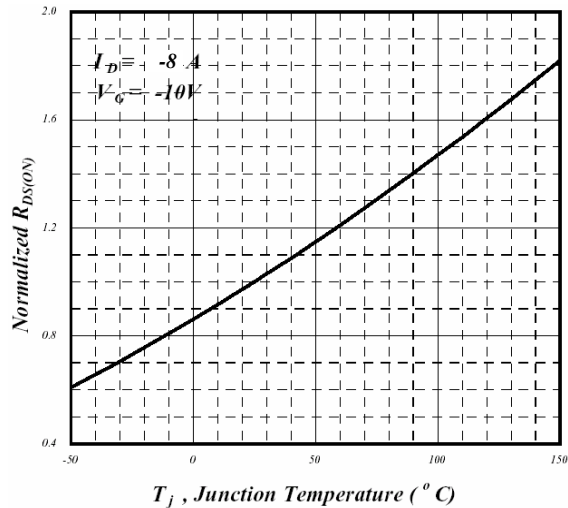


Fig 4. Normalized On-Resistance v.s. Junction Temperature

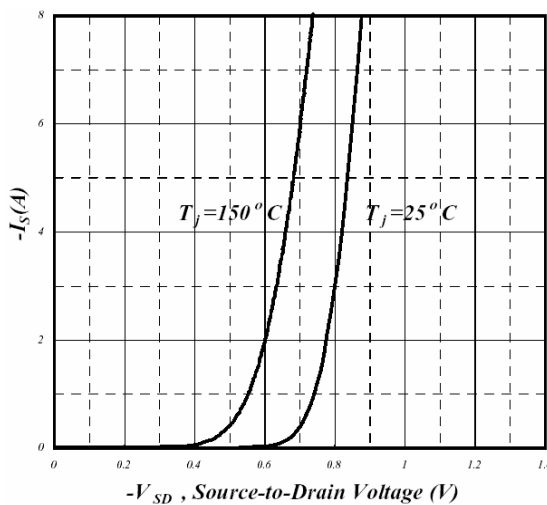


Fig 5. Forward Characteristics of Reverse Diode

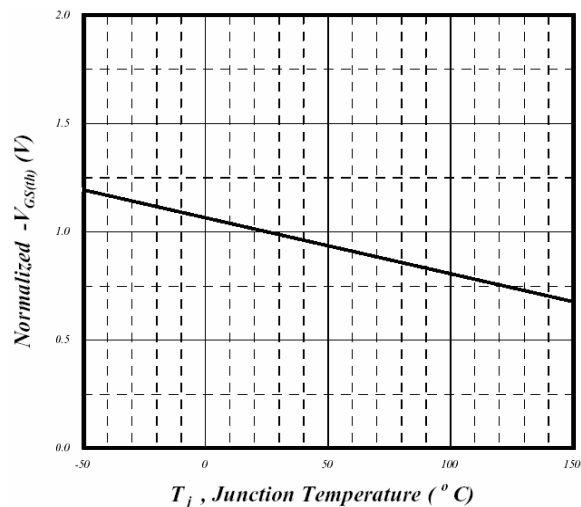


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

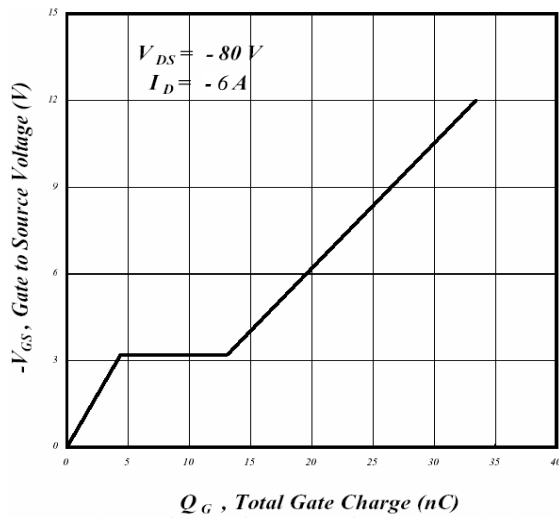


Fig 7. Gate Charge Characteristics

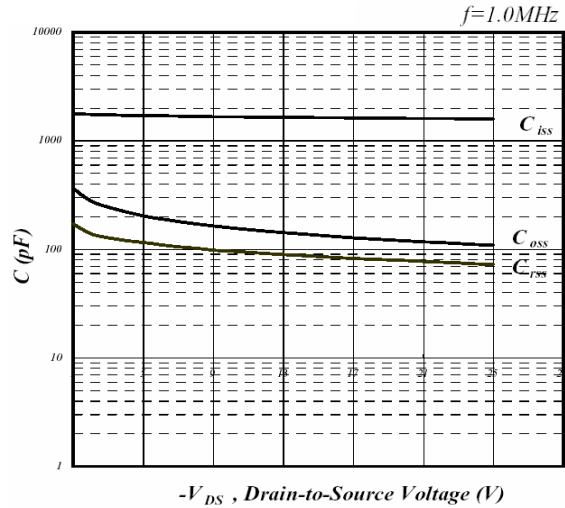


