

GE2761

N-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV _{DSS}	600/650V
R _{DS(ON)}	1.0Ω
I _D	10A

Description

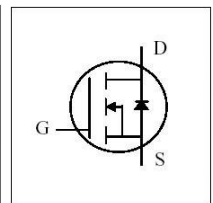
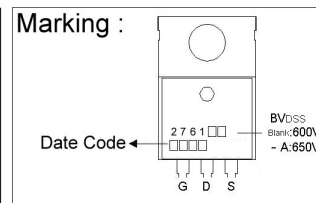
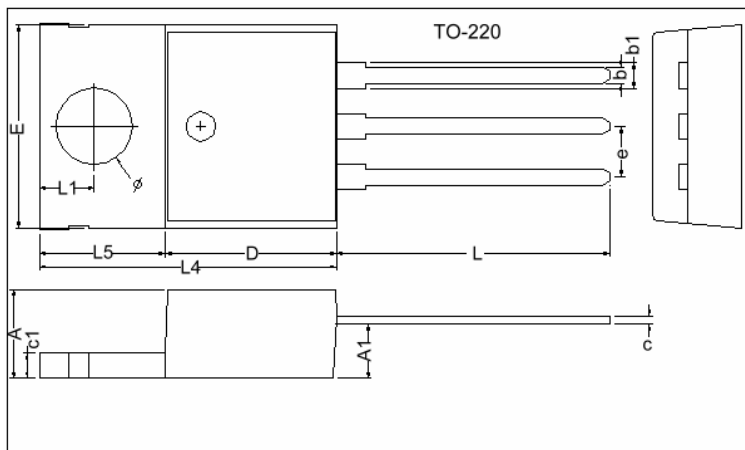
The GE2761 series provide the designer with best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.

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
Gate-Source Voltage		V _{GS}	±30
Continuous Drain Current, V _{GS} @10V	I _D @T _C =25°C	10	A
Continuous Drain Current, V _{GS} @10V	I _D @T _C =100°C	4.4	A
Pulsed Drain Current ¹	I _{DM}	18	A
Total Power Dissipation	P _D @T _C =25°C	104	W
Linear Derating Factor		0.8	W/°C
Avalanche Current	I _{AR}	10	A
Operating Junction and Storage Temperature Range	T _j , T _{stg}	-55 ~ +150	°C

Thermal Data

Parameter	Symbol	Value	Unit
Thermal Resistance Junction-case	R _{thj-c}	1.2	°C/W
Thermal Resistance Junction-ambient	R _{thj-a}	62	°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}	600	-	-	V	V _{GS} =0, I _D =250uA -
		650	-	-	V	V _{GS} =0, I _D =250uA A
Breakdown Voltage Temperature Coefficient	$\Delta BV_{DSS} / \Delta T_j$	-	0.6	-	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 =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(T _j =25°C)	I _{DSS}	-	-	10	uA	V _{DS} =600V, V _{GS} =0
Drain-Source Leakage Current(T _j =150°C)		-	-	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") Charge	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, T _j =25°C
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 T_j=25°C, V_{DD}=50V, L=1.2mH, R_G=25Ω, I_{AS}=10A.

