

GLA2N70

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

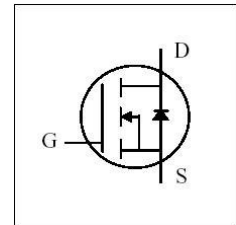
BVDSS	675V
RDS(ON)	10Ω
ID	0.2A

Description

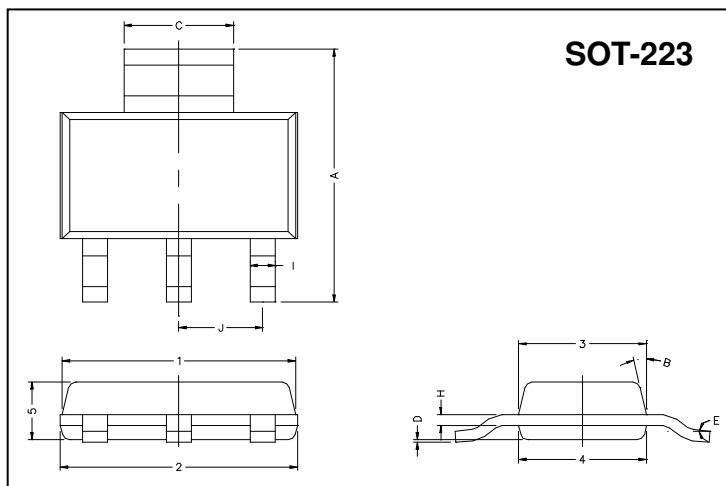
The GLA2N70 provide the designer with the best combination of fast switching, low on-resistance and cost-effectiveness.

Features

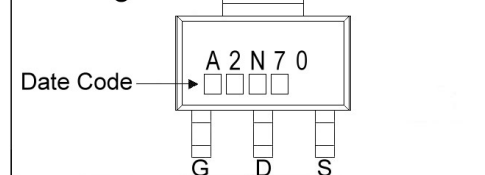
- *Dynamic dv/dt Rating
- *Simple Drive Requirement
- *Repetitive Avalanche Rated
- *Fast Switching



Package Dimensions



Marking :



REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.70	7.30	B	13 TYP.	
C	2.90	3.10	J	2.30 REF.	
D	0.02	0.10	1	6.30	6.70
E	0°	10°	2	6.30	6.70
I	0.60	0.80	3	3.30	3.70
H	0.25	0.35	4	3.30	3.70
			5	1.40	1.80

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	675	V
Gate-Source Voltage	V_{GS}	± 30	V
Continuous Drain Current, $V_{GS}@5V$	$I_D @ T_C=25^\circ C$	0.2	A
Continuous Drain Current, $V_{GS}@5V$	$I_D @ T_C=100^\circ C$	0.13	A
Pulsed Drain Current ¹	I_{DM}	0.5	A
Total Power Dissipation	$P_D @ T_C=25^\circ C$	1.13	W
Linear Derating Factor		0.01	W/°C
Single Pulse Avalanche Energy ²	E_{AS}	0.5	mJ
Avalanche Current	I_{AR}	1	A
Repetitive Avalanche Energy	E_{AR}	0.5	mJ
Operating Junction and Storage Temperature Range	T_j, T_{stg}	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-ambient Max.	R_{thj-a}	110	°C/W

