

G2300**N-CHANNEL ENHANCEMENT MODE POWER MOSFET**

BV _{DSS}	20V
R _{DS(ON)}	28mΩ
I _D	6A

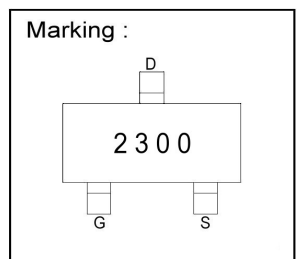
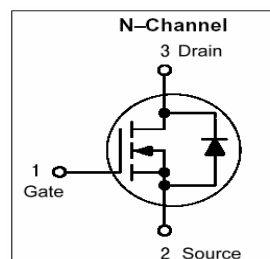
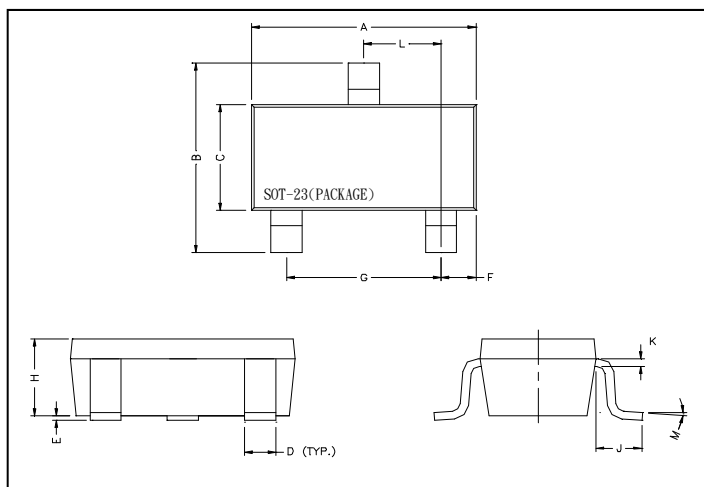
Description

The G2300 provide the designer with best combination of fast switching, low on-resistance and cost-effectiveness.

The G2300 is universally used for all commercial-industrial surface mount applications.

Features

- *Low on-resistance
- *Capable of 2.5V gate drive
- *Small Package Outline

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}	±8	V
Continuous Drain Current ³	I _D @TA=25°C	6	A
Continuous Drain Current ³	I _D @TA=70°C	4.8	A
Pulsed Drain Current ^{1,2}	I _{DM}	20	A
Power Dissipation	P _D @TA=25°C	1.25	W
Linear Derating Factor		0.01	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}	100	°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	-	1.0	V	V _{DS} =V _{GS} , I _D =250uA
Gate-Source Leakage Current	I _{GSS}	-	-	±100	nA	V _{GS} = ±8V
Drain-Source Leakage Current(T _j =25°C)	I _{DSS}	-	-	1	uA	V _{DS} =20V, V _{GS} =0
Drain-Source Leakage Current(T _j =70°C)		-	-	25	uA	V _{DS} =16V, V _{GS} =0
Static Drain-Source On-Resistance ²	R _{DS(on)}	-	-	28	mΩ	V _{GS} =4.5V, I _D =6A
		-	-	38		V _{GS} =2.5V, I _D =5.2A
Total Gate Charge ²	Q _g	-	10	-	nC	I _D =6A V _{DS} =10V V _{GS} =4.5V
Gate-Source Charge	Q _{gs}	-	3.6	-		
Gate-Drain ("Miller") Change	Q _{gd}	-	2	-		
Turn-on Delay Time ²	T _{d(on)}	-	8	-	ns	V _{DD} =10V I _D =1A V _{GS} =4.5V R _G =0.2Ω
Rise Time	T _r	-	6	-		
Turn-off Delay Time	T _{d(off)}	-	19	-		
Fall Time	T _f	-	7	-		
Input Capacitance	C _{iss}	-	550	-	pF	V _{GS} =0V V _{DS} =15V f=1.0MHz
Output Capacitance	C _{oss}	-	120	-		
Reverse Transfer Capacitance	C _{rss}	-	80	-		

