Pb Free Plating Product

GTM CORPORATION

ISSUED DATE :2005/05/18
REVISED DATE :

GE2761

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV_{DSS}	600/650V
$R_{DS(ON)}$	1.0Ω
I_D	10A

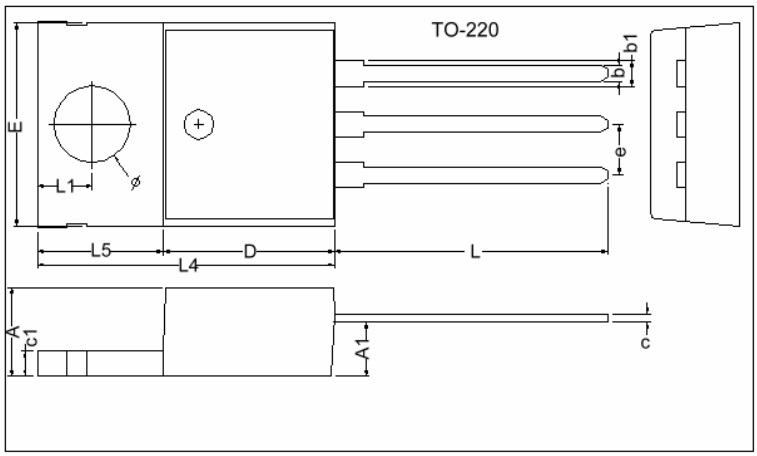
Description

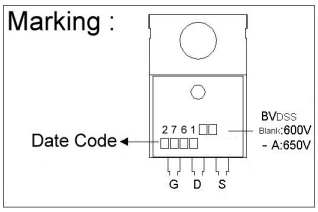
The GE2761 series provide the designer with best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.
The through-hole version (TO-220) is available for low-profile applications and suited for low voltage applications such as DC/DC converters.

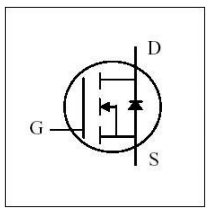
Features

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

Package Dimensions







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	4.40	4.80	c1	1.25	1.45
b	0.76	1.00	b1	1.17	1.47
c	0.36	0.50	L	13.25	14.25
D	8.60	9.00	e	2.54 REF.	
E	9.80	10.4	L1	2.60	2.89
L4	14.7	15.3	Ø	3.71	3.96
L5	6.20	6.60	A1	2.60	2.80

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage - /A	V_{DS}	600/650	V
Gate-Source Voltage	V_{GS}	±30	V
Continuous Drain Current , V_{GS}@10V	I_D @Tc=25℃	10	A
Continuous Drain Current , V_{GS}@10V	I_D @Tc=100℃	4.4	A
Pulsed Drain Current[1]	I_{DM}	18	A
Total Power Dissipation	P_D @Tc=25℃	104	W
Linear Derating Factor		0.8	W/℃
Avalanche Current	I_{AR}	10	A
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-case Max.	Rthj-c	1.2	℃/W
Thermal Resistance Junction-ambient Max.	Rthj-a	62	℃/W

Electrical Characteristics(Tj = 25℃ Unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	600	-	-	V	V_{GS}=0, I_D=250uA -
		650	-	-	V	V_{GS}=0, I_D=250uA A
Breakdown Voltage Temperature Coefficient	$\triangle BV_{DSS}/\triangle Tj$	-	0.6	-	V/℃	Reference to 25℃, I_D=1mA
Gate Threshold Voltage	$V_{GS(th)}$	2.0	-	4.0	V	V_{DS}=V_{GS}, I_D=250uA
Forward Transconductance	g_{fs}	-	4.5	-	S	V_{DS}=10V, I_D=3.5A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±30V
Drain-Source Leakage Current(Tj=25℃)	I_{DSS}	-	-	10	uA	V_{DS}=600V, V_{GS}=0
Drain-Source Leakage Current(Tj=150℃)		-	-	100	uA	V_{DS}=480V, V_{GS}=0
Static Drain-Source On-Resistance	$R_{DS(ON)}$	-	-	1.0	Ω	V_{GS}=10V, I_D=3.5A
Total Gate Charge[3]	Q_g	-	53	85	nC	I_D=10A V_{DS}=520V V_{GS}=10V
Gate-Source Charge	Q_{gs}	-	10	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	15	-		
Turn-on Delay Time[3]	$T_{d(on)}$	-	16	-	Ns	V_{DD}=320V I_D=10A V_{GS}=10V R_G=10Ω R_D=30Ω
Rise Time	T_r	-	20	-		
Turn-off Delay Time	$T_{d(off)}$	-	82	-		
Fall Time	T_f	-	36	-		
Input Capacitance	C_{iss}	-	2770	4430	pF	V_{GS}=0V V_{DS}=15V f=1.0MHz
Output Capacitance	C_{oss}	-	320	-		
Reverse Transfer Capacitance	C_{rss}	-	8	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage[3]	V_{SD}	-	-	1.5	V	I_S=10A, V_{GS}=0V, Tj=25℃
Reverse Recovery Time[3]	T_{rr}	-	610	-	ns	I_S=10A, V_{GS}=0V dI/dt=100A/μs
Reverse Recovery Charge	Q_{rr}	-	8.64	-	uC	