Electrical Characteristics(Tj = 25°C Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	675	-	-	V	$V_{GS}=0, I_D=1mA$
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_j$	-	0.52	-	V/°C	Reference to 25°C, $I_D=1mA$
Gate Threshold Voltage	$V_{GS(th)}$	2.0	-	4.0	V	$V_{DS}=V_{GS}, I_D=250\mu A$
Forward Transconductance	g_{fs}	-	0.4	-	S	$V_{DS}=10V, I_D=0.2A$
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	$V_{GS}= \pm 30V$
Drain-Source Leakage Current(Tj=25°C)	I_{DSS}	-	-	10	uA	$V_{DS}=675V, V_{GS}=0$
Drain-Source Leakage Current(Tj=150°C)		-	-	100	uA	$V_{DS}=540V, V_{GS}=0$
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	8.0	Ω	$V_{GS}=10V, I_D=0.2A$
		-	-	10.0		$V_{GS}=5V, I_D=0.2A$
Total Gate Charge ³	Q_g	-	5.5	-	nC	$I_D=0.2A$ $V_{DS}=540V$ $V_{GS}=10V$
Gate-Source Charge	Q_{gs}	-	1.9	-		
Gate-Drain ("Miller") Charge	Q_{gd}	-	0.5	-		
Turn-on Delay Time ³	$T_{d(on)}$	-	7.7	-	ns	$V_{DD}=300V$ $I_D=0.2A$ $V_{GS}=10V$ $R_G=3.3\Omega$ $R_D=1500\Omega$
Rise Time	T_r	-	3.6	-		
Turn-off Delay Time	$T_{d(off)}$	-	24	-		
Fall Time	T_f	-	44	-		
Input Capacitance	C_{iss}	-	286	-	pF	$V_{GS}=0V$ $V_{DS}=25V$ $f=1.0MHz$
Output Capacitance	C_{oss}	-	25	-		
Reverse Transfer Capacitance	C_{rss}	-	6	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage ³	V_{SD}	-	-	1.2	V	$I_S=0.2A, V_{GS}=0V, T_j=25^\circ C$
Continuous Source Current (Body Diode)	I_S	-	-	0.2	A	$V_D=V_G=0V, V_S=1.2V$
Pulsed Source Current (Body Diode) ¹	I_{SM}	-	-	0.5	A	