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

Characteristics Curve

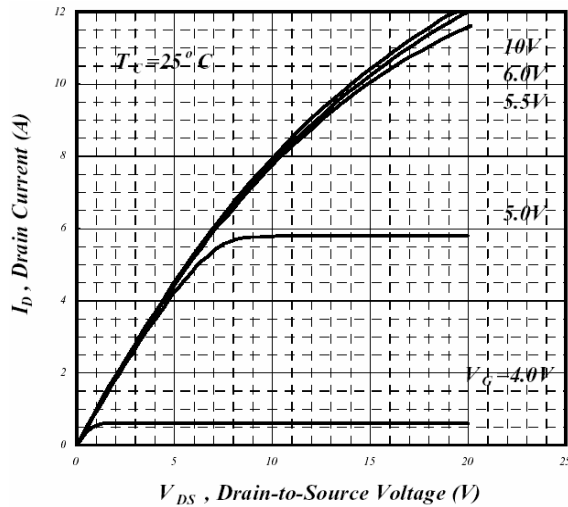


Fig 1. Typical Output Characteristics

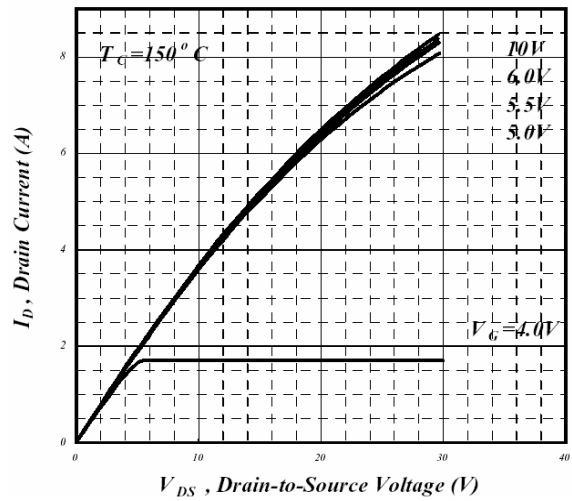


Fig 2. Typical Output Characteristics

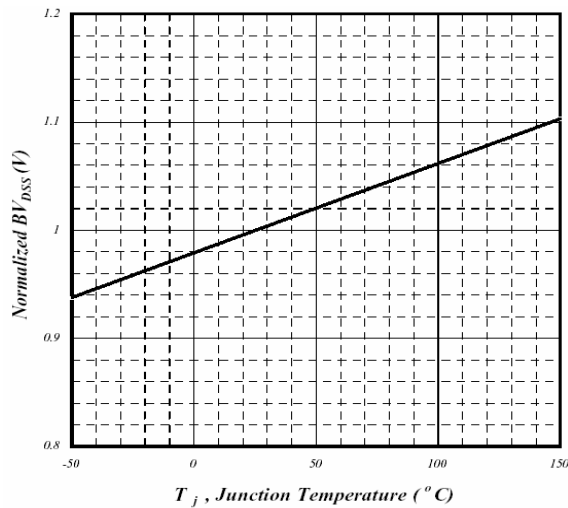


Fig 3. Normalized BV_{DS} v.s. Junction Temperature

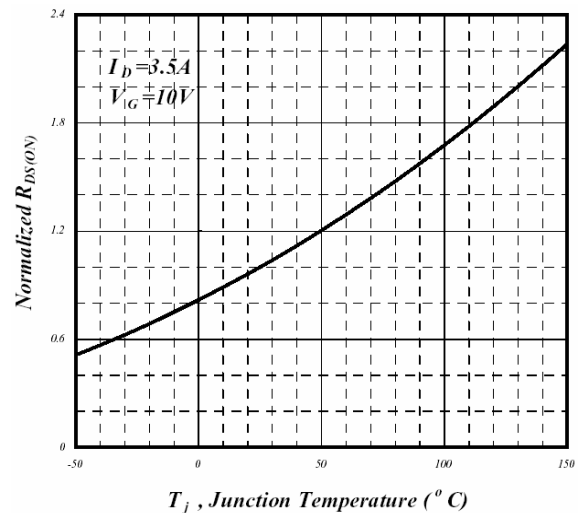


Fig 4. Normalized On-Resistance v.s. Junction Temperature

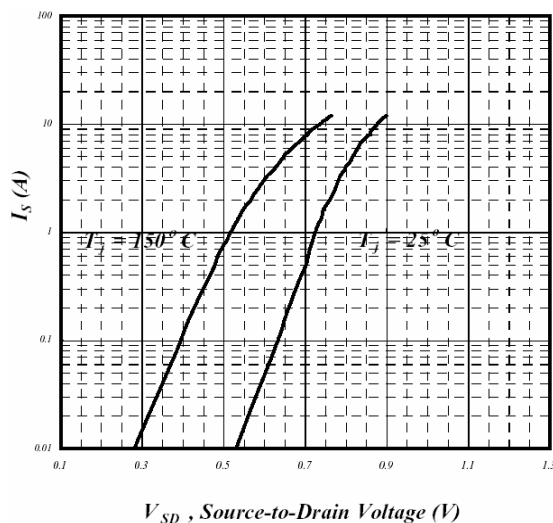


Fig 5. Forward Characteristics of Reverse Diode

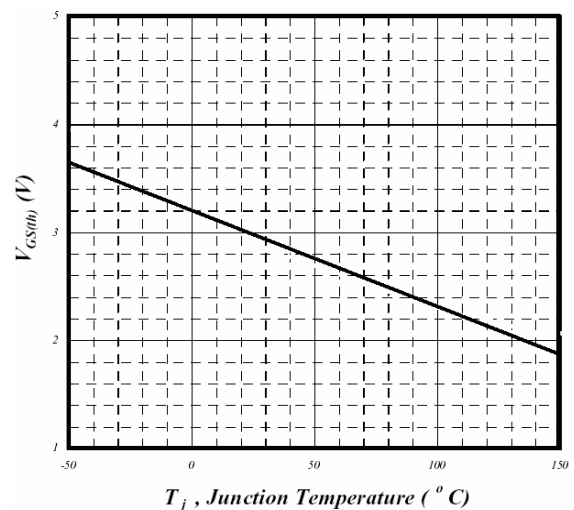


