GJ6679

P-CHANNEL ENHANCEMENT MODE POWER MOSFET

BV_{DSS}	-30V
$R_{DS(ON)}$	9mΩ
I_D	-75A

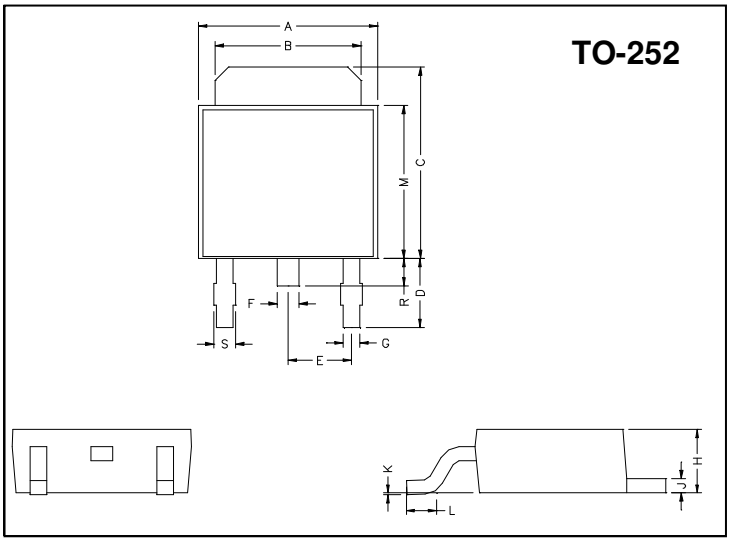
Description

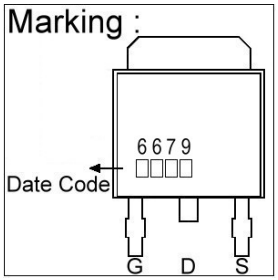
The GJ6679 provide the designer with the best combination of fast switching, ruggedized device design, low on-resistance and cost-effectiveness.
The TO-252 package is universally preferred for all commercial-industrial surface mount applications and suited for low voltage applications such as DC/DC converters.

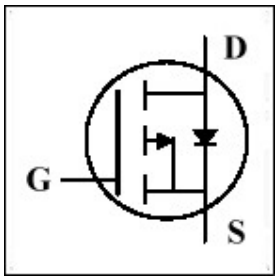
Features

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

Package Dimensions







REF.	Millimeter		REF.	Millimeter	
	Min.	Max.		Min.	Max.
A	6.40	6.80	G	0.50	0.70
B	5.20	5.50	H	2.20	2.40
C	6.80	7.20	J	0.45	0.55
D	2.40	3.00	K	0	0.15
E	2.30 REF.		L	0.90	1.50
F	0.70	0.90	M	5.40	5.80
S	0.60	0.90	R	0.80	1.20

Absolute Maximum Ratings

Parameter	Symbol	Ratings	Unit
Drain-Source Voltage	V_{DS}	-30	V
Gate-Source Voltage	V_{GS}	±25	V
Continuous Drain Current, V_{GS}@10V	I_D @Tc=25℃	-75	A
Continuous Drain Current, V_{GS}@10V	I_D @Tc=100℃	-50	A
Pulsed Drain Current[1]	I_{DM}	-300	A
Total Power Dissipation	P_D @Tc=25℃	89	W
Linear Derating Factor		0.71	W/℃
Operating Junction and Storage Temperature Range	Tj, Tstg	-55 ~ +150	℃

Thermal Data

Parameter		Symbol	Value	Unit
Thermal Resistance Junction-case	Max.	Rthj-case	1.4	℃/W
Thermal Resistance Junction-ambient	Max.	Rthj-amb	110	℃/W

Electrical Characteristics (Tj = 25℃ unless otherwise specified)