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

2. Staring Tj=25℃, V_{DD}=50V, L=1.2mH, R_G=25Ω, I_{AS}=10A.

3. Pulse width≦300us, duty cycle≦2%.

Characteristics Curve

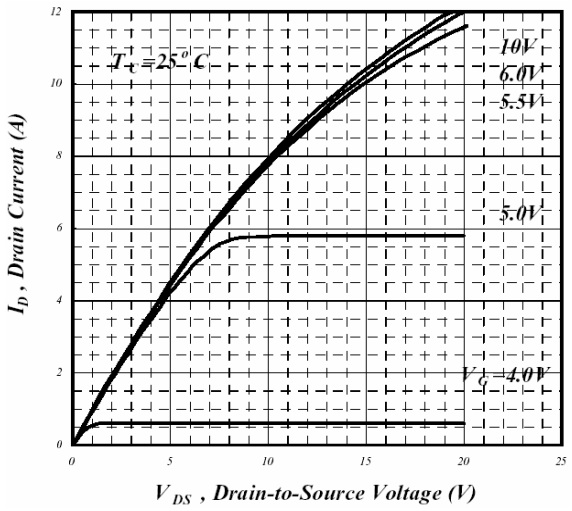


Fig 1. Typical Output Characteristics

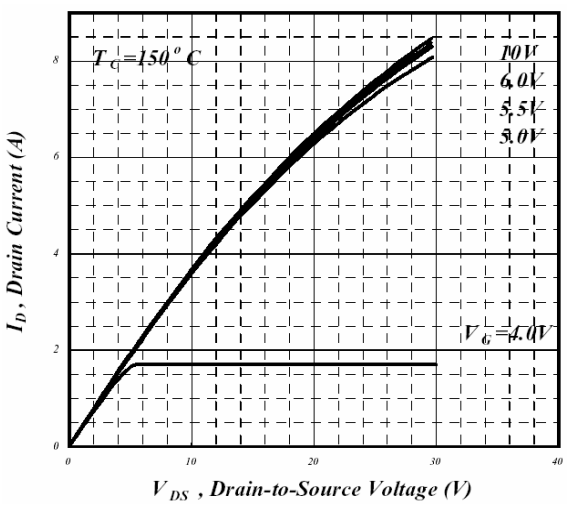


Fig 2. Typical Output Characteristics

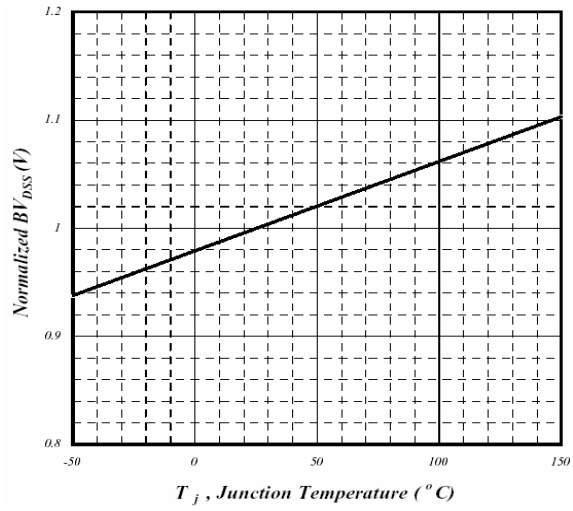


Fig 3. Normalized BVDSS v.s. Junction Temperature