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

2. Staring $T_j=25^\circ C, V_{DD}=50V, L=1mH, R_G=25\Omega, I_{AS}=1A$.

3. Pulse width $\leq 300\mu s$, duty cycle $\leq 2\%$.

Characteristics Curve

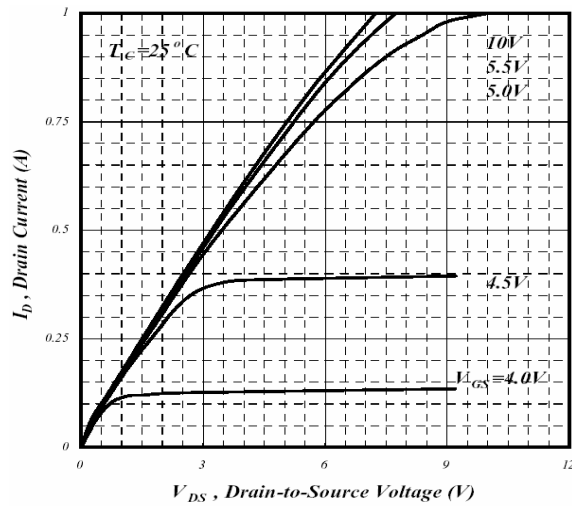


Fig 1. Typical Output Characteristics

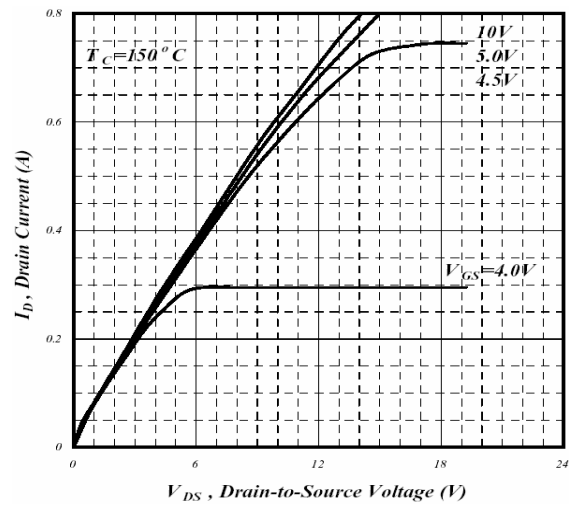


Fig 2. Typical Output Characteristics

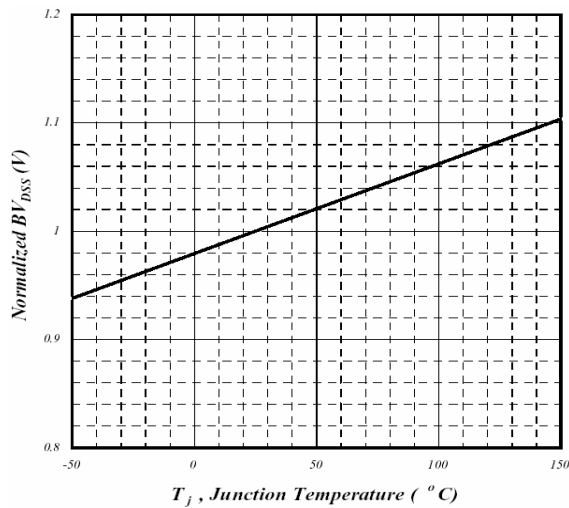
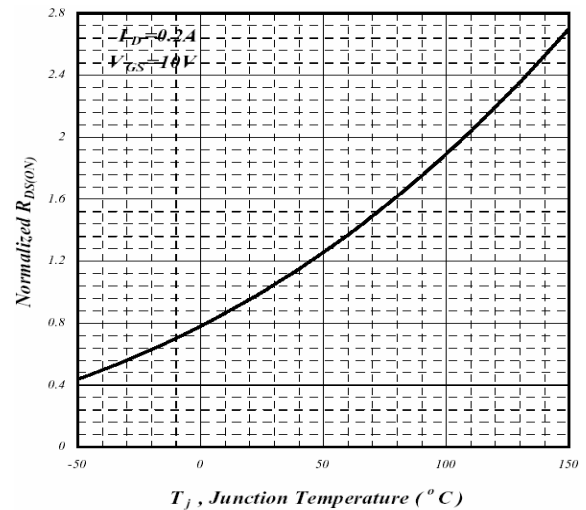
Fig 3. Normalized BV_{DS} v.s. Junction Temperature