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Drain-Source Breakdown Voltage	BV_{DSS}	-30	-	-	V	V_{GS}=0, I_D=-250uA
Breakdown Voltage Temperature Coefficient	$\triangle BV_{DSS}/\triangle Tj$	-	-0.03	-	V/℃	Reference to 25℃, 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}	-	34	-	S	V_{DS}=-10V, I_D=-24A
Gate-Source Leakage Current	I_{GSS}	-	-	±100	nA	V_{GS}= ±25V
Drain-Source Leakage Current(Tj=25℃)	I_{DSS}	-	-	-1	uA	V_{DS}=-30V, V_{GS}=0
Drain-Source Leakage Current(Tj=150℃)		-	-	-25	uA	V_{DS}=-24V, V_{GS}=0
Static Drain-Source On-Resistance[2]	$R_{DS(ON)}$	-	-	9	mΩ	V_{GS}=-10V, I_D=-30A
		-	-	15		V_{GS}=-4.5V, I_D=-24A
Total Gate Charge[2]	Q_g	-	42	67	nC	I_D=-16A V_{DS}=-24V V_{GS}=-4.5V
Gate-Source Charge	Q_{gs}	-	6	-		
Gate-Drain ("Miller") Change	Q_{gd}	-	25	-		
Turn-on Delay Time[2]	$T_{d(on)}$	-	11	-	ns	V_{DS}=-15V I_D=-16A V_{GS}=-10V R_G=3.3Ω R_D=0.94Ω
Rise Time	T_r	-	35	-		
Turn-off Delay Time	$T_{d(off)}$	-	58	-		
Fall Time	T_f	-	78	-		
Input Capacitance	C_{iss}	-	2870	4590	pF	V_{GS}=0V V_{DS}=-25V f=1.0MHz
Output Capacitance	C_{oss}	-	960	-		
Reverse Transfer Capacitance	C_{rss}	-	740	-		

Source-Drain Diode

Parameter	Symbol	Min.	Typ.	Max.	Unit	Test Conditions
Forward On Voltage[2]	V_{SD}	-	-	-1.2	V	I_S=-24A, V_{GS}=0V
Reverse Recovery Time[2]	T_{rr}	-	47	-	ns	I_S=-16A, V_{GS}=0V dI/dt=100A/μs
Reverse Recovery Charge	Q_{rr}	-	43	-	nC	