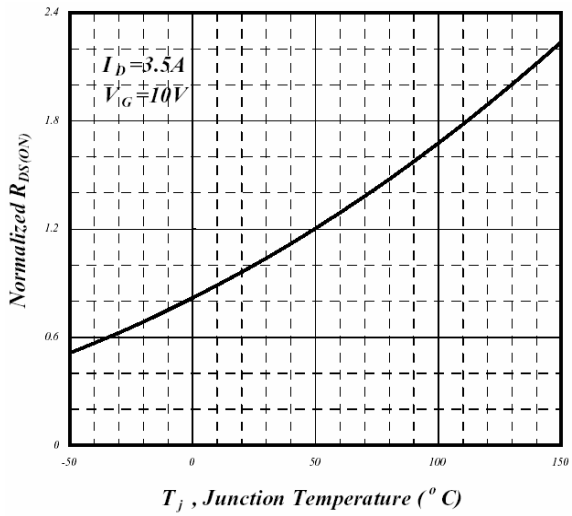


Fig 4. Normalized On-Resistance v.s. Junction Temperature

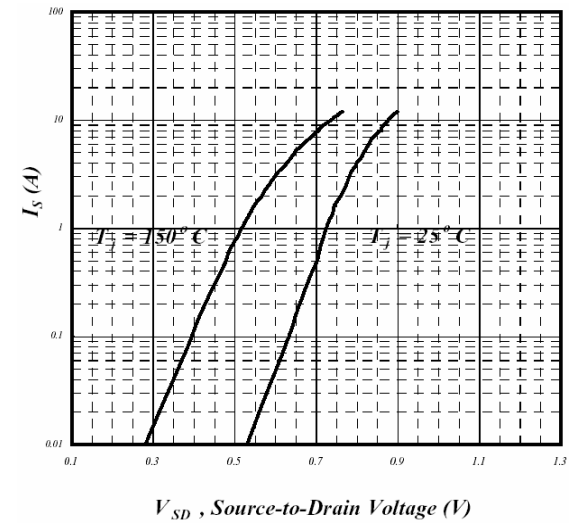


Fig 5. Forward Characteristics of Reverse Diode

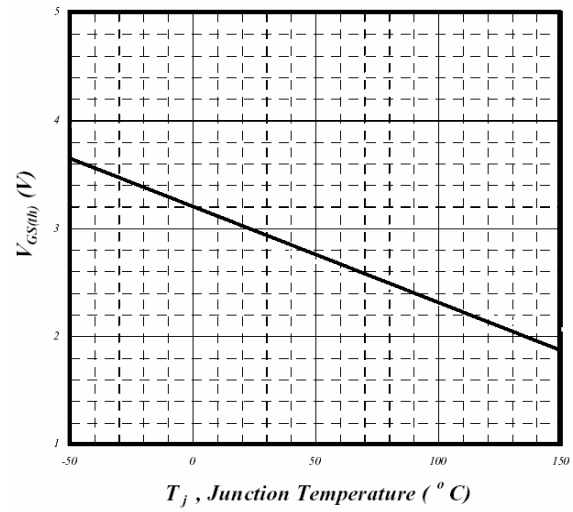


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

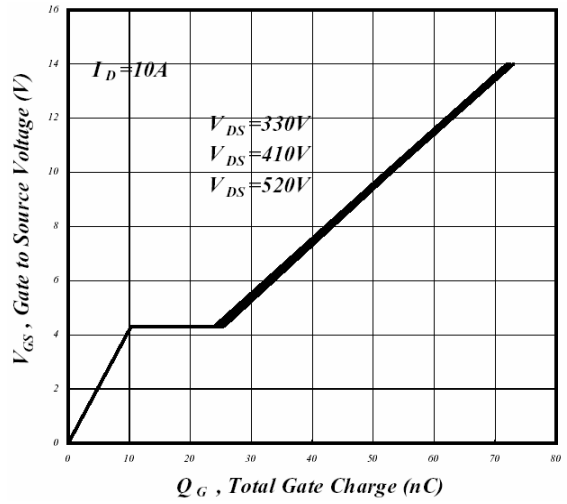


Fig 7. Gate Charge Characteristics

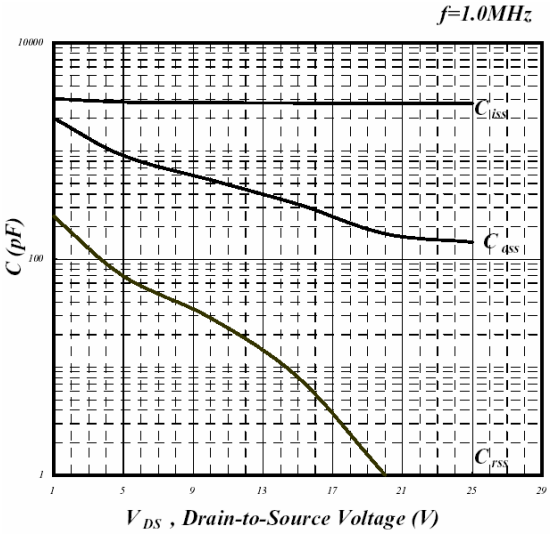