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

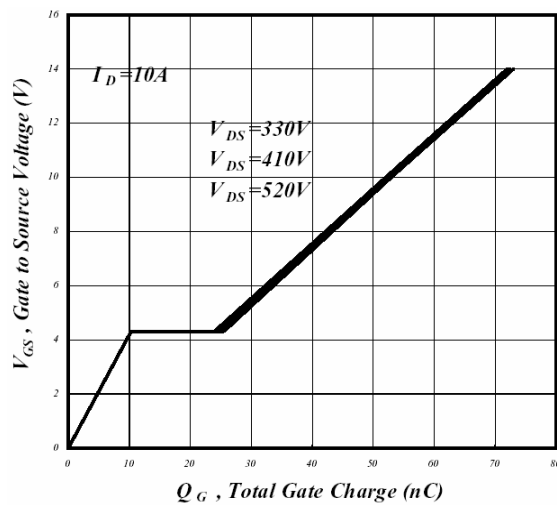


Fig 7. Gate Charge Characteristics

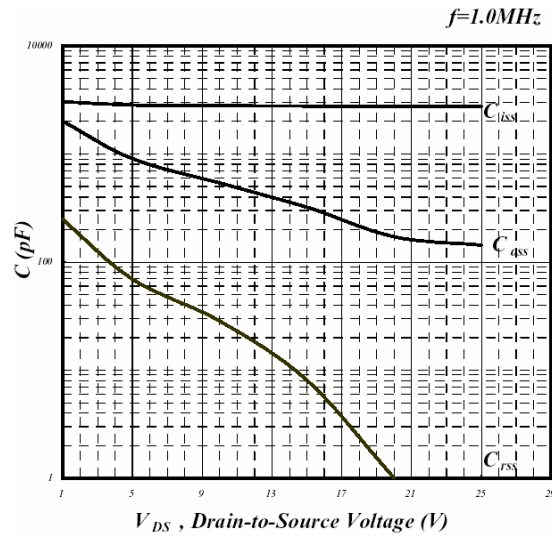


Fig 8. Typical Capacitance Characteristics

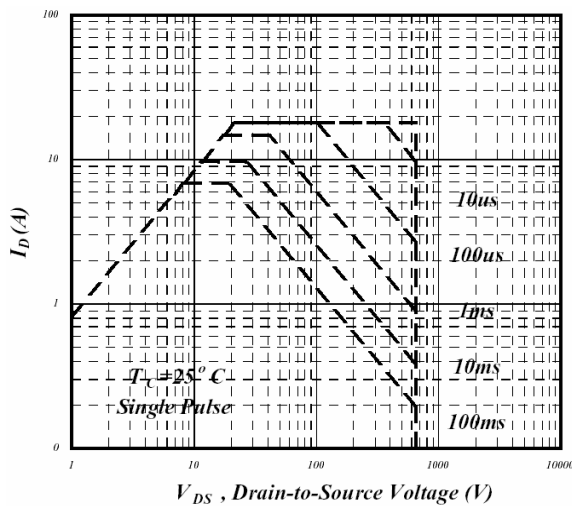


Fig 9. Maximum Safe Operating Area

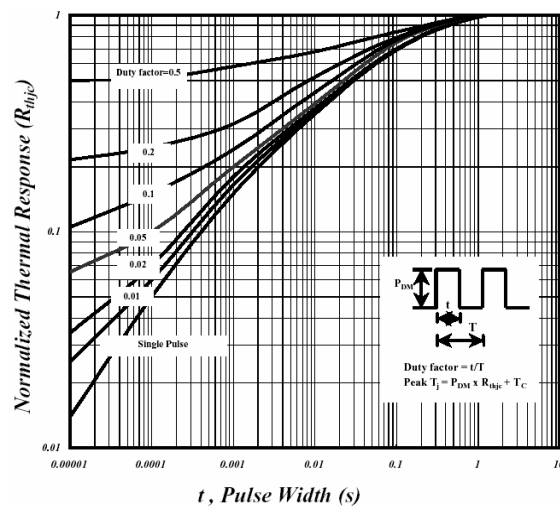


Fig 10. Effective Transient Thermal Impedance

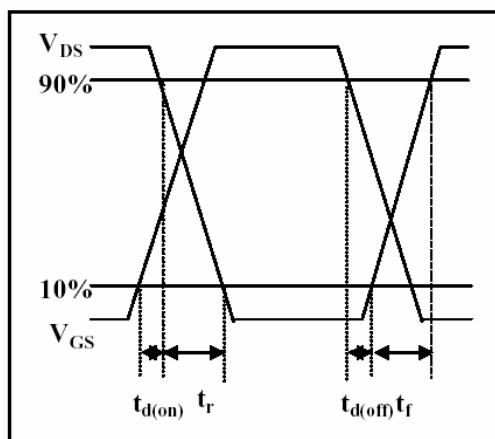


Fig 11. Switching Time Waveform

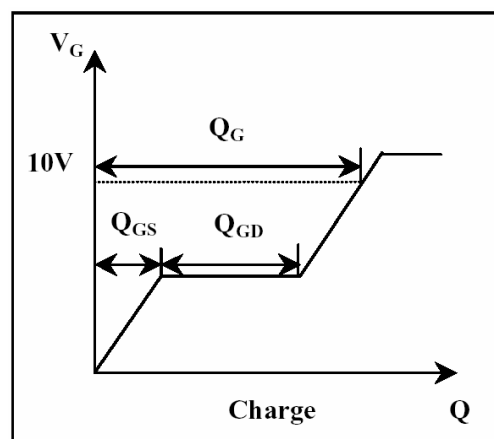


Fig 12. Gate Charge Waveform

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