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

2. Pulse width≦300us, duty cycle≦2%.

Characteristics Curve

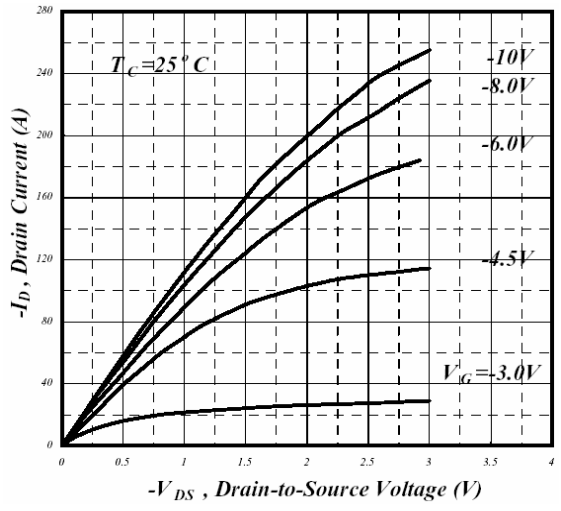


Fig 1. Typical Output Characteristics

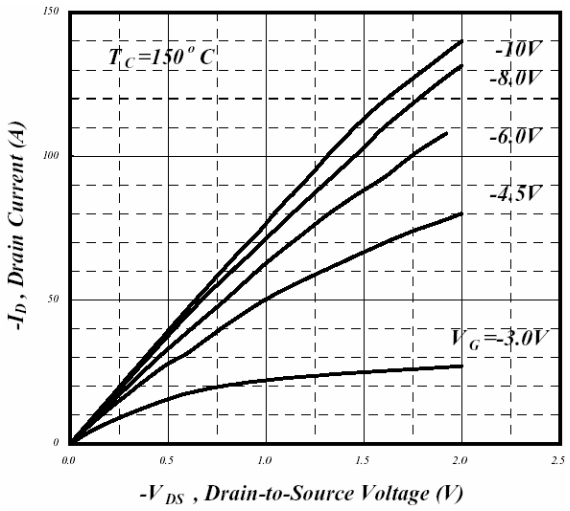


Fig 2. Typical Output Characteristics

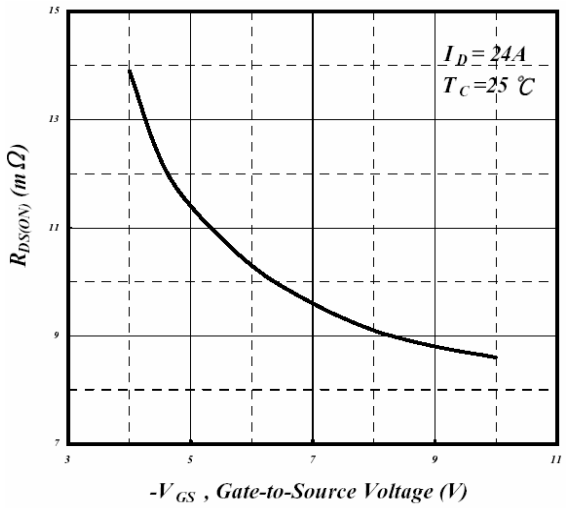


Fig 3. On-Resistance v.s. Gate Voltage

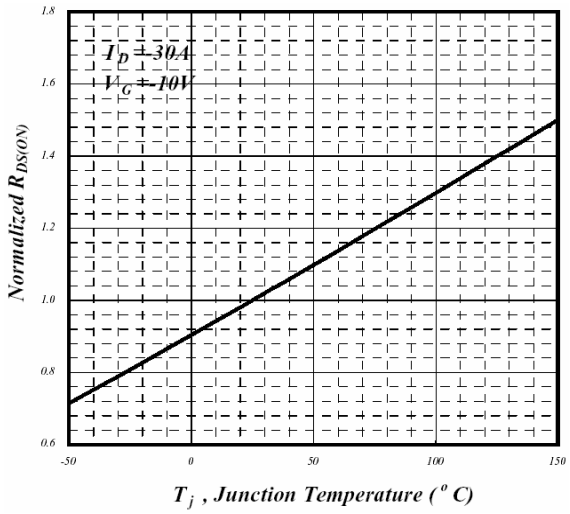


Fig 4. Normalized On-Resistance v.s. Junction Temperature

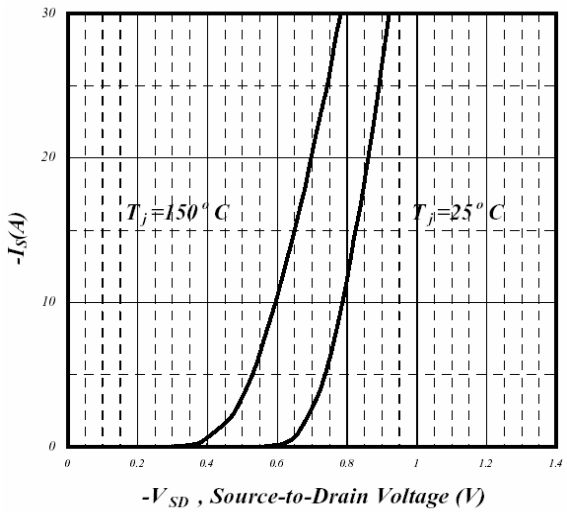


Fig 5. Forward Characteristics of Reverse Diode

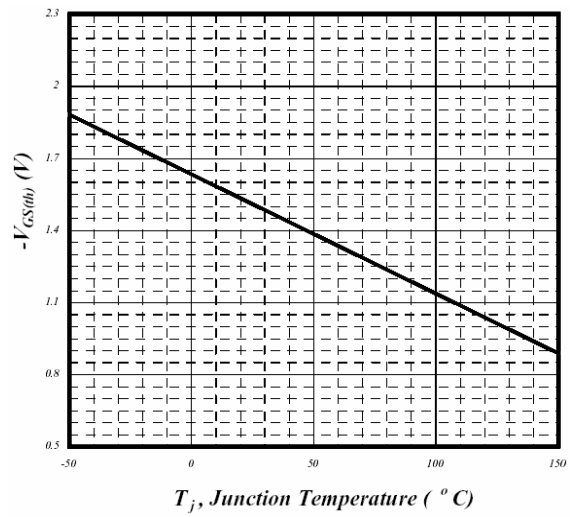