Source-Drain Diode

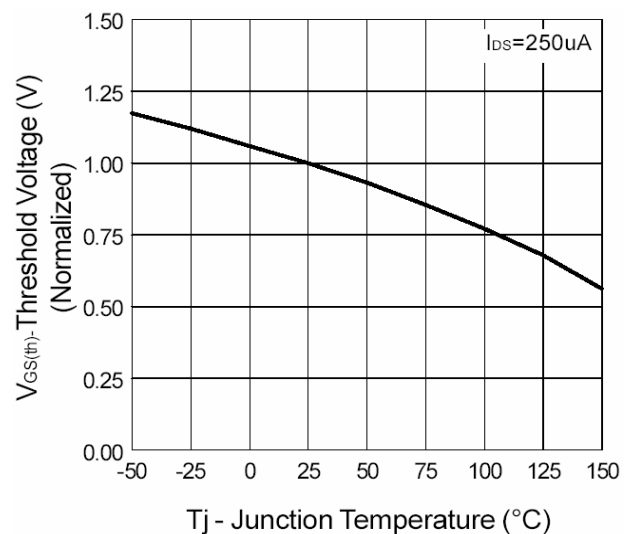
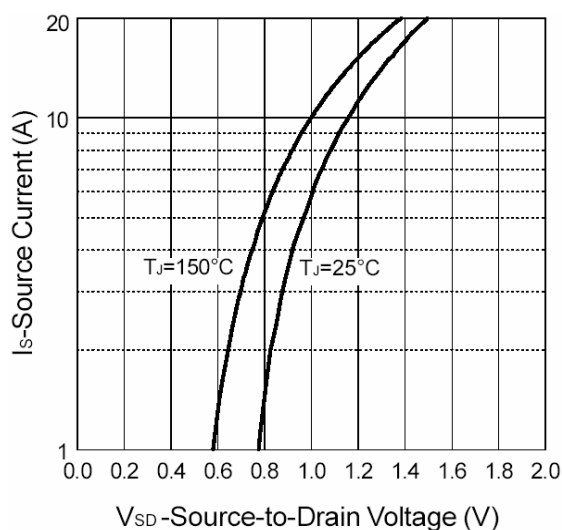
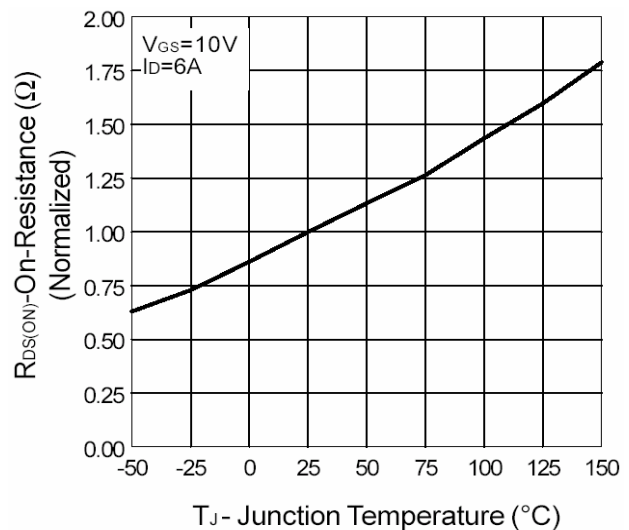
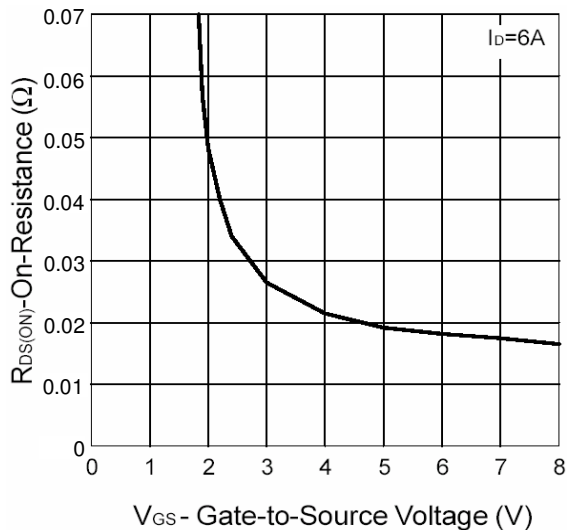
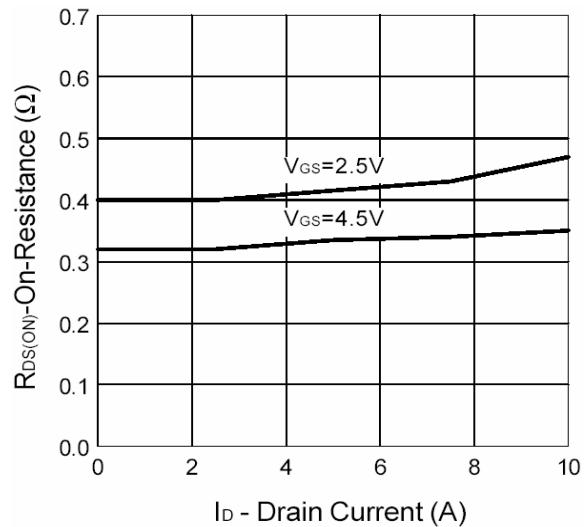
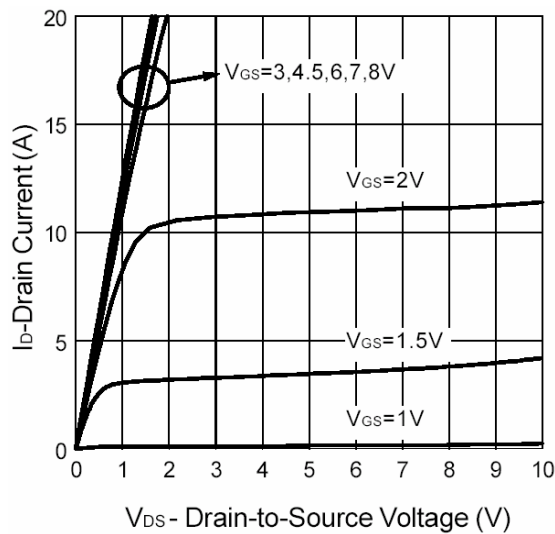
Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ²	V _{SD}	-	0.7	1.3	V	I _S =1.25A, V _{GS} =0V