Fig 8. Typical Capacitance Characteristics

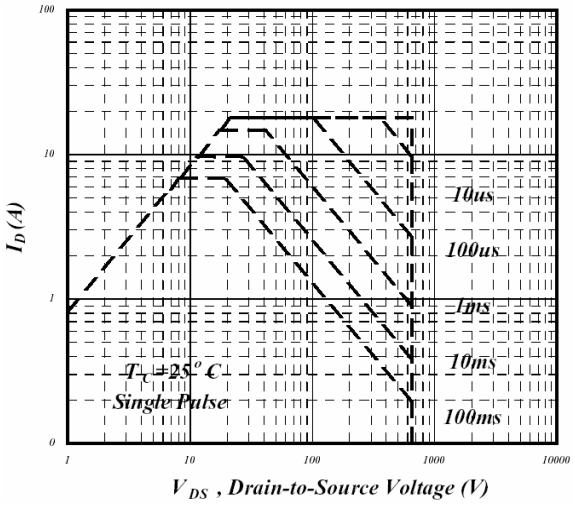


Fig 9. Maximum Safe Operating Area

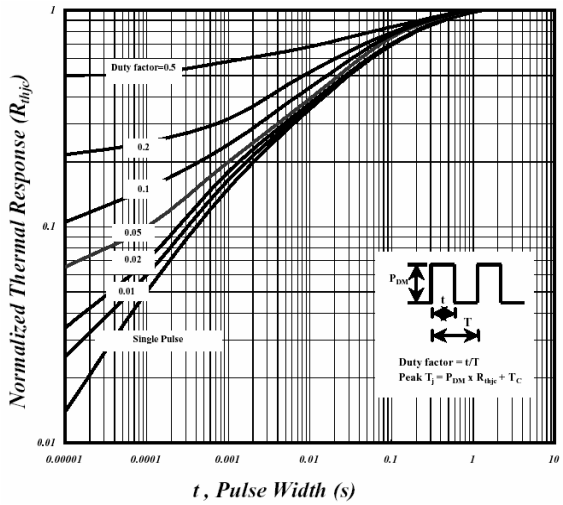


Fig 10. Effective Transient Thermal Impedance

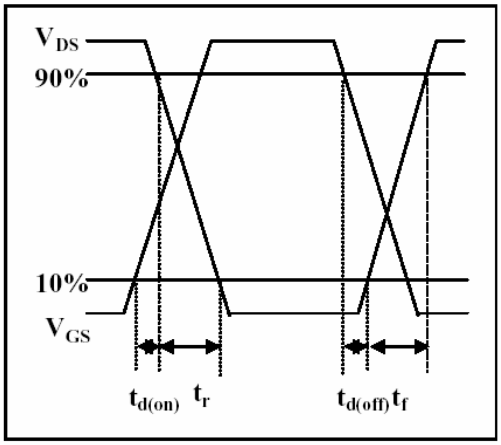


Fig 11. Switching Time Waveform

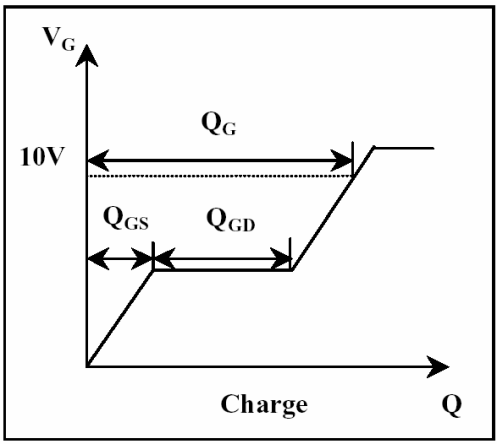


Fig 12. Gate Charge Waveform

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