Fig 6. Gate Threshold Voltage v.s. Junction Temperature

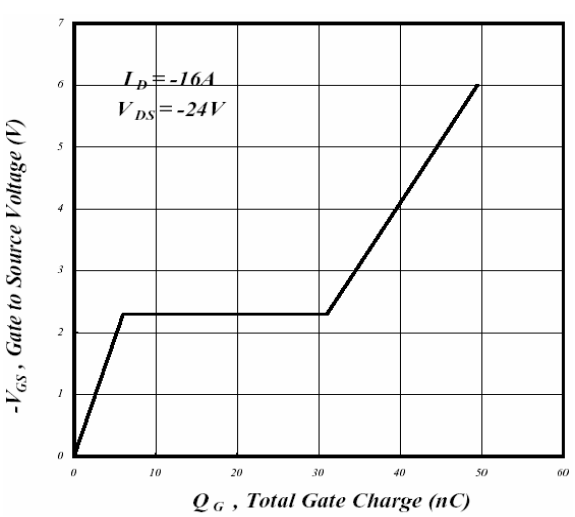


Fig 7. Gate Charge Characteristics

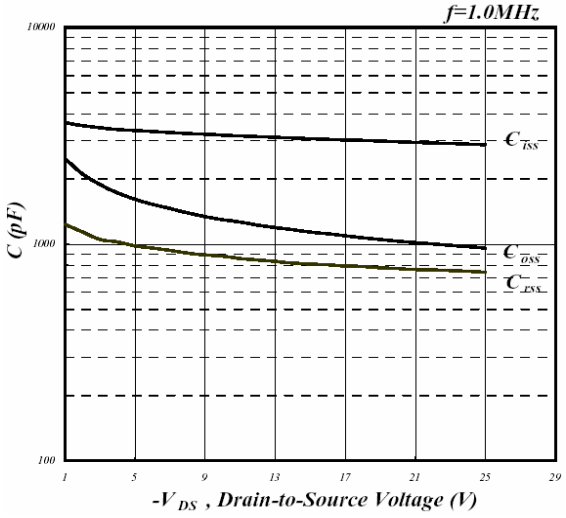


Fig 8. Typical Capacitance Characteristics

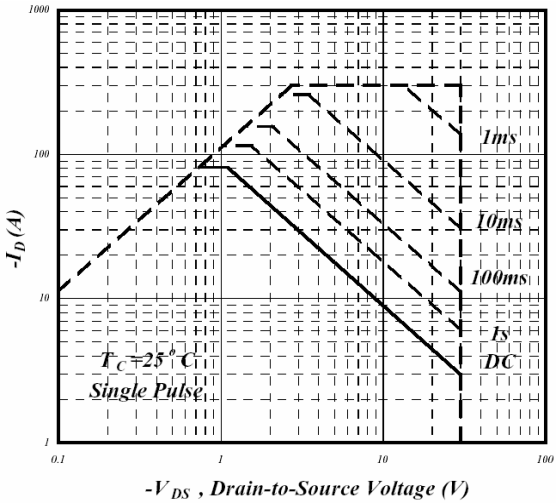


Fig 9. Maximum Safe Operating Area

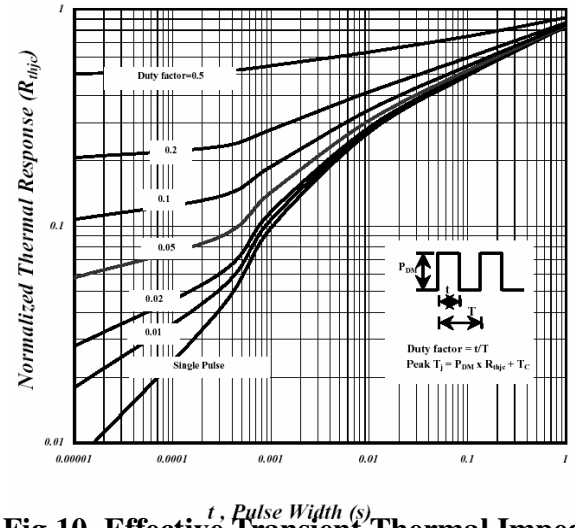


Fig 10. Effective Transient Thermal Impedance

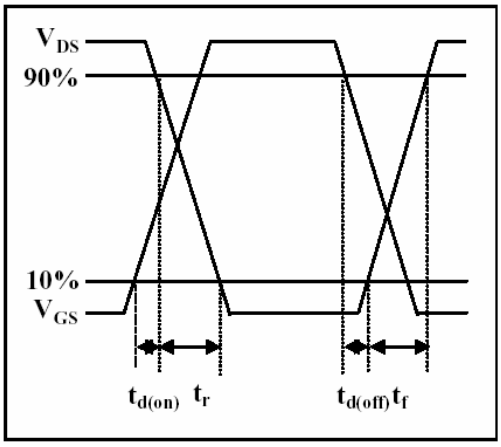


Fig 11. Switching Time Waveform

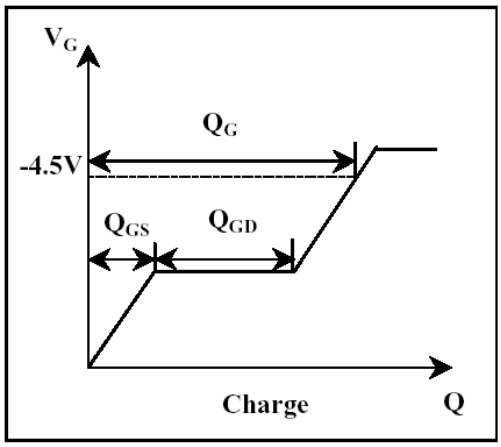


Fig 12. Gate Charge Waveform

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