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



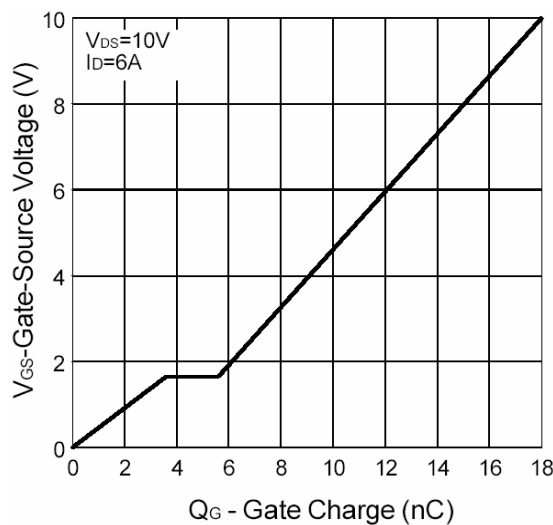


Fig 7. Gate Charge Characteristics

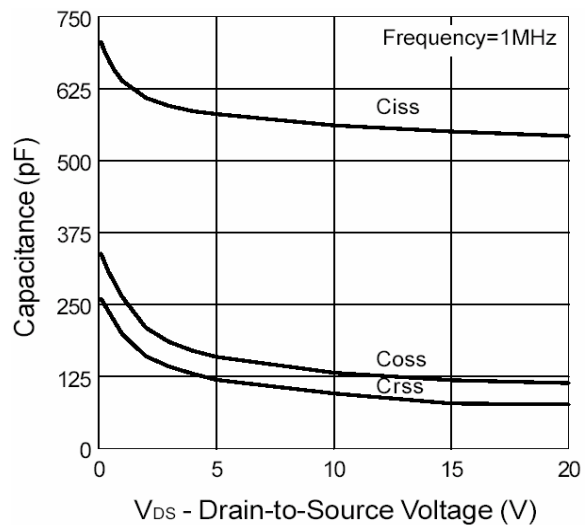


Fig 8. Typical Capacitance Characteristics

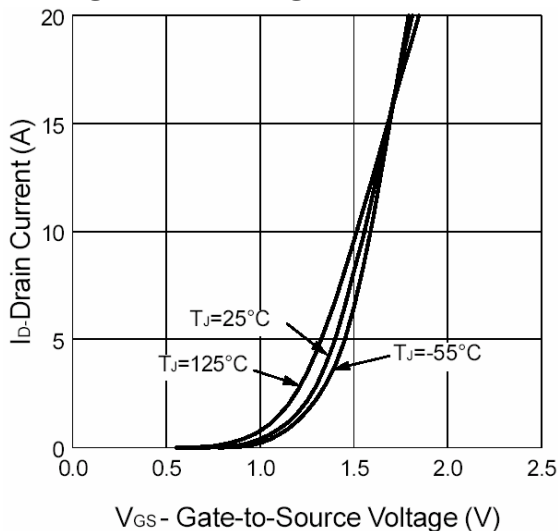


Fig 9. Transfer Characteristics

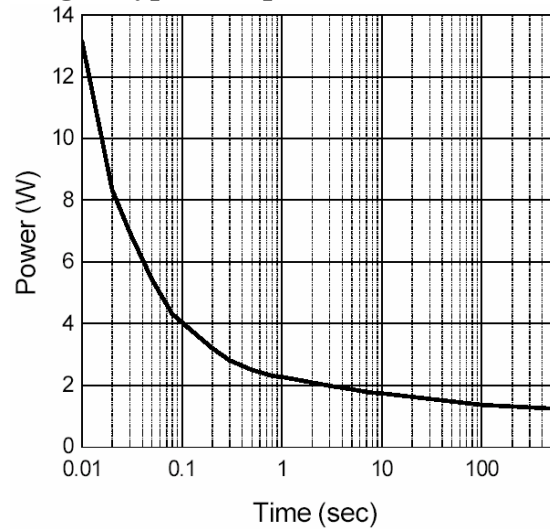


Fig 10. Single Pulse Power

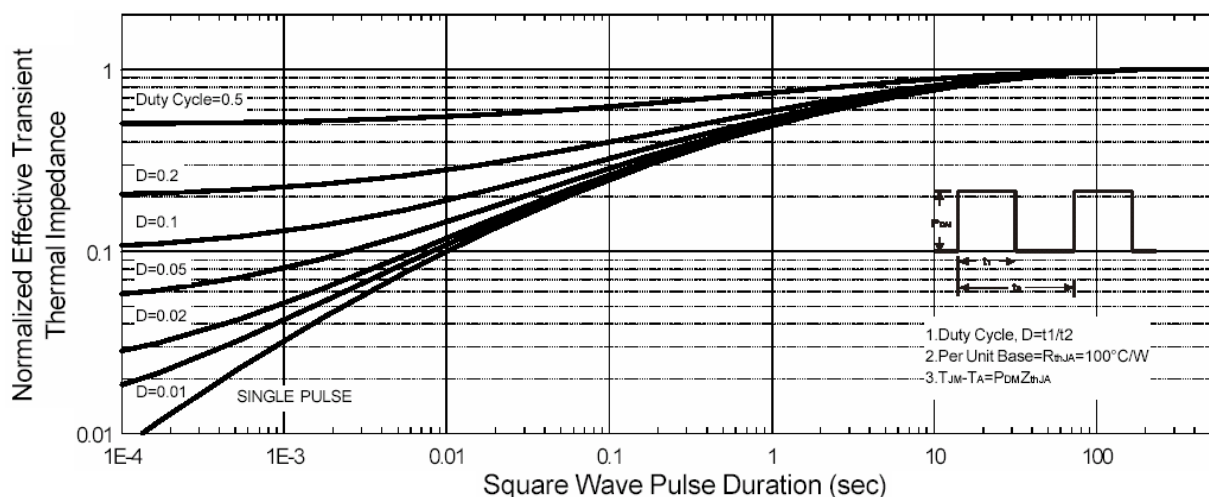


Fig 11. Normalized Thermal Transient Impedance, Junction to Ambient

Important Notice:

- All rights are reserved. Reproduction in whole or in part is prohibited without the prior written approval of GTM.
- GTM reserves the right to make changes to its products without notice.
- GTM semiconductor products are not warranted to be suitable for use in life-support Applications, or systems.
- GTM assumes no liability for any consequence of customer product design, infringement of patents, or application assistance.

Head Office And Factory:

- **Taiwan:** No. 17-1 Tatung Rd. Fu Kou Hsin-Chu Industrial Park, Hsin-Chu, Taiwan, R. O. C.
TEL : 886-3-597-7061 FAX : 886-3-597-9220, 597-0785
- **China:** (201203) No.255, Jang-Jiang Tsai-Lueng RD. , Pu-Dung-Hsin District, Shang-Hai City, China
TEL : 86-21-5895-7671 ~ 4 FAX : 86-21-38950165