Fig 8. Typical Capacitance Characteristics

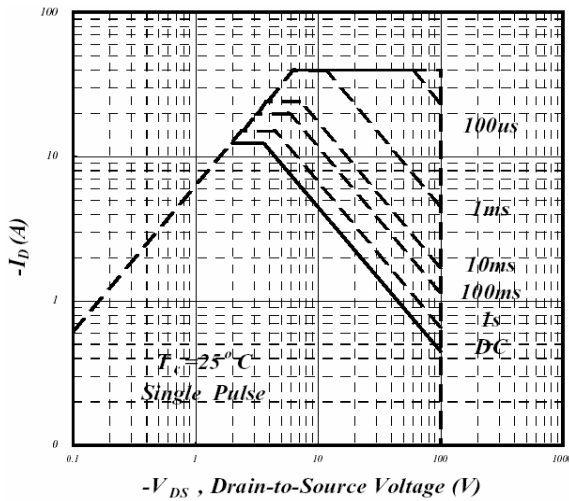


Fig 9. Maximum Safe Operating Area

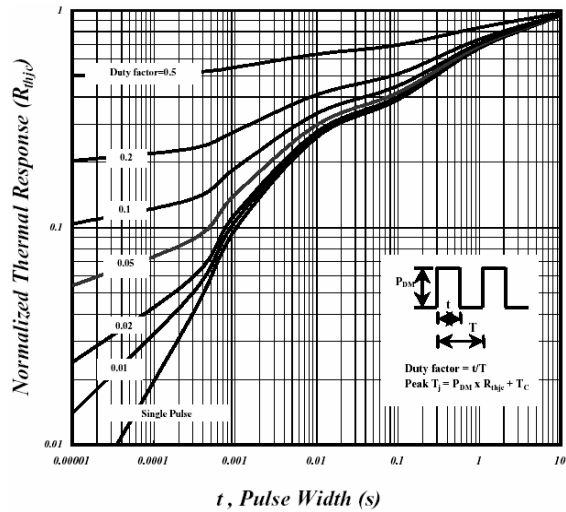


Fig 10. Effective Transient Thermal Impedance

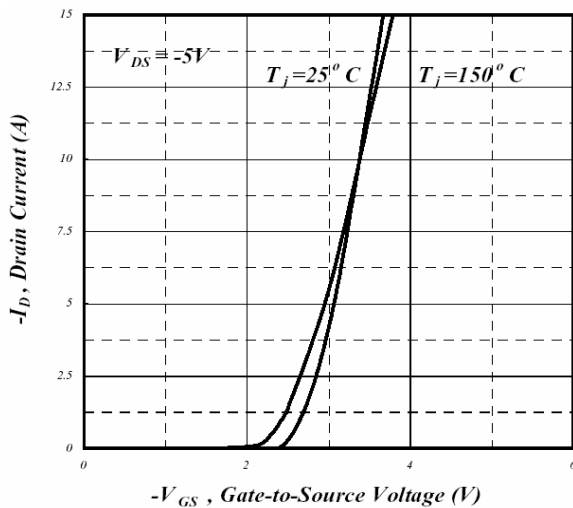


Fig 11. Transfer Characteristics

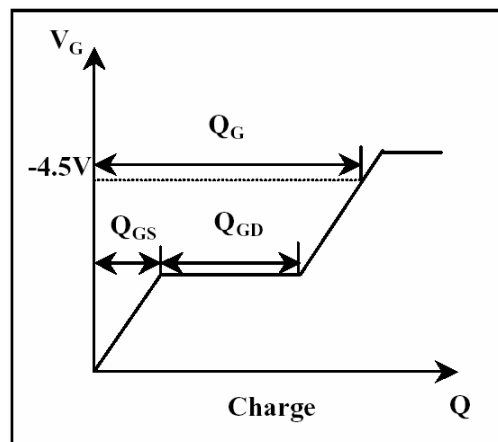


Fig 12. Gate Charge Waveform

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