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

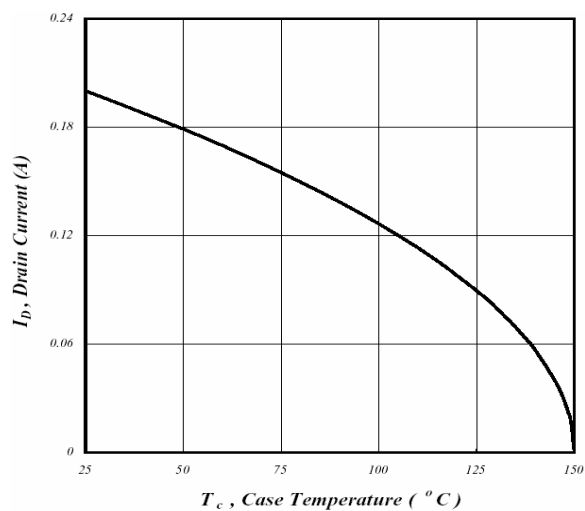


Fig 5. Maximum Drain Current v.s. Case Temperature

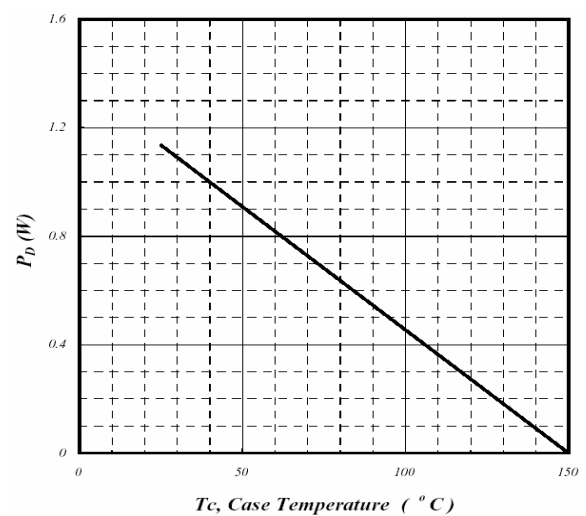


Fig 6. Type Power Dissipation

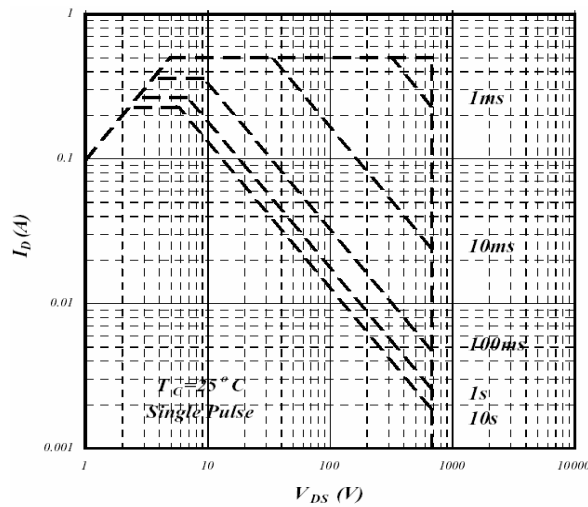


Fig 7. Maximum Safe Operating Area

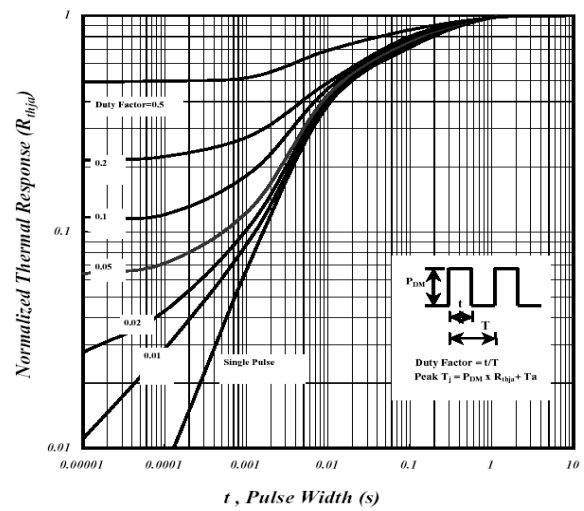


Fig 8. Effective Transient Thermal Impedance

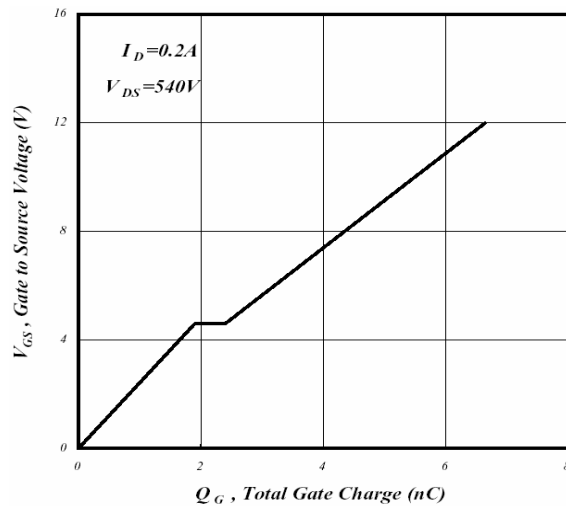


Fig 9. Gate Charge Characteristics

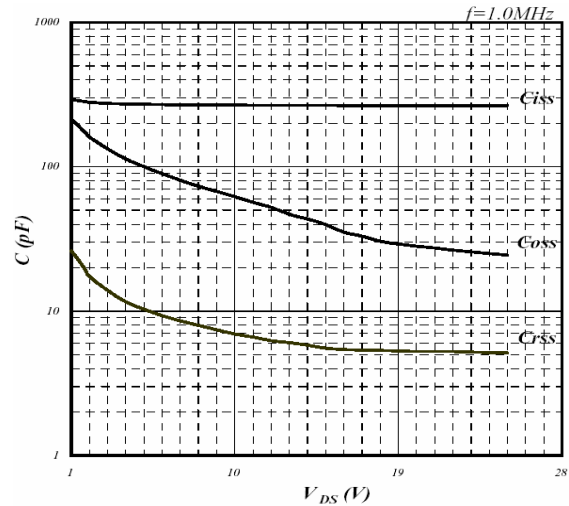


Fig 10. Typical Capacitance Characteristics

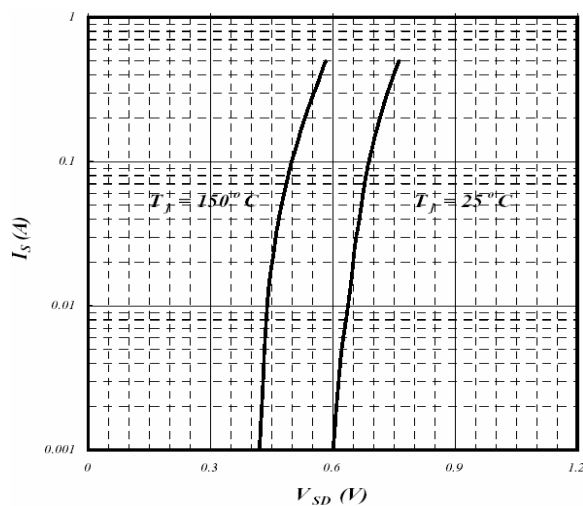


Fig 11. Forward Characteristics of Reverse Diode

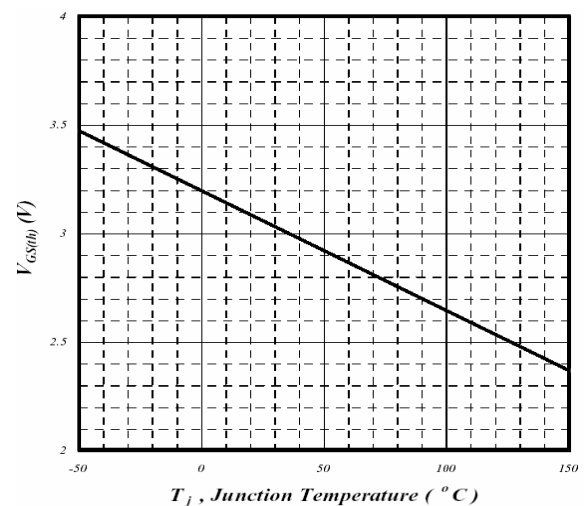


Fig 12. Gate Threshold Voltage v.s. Junction Temperature

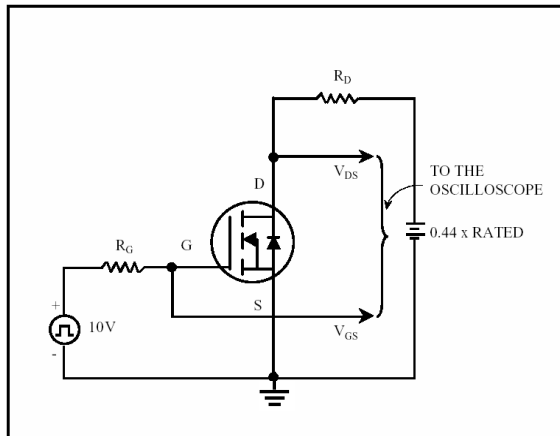


Fig 13. Switching Time Circuit

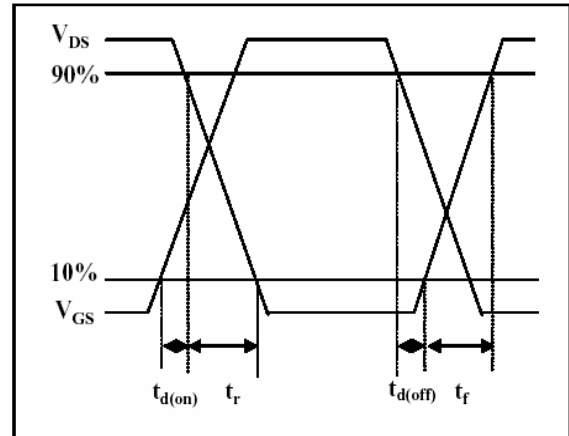


Fig 14. Switching Time Waveform

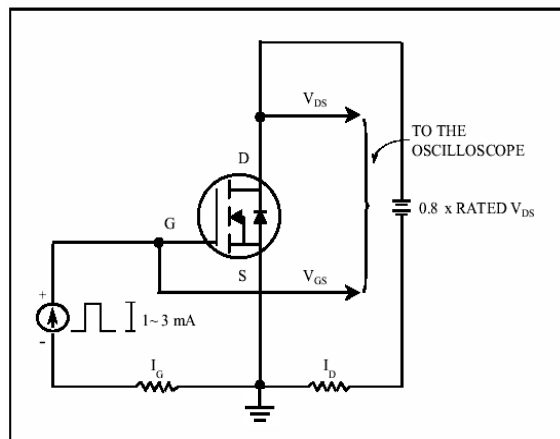


Fig 15. Gate Charge Circuit

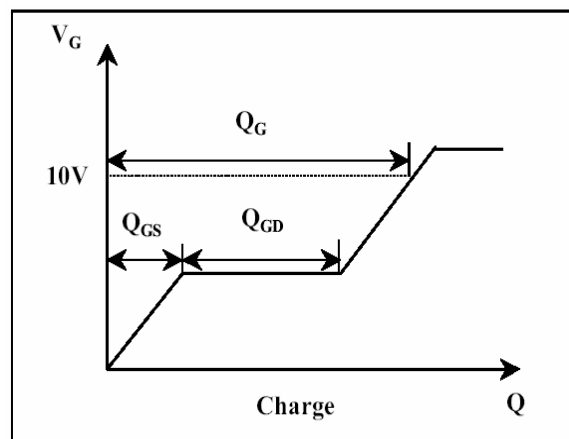


Fig 16. Gate Charge Waveform

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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